United States Department of the Interior
Bureau of Land Management

Burns District Office
28910 Highway 20 West
Hines, Oregon 97738

August 2004

Proposed Resource Management Plan and Final Environmental Impact Statement

Volume 1 [of 3] - *Chapters 1 through 4 of Main Text*

Andrews Management Unit/Steens Mountain Cooperative Management and Protection Area

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historic places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.

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Photo of Alvord Tree by Mark Armstrong

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

Andrews Management Unit/Steens Mountain Cooperative Management and Protection Area Proposed Resource Management Plan and Final Environmental Impact Statement

Prepared by

Burns District Office
Burns District
August 2004

Elaine M. Brong
Oregon/Washington State Director

Dana R. Shuford
District Manager
Burns District Office

Karla Bird
Field Manager
Andrews Resource Area

Joan M. Suther
Field Manager
Three Rivers Resource Area

Andrews Management Unit/Steens Mountain Cooperative Management and
Protection Area Proposed Resource Management Plan/Final Environmental Impact Statement

1. Responsible Agency: United States Department of the Interior, Bureau of Land Management

2. Draft ( ) Final (X)

3. Administrative Action (X) Legislative Action ( )

4. Abstract: The Steens Mountain Cooperative Management and Protection Act of 2000 created the Steens Mountain Cooperative Management and Protection Area (CMPA). A management plan is in preparation for the CMPA and the surrounding Andrews Management Unit (AMU), collectively called the Planning Area. The Proposed Resource Management Plan (RMP)/Final Environmental Impact Statement (FEIS) for the AMU/CMPA has identified five alternatives for managing approximately 1,649,470 acres of public lands, 1,221,314 acres of which are in the AMU and 428,156 acres in the CMPA, located primarily in Harney County, southeastern Oregon (Planning Area). Information provided by BLM personnel, other agencies and organizations, and the public have helped to develop the five alternatives described and analyzed in this Proposed RMP/FEIS. Alternative A is the continuation of present management. Alternative B minimizes human intervention in the ecosystem and minimizes commodity production. Alternative C emphasizes resource values and the functioning of natural systems. The Proposed RMP (formerlyAlternative D), provides a balance with a high level of natural resource protection and improvement in ecological conditions while allowing commodity production. Alternative E emphasizes commodity production or extraction.

Major RMP issues include the following: 1) management of the Steens Mountain Wilderness Area; 2) management of special designated areas; 3) management of riparian and wetland areas; 4) management of upland habitats; management of recreation in the Planning Area; 5) management of transportation in the CMPA; 6) and support for local tribes and communities.

The Proposed RMP/FEIS incorporates the scientific findings and assessments from the Interior Columbia Basin Ecosystem Management Project that are applicable to the Planning Area.

Incorporated as an appendix (U) to the Proposed RMP is the Steens Mountain Wilderness and Wild and Scenic Rivers Management Plan. There will be a 30-day public comment period on this plan, which will coincide with the 30-day protest period for the Proposed RMP/FEIS as a whole.

5. Date comments must be received: The close of the 30-day comment/protest period will be announced in news releases, legal notices, individual mailings, and on the district planning web page (www.or.blm.gov/Burns/Planning/Andrews_Steens_RMP/Andrews_Steens_RMP-EIS.html)

6. For further information contact:

Gary Foulkes
Bureau of Land Management
Burns District Office
28910 Highway 20 West
Hines, Oregon 97738
Telephone: (541) 573-4541
Email: Gary_Foulkes@or.blm.gov

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Burns District Office
28910 Highway 20 West
Hines, Oregon 97738
or020mb@or.blm.gov
www.or.blm.gov/Burns/

IN REPLY REFER TO:

1610 (020) N

Dear Interested Party:

In accordance with the Federal Land Policy and Management Act, the National Environmental Policy Act (NEPA), and the Steens Mountain Cooperative Management and Protection Act of 2000, the Bureau of Land Management (BLM) Burns District Office has prepared for your review the attached Andrews Management Unit (AMU)/Steens Mountain Cooperative Management and Protection Area (CMPA) Proposed Resource Management Plan and Final Environmental Impact Statement (Proposed RMP/FEIS). This document integrates all resource management activities in the Planning Area (all of the Andrews Resource Area plus a small portion of the Three Rivers Resource Area) into a single, unified land use plan that will replace the Andrews Management Framework Plan and subsequent amendments as well as parts of the Three Rivers RMP. The proposed land use plan and FEIS details and analyzes five land management alternatives, including the Proposed RMP. Within the next six months, two RMPs will be finalized through two Records of Decision (RODs). One RMP/ROD will address management of the CMPA while the second will address that of the AMU.

The Draft RMP/Draft EIS was made available for a 90-day public comment period in early October 2003. Approximately 5,600 comment submissions were received. Substantive comments pertinent to this land use planning process were summarized and are found, along with BLM responses, (Appendix T) in Volume 2 of the attached document. Significant changes since the Draft document are summarized in Chapter 1 and are underlined throughout the document.

Additional hard copies, as well as electronic versions, of the Proposed RMP/FEIS may be obtained at the address above. The document is also available on the internet at www.or.blm.gov/Burns/Planning.

The Proposed RMP incorporates both proposed **land use planning decisions** and more specific proposed project level or **implementation decisions.** Land use planning decisions are those which consist of desired outcomes (goals, standards and objectives) and the allowable uses (including allocations, levels of use, and restrictions on use) and management actions necessary to achieve those outcomes. Land use plan decisions provide management direction and guide future actions. When land use plan decisions are proposed, the public has an opportunity to protest them to the BLM Director prior to their approval. The Office of Hearings and Appeals (OHA) does not have jurisdiction to review land use plan decisions. Thus, there are no further administrative remedies for resolution of protests. Implementation decisions generally constitute BLM's final approval allowing on-the-ground actions to proceed. These types of decisions require site-specific planning and NEPA analysis. Unlike land use plan decisions, implementation decisions are not subject to protest under

the planning regulations. Instead, implementation decisions are subject to various administrative remedies, primarily appeals to the OHA. Land use planning decisions can be distinguished from implementation decisions in that, although the former are themselves final and effective upon adoption, they normally require additional decision steps (such as permit approvals) before activities having on-the-ground impacts can be carried out.

In this document protestable proposed land use plan decisions are presented in the following resource categories:

- Rights of Way avoidance/exclusion areas;
- Land tenure zoning classifications;
- Designations of Special Recreation Management Areas;
- Visual Resource Management classifications;
- Off Highway Vehicle area designations;
- Designation of Areas of Critical Environmental Concern;
- Wild and Scenic Rivers suitability;
- Extent of allowable livestock grazing;
- Development of CMPA and AMU transportation plan criteria;
- Wildland Fire Management; and
- Wild Horse Herd Management Areas boundary changes.

You now have the opportunity to protest the proposed **land use planning decisions** contained in the Proposed RMP/FEIS. The BLM Planning Regulations, 43 CFR 1610.5-2, state that any person who participated in the planning process and has an interest which may be adversely affected may protest the proposed land use planning decision(s). A protest may raise only those issues that were submitted for the record during the planning process. Protests must be filed within 30 days of the date the Environmental Protection Agency publishes its Notice of Availability of the FEIS in the *Federal Register*. The specific protest period closure date will be announced through one or more of the following: local news media, postcards or newsletters, or the Burns District website at the internet address above. To be considered timely, your protest must be postmarked no later than the last day of the protest period. Though not a requirement, we suggest you send your protest by certified mail, return receipt requested. Written protests must be submitted to the following address:

Director
Bureau of Land Management
Attention: Ms. Brenda Williams, Protests Coordinator
WO-210/LS-1075
Department of the Interior
Washington DC, 20240

To expedite delivery in the Washington DC area, you may wish to send your protest via one of the express air delivery services to:

Director
Bureau of Land Management
Attention: Ms. Brenda Williams, Protests Coordinator
WO-210
1620 L Street NW, Suite 1075
Washington DC, 20036

You may also wish to send a copy (in addition to the signed original sent via regular mail or express delivery) of the protest by FAX or e-mail to Ms. Brenda Williams at:

FAX: 202-452-5112 or e-mail: bhudgens@wo.blm.gov

You are also encouraged (but not required) to forward a copy of your protest to the Burns District Manager at the address listed in the Burns District letterhead. To be considered complete, your protest must contain the following information at a minimum:

- Name, mailing address, telephone number and the affected interest of the person filing the protest.
- A statement of the issue(s) being protested.
- A statement of the parts(s) of the proposed plan being protested. To the extent possible, reference specific pages, paragraphs, and numbered sections of the document.
- A copy of all your documents addressing the issue or issues which were previously discussed with the BLM.
- A concise statement explaining why the proposed decision is believed to be incorrect. This is a critical part of your protest. Document all relevant facts, as much as possible. A protest that merely expresses disagreement with the State Director's proposed decision, without providing any supporting data, will not be considered a valid protest.

Proposed **implementation level decisions** contained in this document are **not** protestable under the BLM planning regulations. Rather, a separate appeal process for specific proposed actions will be offered at the time the Final RMPs and RODs are approved and made available to the public. Examples of implementation level decisions include:

- Allotment-specific permitted use levels;
- Allotment-specific livestock grazing systems;
- Specific range improvement projects;
- Specific vegetation and weed treatment projects;
- Specific fuel loading and hazard reduction projects;
- Specific recreational facility development;
- Setting appropriate management levels for wild horse Herd Management Areas;
- Some specific Area of Critical Environmental Concern management direction;
- Specific decisions in the Wilderness and Wild and Scenic Rivers Management Plan; or
- Specific road closures/restrictions and recreation development proposals.

Concurrent with the protest period for the Proposed RMP/FEIS is a 30-day public comment period for the proposed Steens Mountain Wilderness and Wild and Scenic Rivers Management Plan. As the latter plan contains implementation level decisions and not land use plan decisions, the proposed management decisions contained within are not subject to protest. Comments on the proposed Steens Mountain Wilderness and Wild and Scenic Rivers Management Plan may be addressed to Gary Foulkes at the address in the Burns District Office letterhead, email at gfoulkes@or.blm.gov, or comments may be submitted on the Burns District website at www.or.blm.gov/Burns/Planning/Planning_Index.htm. In order to be considered, comments must be postmarked by the comment closing date which will coincide with the closing date for the protest period.

We appreciate your help in this planning effort and look forward to your continued interest and participation as the plans are implemented. For additional information or clarification regarding this document or the planning protest process, please contact Gary Foulkes (see above for contact information).

Comments and protests on the Proposed RMP/FEIS, and comments on the proposed Steens Mountain Wilderness and Wild and Scenic Rivers Management Plan, including names and street addresses, will be available for public review at the Burns District Office during regular business hours 7:30 a.m. to 4:30 p.m., Monday through Friday, except holidays. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment/protest. Such requests will be honored to the extent allowed by law. All submissions from organizations and businesses, and from individuals identifying themselves as representatives, or officials of organizations or businesses, will be available for public inspection in their entirety.

Sincerely,

Karla Bird

Karla Bird
Andrews Resource Area Field Manager

HARNEY COUNTY COURT

Office of Judge Steven E. Grasty

450 North Buena Vista, Burns, Oregon 97720
Phone: 541-573-6356 Fax: 541-573-8387
E-Mail: sgrasty@oregonvos.net
Websites: www.co.harney.or.us ✦ www.harneycountyeconomicdevelopment.com

June 23, 2004

RE: Andrews Management Unit/Steens Mountain Cooperative Management and Protection Area

Dear Interested Party:

On behalf of the Harney County Court I would like to take this opportunity to thank the managers and staff of the Bureau of Land Management for their cooperation in the drafting and analysis of the resource management plan for the Andrews Management Unit/Steens Mountain Cooperative Management and Protection Area.

Harney County has appreciated the opportunity to be a Cooperating Agency in this planning effort, as provided for under the Council on Environmental Quality regulations at 40 Code of Federal Regulations 1501.6. I believe that both Harney County and the Bureau of Land Management have benefitted from our participation as a Cooperating Agency.

While for the most part we are in agreement with the proposed action, we continue to oppose any restrictions on the private landowners right to access their lands in a reasonable manner. It is our opinion that the Steens Mountain Cooperative Management Act does not authorize restrictions based on “degree of use” and that the private landowners must have reasonable access to their lands.

Since the Andrews Management Unit and the Steens Mountain Cooperative Management and Protection Area are important parts of the economic foundation of Harney County, a balance must be established between public use and maintaining the resource values. We encourage the BLM to place a priority on developing its recreation project plan and transportation plan. Road closures are issues of public concern and should be coordinated with the allotment holders, recreational users, and Harney County. We encourage all public members to participate in these post plan strategies.

Harney County has sought throughout the planning effort ot meet the needs of the local community. We believe that with few exceptions the plan achieves the sought after balance. We appreciate the input we have received from the public as well as the BLM in our efforts.

Respectfully Submitted,

Steven E. Grasty,
Judge, Harney County Court

SEG;sj

ANDREWS MANAGEMENT UNIT/STEENS MOUNTAIN COOPERATIVE MANAGEMENT AND PROTECTION AREA PROPOSED RESOURCE MANAGEMENT PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT

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ACRONYMS

Reader note: *Please refer to the list below for acronyms that may be used in this document.*

ACRONYM	DEFINITION
ACEC	Area of Critical Environmental Concern
AML	Appropriate Management Level
AMP	Allotment Management Plan
AMS	Analysis of the Management Situation
AMU	Andrews Management Unit / The Planning Area outside of the Steens Mountain CMPA
APHIS	Agricultural Plant and Animal Health Inspection Service
AUM	Animal Unit Month
BCB	Back Country Byway
BLM	Bureau of Land Management
BMPs	Best Management Practices
CAA	Clean Air Act
CCD	Census County Divisions
CD	Compact Disk
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMPA	Cooperative Management and Protection Area
CWA	Clean Water Act
DEQ	Oregon Department of Environmental Quality
DEIS	Draft Environmental Impact Statement
DO	District Office
DRC	Desired Range of Conditions
DRMP	Draft Resource Management Plan
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act
ESI	Ecological Site Inventory
FAR	Functional At Risk
FEIS	Final Environmental Impact Statement
FFR	Federal Fenced Range
FLPMA	Federal Land Policy and Management Act
FMP	Fire Management Plan
GIS	Geographic Information System
HMA	Herd Management Area
HUC	Hydrologic Unit Code
ICBEMP	Interior Columbia Basin Ecosystem Management Project
ID	Interdisciplinary
Malheur NWR	Malheur National Wildlife Refuge
MFP	Management Framework Plan
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MRDG	Minimum Requirement Decision Guide
NAAQS	National Ambient Air Quality Standards
NEA	Northwest Economic Associates
NEPA	National Environmental Policy Act
NSO	No surface occupancy
ODA	Oregon Department of Agriculture
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
OHV	Off-highway vehicle
ONDA	Oregon Natural Desert Association
ONHP	Oregon Natural Heritage Program
ORS	Oregon Revised Statute

ORV	Outstandingly Remarkable Value
OWRD	Oregon Water Resources Department
PFC	Proper functioning condition
PILT	Payments In Lieu of Taxes
PL	Public Law
PM	Particulate Matter
PNC	Potential Natural Community
PP&L	Pacific Power and Light
PRIA	Public Rangelands Improvement Act of 1978
PRMP	Proposed Resource Management Plan
R&PP	Recreation & Public Purpose
RA	Resource Area
RAC	Southeast Oregon Resource Advisory Council
RMIS	Recreation Management Information System
RMP	Resource Management Plan
RNA	Research Natural Area
ROD	Record of Decision
ROW	right-of-way
RTR	Redband Trout Reserve
S&Gs	Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington
SBR	subbasin review
SEORMP	Southeastern Oregon Resource Management Plan
SIP	State Implementation Plan
SMAC	Steens Mountain Advisory Council
SRMA	Special Recreation Management Area
SRP	Special Recreation Permit
T&E	Threatened and Endangered
TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy
TNR	Temporary Nonrenewable
TP	Transportation Plan
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VRM	Visual Resource Management
WIS	Wilderness Information Specialist
WJMA	Wildlands Juniper Management Area
WQMP	Water Quality Management Plan
WQRP	Water Quality Restoration Plan
WSA IMP	Interim Management Policy for Lands Under Wilderness Review
WSA	Wilderness Study Area
WSR	Wild and Scenic River
WUI	Wildland urban interface
ybp	years before present

Summary and Readers' Guide

Introduction

The Proposed Resource Management Plan (Proposed RMP)/Final Environmental Impact Statement (FEIS) for the Andrews Management Unit (AMU)/Steens Mountain Cooperative Management and Protection Area (CMPA) addresses options for future management of approximately 1,649,470 acres of public lands (Planning Area) (federal surface and federal mineral estate), 1,221,314 acres of which are in the AMU and 428,156 acres in the CMPA located primarily in Harney County, southeastern Oregon. This area of public land is managed by the Bureau of Land Management (BLM), Burns District Office (Burns DO). The Proposed RMP/FEIS addresses a spectrum of major issues and analyzes five alternatives to resolve these issues. These alternatives represent different combinations of resource allocations proposed for future management of the Planning Area. The RMP also amends the Three Rivers RMP for lands located within the CMPA.

After the 90-day public comment period on the Draft AMU/CMPA RMP (DRMP)/Draft EIS (DEIS) closed, the BLM analyzed all comments and prepared this Proposed RMP/FEIS. Upon review of the Proposed RMP/FEIS, the public will have 30 days to protest decisions believed adverse to their interests. After resolution of any protests, two RMPs/Records of Decision (RODs) (one for the AMU and one for the CMPA) will be issued.

The approved RMPs will replace the existing management framework plans (MFPs) that currently guide management in the Burns DO. However, valid decisions and guidance contained in these previous plans have been brought forward and will be incorporated into the approved plans. In addition, advances in resource management science, changes in laws, regulations, and public views will also be considered. Uses of public land, decisions, and directions will be identified for management of resources including vegetation; special status species; water resources and watershed; fish; wildlife and wildlife habitat; grazing management; wild horses; special designated areas; cultural and paleontological resources; social and economic values; fire management; wilderness; wilderness study areas (WSAs); parcels with wilderness characteristics; wild and scenic rivers (WSRs); areas of critical environmental concern (ACECs); recreation; off-highway vehicles (OHVs); energy and minerals; lands and realty; and transportation. Table S.1 has been prepared as a comparison summary of potential resource effects by alternative and is located at the end of Chapter 2. The reader needs to realize that this is only a summary and is not the complete analysis. The complete analysis can be found in Chapter 4.

In addition to the maps published in this document, a Compact Disk (CD) is available to the public, by request, that includes various additional resource maps that were published in the Analysis of the Management Situation (AMS) or prepared as supplemental information for the Proposed RMP/FEIS. These additional maps are also available on the BLM's website. A complete list of these maps can be found in the Table of Contents. The BLM contact information and website address are included in the Dear Interested Party letter that is included in this Proposed RMP/FEIS.

Significant Changes between Draft and Final

Over 5,000 public comments were received on the DRMP/DEIS. These comments, as well as consultation with the Steens Mountain Advisory Council (SMAC) for the CMPA, cooperating agencies, and discussions internal to BLM, resulted in some changes to the Proposed RMP/FEIS. Many changes are included in the text of the document in various chapters, and involve additional discussions of actions and environmental effects. Summarized public comments on the DRMP/DEIS and BLM responses are located in Appendix T.

In the Proposed RMP/FEIS there is no longer a Management Alternatives Summary Table as it essentially duplicates the text which still appears in Chapter 2. To assist the reader in locating the changes to management actions for the Proposed RMP/FEIS, the following summarized list is provided. The reader should refer to Chapter 2 for the actual changes to the management actions. Significant changes between the DRMP/DEIS and Proposed RMP/FEIS are underlined and are primarily located in the Preferred Alternative. Alternative D, the Preferred Alternative in the DRMP/DEIS is, as amended in this document, now titled Proposed RMP.

Fish and Wildlife Special Status Species:

AMU: Borax Lake ACEC: includes a description of which specific resource management activities would be limited.
CMPA: Redband Trout Reserve (RTR): defines management of the area as for advanced ecological status.
AMU and CMPA: Bighorn Sheep: specifies updated policy for managing domestic sheep and goats in native wild sheep habitats. Clarifies that these standards would be applied to proposed new permits, or proposed conversion of livestock class. Management action also includes efforts to work cooperatively with private landowners to limit domestic sheep and goat, and wild sheep contact.

Recreation:

CMPA: Closes Kiger Gorge, East Rim, and Wildhorse Overlooks parking areas to camping.
CMPA: Incorporates a variety of possible recreation actions and defers analysis and decision until after the RMP is completed and a Comprehensive Recreation Plan is developed for the CMPA.

Transportation:

AMU: Requires the completion of an AMU Transportation Plan (TP) by December 2008.
CMPA: Requires the completion of a CMPA TP by December 2005.
CMPA: Provides for two gates on the Moon Hill Road to control vehicle use when the roads are wet or snowy.
CMPA: Allows permits to be issued for motorized use of the Riddle Brothers Ranch segment of Cold Springs Road.

OHV:

CMPA: Provides for two gates on the Moon Hill Road to control vehicle use when the roads are wet or snowy.

Socioeconomic Section - Transportation:

AMU: Clarifies that some roads may be closed, some maintained, and some new roads may be constructed following completion of the AMU TP.
CMPA: Clarifies that some roads may be closed and some maintained following completion of the CMPA TP.

Cultural:

AMU and CMPA: Defines flexibility for Section 110 (National Historic Preservation Act) inventory based on annual funding.
CMPA: Adds Fish Lake campground as an interpretive display location.

Lands:

AMU and CMPA: Minor changes to land tenure zone map and acreages.
AMU: Identifies lands containing mule deer winter range adjacent to the Malheur National Wildlife Refuge (NWR) for retention in Zone 1. Identifies some limited Zone 3 lands for reclassification to retention Zones 1 and 2.
AMU: Identifies lands near Frenchglen, Fields and Denio as available for conveyance through Recreation and Public Purposes Act, and eliminates discussion of County zone changes.
AMU: Clarifies decision to continue the existing road closure to Buckskin Mountain that was inadvertently left out of the DRMP/DEIS.
AMU and CMPA: Clarifies that acquisition opportunities within or adjacent to special management areas would be considered higher priority than acquisition of nonpublic lands elsewhere in the Planning Area.
AMU: Special Recreation Management Areas (SRMAs) added to the definition of lands qualifying for retention in Zone 1.
CMPA: Riddle Brothers Ranch moved to Zone 1A from Zone 1B.
AMU/CMPA: SRMAs qualify for Right-of-Way (ROW)/Realty Use avoidance areas.

Wilderness (all CMPA):

Clarifies many strategies for Steens Mountain Wilderness Area management.
Group size changed to 12 persons with 18 head of stock.
Length-of-stay limit changed to 14 days.
Recreational stock may graze freely in the No Livestock Grazing Area.
Adds miscellaneous management action for various wilderness activities not specifically covered by other actions.
Alternative C Percentage Change Guidelines are incorporated into the Proposed RMP/FEIS.

Wilderness Study Areas:

AMU/CMPA: Deletes analysis of 40- and 80-acre inholdings previously acquired within the Mahogany Ridge and Bridge Creek WSAs. These parcels were incorporated directly into WSA status at the time of acquisition, under the authority of the Land Tenure Adjustment Plan Amendment for the Andrews and Drewsey MFPs.

Vegetation/Special Status Species:

AMU/CMPA: Adds a management action to address management of special status species plants.

ACECs:

AMU: Borax Lake ACEC: Includes a description of specific resource management activities that would be limited.
AMU: Long Draw ACEC: Clarifies as being closed to leasing and salable minerals, but open to locatable mineral entry.
AMU: Pueblo Foothills and East Fork Trout Creek: same as Long Draw.

Minerals:

AMU: Adds clarification that opening of split estate federal minerals beneath nonfederal surface, when not affected by Stock Raising Homestead rules, would be considered occur on a case-by-case basis, in response to expressed interest in the federal minerals.

Grazing:

AMU/CMPA: Provides a description of allowable utilization levels.
AMU/CMPA: Provides for closure of specific areas to grazing.
AMU/CMPA: Clarifies intent to manage rangeland improvement projects for certain purposes.
AMU/CMPA: Deletes discussion of allotment relinquishment in RMP; defers decisions to site specific cases under authority of BLM grazing regulations.

Other:

The information provided above is intended to be a summary of the management action changes in Chapter 2. Other sections of the text and appendices to the Proposed RMP/FEIS have been modified. Allotment condition and trend and other information have been added in Appendix I. A compiled monitoring program for the Planning Area has been added as Appendix Q. Appendix R contains a general summary of known cultural resources.

A complete Wilderness and WSRs Management Plan is included as Appendix U and is available for comment for 30 days beginning on the date the Proposed RMP/FEIS is issued. A final Wilderness and WSRs Managment Plan will be available at the time of publication of the ROD for the CMPA RMP. A final data status table has been prepared to document the actual data used in support of the decisions made in the RMP and is included as Appendix S.

The appendices new to this Proposed RMP/FEIS (Appendices Q, R, S, T, and U) are noted as complete revisions and have not been marked with underlining. Changes to text in the existing appendices have been underlined for ease in identifying new text.

The following is a brief overview of the document to assist in your review and help you better understand the planning process.

Chapter 1

Chapter 1 identifies the purpose of and need for the RMP (versus an implementation plan), defines the Planning Area, and explains public participation in the planning process. This chapter identifies the planning criteria used as guidelines influencing all aspects of the process. These guidelines are based on law, regulation, and policy. Also included in this chapter is a description of the involvement of state, local, federal and tribal agencies, and governments. The issues identified through public participation and the planning process are listed along with the management considerations for resolving conflicts.

In addition, Chapter 1 explains the relationship of this planning document to the Interior Columbia Basin Ecosystem Management Project (ICBEMP) supplemental EIS. The integrated scientific assessment, the supplemental DEIS, and the proposed ROD from ICBEMP and the Interior Columbia Basin Strategy (Strategy) were considered, and where applicable, incorporated throughout this document. The subbasin review (SBR) process, which was identified by ICBEMP, is also explained in this chapter and in Appendix B.

Chapter 2

Chapter 2 presents the various management strategies for achieving the desired range of conditions (DRC). The RMP identifies a management framework for approximately the next 20 years. However, the long-term vision for accomplishing specific resource objectives may be 50 years or longer and may not be completely achieved during the life of the RMP.

There is also an overview of the alternatives and a description of the theme of each alternative. Five alternatives are identified with different intensities of resource uses and management direction to resolve identified conflicts and to achieve the DRC:

Alternative A – No action; continue current management;
Alternative B – Minimal commodity production;
Alternative C – Resource restoration and protection;
Proposed RMP – Balance between commodity production and resource protection; and
Alternative E – Emphasize commodity production.

Each alternative is a complete land use plan that provides a framework for multiple use management of the full spectrum of resources present in the Planning Area. The resource management goals address the desired future conditions of the various resources; are based on law, regulation, and policy; and project the direction management would follow. Management goals and objectives are constant across all alternatives. Each alternative (except Alternative B) would meet the management goal(s) of the various resources; however, the means for meeting each goal, the rate at which they would be met, and the effects to resources may differ among the alternatives.

The alternatives in this Proposed RMP/FEIS are designed to provide general management guidance in most cases. Specific projects for a given area or resource will be detailed in future activity level plans or site specific proposals developed as part of interdisciplinary project planning or other means. These plans and processes address more precisely how a particular area or resource is to be managed and demonstrate compliance with the approved RMP's management direction. Additional National Environmental Policy Act (NEPA) analysis and documentation would be conducted as needed.

Chapter 3

Chapter 3 provides an overview of the Planning Area and describes the existing situation for each of the resource programs. It describes both the living and nonliving components that may be affected by the proposed actions. Other components of the environment that will not be affected by the proposed actions such as climate and physical characteristics are also described. Current management direction is briefly summarized for each program. Statistics such as acres, numbers, resource condition, and designations, etc., are presented in a number of tables. Applicable findings from the ICBEMP's integrated scientific assessment are also presented for the pertinent resources.

Chapter 4

Chapter 4 analyzes the effects of the management strategies (Chapter 2) on the existing condition (Chapter 3). A summary of this analysis is provided in Table 2.1. There are several general assumptions listed at the beginning of the chapter that apply to all alternatives. Also, there are assumptions at the beginning of some specific resource programs to help guide the reader through the thought process.

Each resource program is analyzed by management goal and objective through each of the alternatives, followed by an overall comparison summary of resource effects across all the alternatives. At the end of the analysis of each resource program is a summary of direct and indirect effects and a discussion of the cumulative effects of all actions across all alternatives. Direct effects on a resource include those which would result from management actions proposed for that

resource. Indirect effects on a resource include those which would result from actions proposed under a different resource.

Chapter 5

Chapter 5 summarizes key events in the consultation and coordination process prior to and during preparation of the Proposed RMP/FEIS. It also lists those agencies, organizations, and individuals who were contacted or who provided input. Also listed are the specialists who prepared this plan, and the supporting technical specialists.

Chapter 6

Chapter 6 contains the glossary and references cited in the document to assist the reader in the review process.

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1 INTRODUCTION

The BLM Burns DO, manages 3,275,694 acres of public lands located primarily in Harney County, Southeastern Oregon (Map 1.1). The Burns District is divided into two resource areas: the Andrews Resource Area (Andrews RA) and the Three Rivers Resource Area (Three Rivers RA). The two RAs are further divided into lands contained within the boundary of the CMPA and those outside the boundary; in the Andrews RA, the latter are titled the AMU.

The RMPs and resulting RODs (one each for the CMPA and AMU but for the purposes of this document will generally be referred to as the RMP) are intended to provide land use planning and management direction at a broad scale and to guide future actions. The regulations for making and modifying land use plan decisions, which comprise an RMP, are found in 43 Code of Federal Regulations (CFR) 1600. Land use plan decisions consist of desired outcomes (goals, standards, and objectives) and the allowable uses (including allocations, levels of use, and restrictions on use) and management actions necessary to achieve those outcomes. RMPs decisions can be distinguished from implementation decisions in that, although the former are themselves final and effective upon adoption, they normally require additional implementation decision steps (such as permit approvals) before activities having on-the-ground effects can be carried out. Implementation decisions generally constitute BLM's final approval for on-the-ground actions to proceed. These types of decisions require site specific planning and NEPA analysis.

1.1 Purpose of and Need for Action

Resource management of the public lands within the Andrews RA is currently directed by the Andrews MFP, which was completed in 1982 (United States Department of the Interior [USDI] 1982a). As used in this document, public lands are defined as "those lands administered by the Secretary of the Interior through the BLM." As a result of recent legislation, changes in BLM management policies and regulations, and demands on resources, the Andrews MFP no longer provides the adequate and comprehensive planning direction needed for resource management within the Andrews RA. The Steens Mountain Cooperative Management and Protection Act of 2000 (P.L. 106-399) (Steens Act) (Appendix A) established the CMPA. The CMPA encompasses 496,136 acres of public, private, state, and United States Fish and Wildlife Service (USFWS) lands within the Andrews RA and a small portion (53,343 acres) within the Three Rivers RA. The remaining portion of the Andrews RA, outside the CMPA, is identified as the AMU, encompassing 1,681,675 acres of public, private, state, and USFWS lands. Special areas created within the CMPA include the Wildlands Juniper Management Area (WJMA), the Steens Mountain Wilderness (which contains a No Livestock Grazing Area), new WSR designations, and the RTR. In addition, the Steens Act authorized five specific land exchanges, created a citizen's advisory council (SMAC), authorized establishment of a science advisory committee, and established a Mineral Withdrawal Area. Congress recognized that the CMPA provides for exceptional cooperative management opportunities and offers outstanding natural, cultural, scenic, wilderness, and recreational resources. To demonstrate that these resources are appropriately managed, the Steens Act mandated the BLM Burns DO prepare a management plan for the CMPA by October 30, 2004.

In 1995, preparation of the Southeastern Oregon Resource Management Plan (SEORMP) was initiated by the Vale and Burns Districts of the BLM. The SEORMP initially included the Andrews RA. However, as a result of the Steens Act, the Burns DO determined it appropriate to separate the Andrews RA from the SEORMP and develop a separate plan in order to address changes in land management resulting from mandates of the Steens Act. The RMP will provide the BLM with a comprehensive framework for managing public lands within the Andrews RA and the CMPA (Map 1.1.1). Completion of the RMP will meet the requirements of the Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1701 *et seq.*), which mandates public land be managed for multiple use and sustained yield under an approved RMP. In addition, the Steens Act requires that "within 4 years after the date of the enactment of this Act, the Secretary shall develop a comprehensive plan for the long-range protection and management of the Federal lands included in the Cooperative Management and Protection Area, including the Wilderness Area" (111(b)). The Steens Act states that the "...purpose of the Cooperative Management and Protection Area is to conserve, protect and manage the long-term ecological integrity of Steens Mountain for future and present generations."A primary goal of this comprehensive plan is to develop management practices that promote long-term sustainability of a healthy and productive landscape and achieve the purpose of the CMPA. An RMP contains a set of comprehensive long-range decisions concerning the use and management of resources administered by the BLM. In general, an RMP does two things: (1) provides an overview of goals, objectives, and needs associated with public lands management and (2) resolves multiple use conflicts or issues that drive the preparation of the RMP. In addition, an EIS must be prepared to analyze the alternatives proposed in the RMP as required by the NEPA.

This Proposed RMP/FEIS also considers and, where appropriate, incorporates the science and findings derived from the assessments of the ICBEMP and the Interior Columbia Basin EIS and Proposed Decision (United States Department of Agriculture [USDA]/USDI 2000a). No ROD was finalized for the Interior Columbia Basin EIS and Proposed Decision; however, a Memorandum of Understanding (MOU) was entered into by several agencies, including the BLM, to

implement the ICBMP Strategy (USDA/USDI 2003). The Strategy provides guidance for incorporating the science data and resource information developed by the ICBEMP into land use planning efforts. These findings are important in defining the complexity and scope of the issues being addressed in this Proposed RMP/EIS.

1.2 Planning Area

The Planning Area encompasses the entire Andrews RA and that portion of the Three Rivers RA within the CMPA. The proposed plans cover a total of 1,649,470 acres of public land, with 1,221,314 acres in the AMU and 428,156 acres in the CMPA (these numbers do not include private, state, or USFWS lands). See Chapter 3 for a more detailed description of the Planning Area.

1.3 Existing Management Plans

This section outlines the current management direction, which includes the Andrews MFP and the Steens Act. Current management direction also includes the following associated NEPA documents applicable to the Planning Area: Animal Damage Control Final EIS, three volumes (USDA 1994); Steens Mountain CMPA Interim Management Policy Draft (USDI 2001a) (IMP); Decision Record and Finding of No Significant Impact for the Projects for Implementation of the Steens Mountain Cooperative Management and Protection Act of 2000 (Steens Act) of 2000, EA-OR-027-01-27 (USDI 2001b); Three Rivers RMP, ROD, and Rangeland Program Summary (USDI 1992a); Donner und Blitzen National WSR Management Plan Environmental Assessment (EA) (USDI 1993a); National WSR Donner und Blitzen Management Plan EA (USDI 1992b); Noxious Weed Management Project EA, EA OR-020-98-05 (USDI 1998a); Andrews Grazing Management Program Environmental Impact Statement (EIS) (USDI 1982b); and the Land Tenure Adjustment Plan Amendment for the Andrews and Drewsey MFPs (USDI 1988a).

The AMU and CMPA RMPs are necessary not only to revise the Andrews MFP and to address management of the CMPA, but the RODs for the RMPs will also amend the Three Rivers RMP to address management of the CMPA, the mineral withdrawal area, livestock grazing, and wild horse and burro Herd Management Areas (HMAs). The SEORMP incorporates management of the mineral withdrawal area for the Vale District BLM.

Several activity level plans have also been completed in recent years and include the following: Steens Mountain Final Recreation Area Management Plan (USDI 1985); Andrews Rangeland Program Summary Update (USDI 1986a); Andrews Plan Amendment for Recreation Access Surrounding the Steens Mountain Loop Road (USDI 1993b); The Riddle Brothers Ranch Historic District Cultural Resources Management Plan (Crespin 1990); Kiger Mustang ACEC Management Plan (USDI 1996a); Riddle Mountain and Kiger Wild Horse HMA Plan (USDI 1996b); Recovery Plan for the Pacific Bald Eagle (USDI 1986b); The Pacific Coast American Peregrine Falcon Recovery Plan (USDI 1982); Decision Record and Finding of No Significant Impact for Steens Mountain Trail Maintenance (USDI 2001c); Pueblo-Lone Mountain Management Plan EA (USDI 1995a); Burns District EA for Commercial Day-Use Activities OR-020-EA-99-24 (USDI 1999); The Riddle Brothers Ranch Historic District Cultural RMP, EA (USDI 1994a); The Trout Creek Mountains Allotment Management Plan (AMP); and Recovery Plan for the Borax Lake Chub, *Gila boraxobius* (USDI 1997a).

1.4 Planning Process

An RMP is a land use plan as prescribed by the FLPMA (Sections 201 and 202) and establishes, in a written document, the following:

- Land areas for limited, restricted, or exclusive resource uses or for transfer from BLM administration;
- Allowable resource uses and related levels of production or use to be maintained;
- Resource condition, goals and objectives to be reached;
- Program constraints and general management practices;
- Identification of specific required activity plans;
- Support actions required to achieve the above;
- General implementation schedule or sequences; and
- Intervals and standards for monitoring effectiveness of the plan.

The underlying goal of an RMP is to provide efficient on-the-ground management of public lands and associated resources over a period of time, usually up to 20 years. The procedure for preparing an RMP involves eleven interrelated steps as shown in Table 1.1.1.

Table 1.1.1: Steps in the BLM Planning Process

Planning Step	Definition/Purpose
1) Identification of issues	Orients the planning process to the significant resource management problems and land use conflicts in the area covered by the plan.
2) Development of planning criteria	The manager and interdisciplinary team (ID Team) develop standards or rules to focus the planning process on the issues and management concerns.
3) Inventory and data collection	Baseline information is collected on an ongoing basis in support of resource management. Information about all ecosystem components, including human uses, is necessary to prepare a plan that meets requirements and is legally defensible.
4) Analysis of the management situation	The study and assessment of public land resources data for the area covered by the plan; completes the information base for formulating reasonable alternatives.
5) Formulation of alternatives	The development, analysis, and documentation of a reasonable range of multiple use management options that resolves conflicts and issues and provides a basis for future management.
6) Estimation of the effects of the alternatives	The consequences of the resource management alternatives are analyzed and documented.
7) Selection of preferred alternative	Based on a comparison of the estimated effects and tradeoffs associated with the alternatives, a preferred alternative is identified in the DRMP/DEIS.
8) Public review and comment on DRMP/DEIS	After selection of preferred alternative, the DRMP/DEIS is distributed for 90-day public review and comment.
9) Selection of the proposed resource management plan	Selecting the proposed plan and preparing the Proposed RMP/FEIS based on evaluation of public comments of the DRMP/DEIS.
10) Public protest period on published Proposed RMP/FEIS	Publication of the Proposed RMP/FEIS initiates a 30-day public protest period. Following resolution of any protests, the Final RMPs are approved by issuance of the RODs.
11) Monitoring and evaluation	Indicates the effectiveness of RMP decisions and related management prescriptions. May continue through the life of the plan. Results are used to determine whether the plan needs amendments or revisions.

1.4.1 Public Involvement in the Planning Process

Public involvement is an integral part of the BLM's resource management planning process. Public involvement activities for this RMP/EIS have included a mass mailing of a scoping brochure, holding public meetings, meeting with local government and tribal government officials, conducting a SBR (Appendix B), mailing the AMS Summary (USDI 2002), mailing a newsletter as followup to the publication of the AMS (USDI 2002), and other correspondence. From October 2001 through January 2002, the BLM conducted a SBR. This review resulted in the identification of a number of issues and management concerns to be addressed in the RMP.

The BLM began its public involvement in February 2002 with the mailing of a scoping brochure that briefly described the RMP/EIS process, outlined the planning schedule, and requested comments on the first major planning step, which constitutes identification of issues. The brochure was sent to approximately 1,220 individuals, organizations, and agencies. Additional copies of the scoping brochure were made available at the four scoping meetings. The BLM invited the public to identify issues or concerns they believed should be addressed during the RMP/EIS process. A Notice of Intent to prepare the DRMP/EIS was published in the *Federal Register* at the same time. The *Federal Register* notice also announced the dates and locations of the four public meetings that would be held. A news release with the same

information and a request for publication or announcement was mailed to 19 media groups including the Burns Times Herald, The Bulletin, The Oregonian, and KZZR Radio. BLM representatives attended meetings with Harney County to inform them of the DRMP/DEIS and to encourage them to make comments, request information, and generally be involved in the process. The same information was distributed to the Burns Paiute Tribal Government. Other meetings with the tribe were also conducted at key steps in the planning process. The Southeast Oregon Resource Advisory Council (RAC), the SMAC, cooperating agencies, and other participating partners were involved throughout the process.

Members of the public, local and tribal governments, other federal agencies, and state agencies were mailed copies of the AMS Summary and were asked to comment, particularly on the planning criteria and DRMP/DEIS alternatives. Approximately 2,313 comment letters were received. A followup newsletter outlining the primary comments was then mailed to 257 individuals in July 2002. An additional 143 copies of the AMS Summary were sent to interested individuals and organizations by request. The full version of the AMS was published and made available to the public in November 2002.

On October 3, 2003, the Environmental Protection Agency's (EPA's) Notice of Availability of the DRMP/DEIS was published in the *Federal Register* which initiated a 90-day comment period. A news release was sent to media groups including the Burns Times Herald, The Bulletin, The Oregonian, and KZZR Radio announcing availability of the DRMP/DEIS. Approximately 307 hard copies and 80 compact disc copies of the DRMP/DEIS were sent to individuals, agencies, and organizations. An RMP newsletter was also distributed to about 538 names on the mailing list announcing the availability of the DRMP/DEIS as well as announcing the public comment period and meeting dates. The DRMP/DEIS was also made available on the Burns DO website. During the 90-day public comment period, public meetings were held in Portland (October 27, 2003), Bend (October 28, 2003), Burns (October 29, 2003, and Frenchglen (October 30, 2003), Oregon, with a total of 103 people attending. The BLM received approximately 5,563 public comment letters on the DRMP/DEIS, a majority of which were form communications. Approximately 923 letters were individualized letters and 84 letters contained substantive comments, which are addressed in Volume 2 of the Proposed RMP. Comments made during the SEORMP process that were specific to the Andrews RA were also considered. The comment period ended January 5, 2004. The BLM continued to involve the Resource Advisory Council (RAC), the SMAC, and cooperating agencies throughout the process. See Table 5.1.1 in Chapter 5 for a summary of the key public involvement events.

1.4.2 Planning Issues

As a result of internal scoping for the development of the preliminary plan and the AMS, the following 17 issues were identified by BLM staff to be addressed in the RMP/EIS:

1) BLM management of resource uses to improve and maintain the integrity of upland ecological communities;

- How will livestock grazing be managed to sustain resource values while maintaining stable watersheds and the continued production of forage?
- What areas previously ungrazed could be grazed and under what circumstances? Are there areas where, or situations when, grazing should be excluded?
- What practices will be authorized and implemented to provide wildlife habitat and forage for livestock while maintaining other uses and values of public land resources?
- Under what conditions is grazing compatible with management of areas such as WSAs, WSRs, and ACECs?
- What are the visual considerations related to upland conditions, and how will the BLM's Visual Resource Management (VRM) play a role?
- What indicators will be used to identify levels of wild horse use compatible with sustaining a thriving, natural, ecological balance?
- What practices will the BLM implement to manage wild horses consistent with the legislative mandate that all management activities be at minimum feasible level?
- What practices will be authorized and implemented to provide adequate habitat and forage for wildlife while maintaining other resource uses and values?
- What grazing practices are necessary to protect sensitive resource values such as riparian areas and special status species?
- What new and existing rangeland projects, including seedings, are needed to improve rangeland resource values?
- What rehabilitation practices will be implemented following rangeland project construction and maintenance that disturb established vegetation cover?

- What criteria should be considered for fire rehabilitation, for restoration of wildlife habitat, and to determine whether or not native or introduced species should be seeded to stabilize watersheds?
- How should the BLM prioritize implementation of management practices to maintain desired conditions and improve undesirable conditions where feasible?
- What criteria should be established to determine conditions and timetables for improvements?
- What resource uses and management practices will be employed in geographic areas with lower management priority?
- Is the current strategy of full wildland fire suppression compatible with upland management objectives?
- How, and to what extent, should fire be used to manage western juniper and aspen woodlands?
- Can cottonwood stands be restored along Donner und Blitzen WSR and the east side of Steens Mountain?
- Can juniper treatments in corridors be accomplished?

2) BLM management of resource uses to improve or maintain the integrity of riparian ecological communities;

- How will riparian vegetation communities be managed to improve or maintain ecological status, species diversity, bank stability, water quality, and the timing of watershed discharge while providing for resource uses such as grazing, recreation, water development, mineral exploration and development, and woodland products harvest?
- What areas previously excluded from grazing could be grazed and under what circumstances? Are there areas or situations when grazing should be excluded?
- What are the visual considerations relating to riparian conditions, and how will the BLM's VRM play a role?
- How will riparian systems be managed to improve or maintain habitat quality for fish, wildlife, plants, and invertebrates?
- How will riparian and wetland areas be managed to incorporate State of Oregon water quality standards and approved management plans addressing water quality concerns?
- Is the current strategy of full wildland fire suppression compatible with riparian management objectives?
- How will management actions in upland communities be handled to be compatible with the needs of riparian communities?
- How should management actions with potential to affect riparian communities be identified and prioritized?
- What timeframes are acceptable to achieve riparian management objectives?
- When does the establishment of juniper threaten other resource values, and what management actions can be used to control the invasion?
- Is collection of baseline riparian information and proper functioning condition (PFC) on acquired and isolated stream segments necessary?
- Should the riparian habitat inventory be redone?

3) BLM maintenance or improvement of woodland communities and how woodlands will be managed to maintain or improve rangeland and wildlife habitat;

- What should be done to preserve and manage the 20.1 acres of grand fir forested areas on public land on Steens Mountain?
- Are there juniper woodland areas that should be preserved?
- What types of woodland products should be harvested?
- What are the potential effects of woodland management on wildlife, watersheds, soils, vegetation, recreation, aesthetics, and other resources?
- What kind of woodland management is compatible with management of Wilderness, ACECs, WSRs, and other designated areas?

4) BLM provisions for wildlife habitat while considering other resource uses;

- To what extent will livestock management and brush control be conducted to meet the habitat requirements of wildlife?
- Which areas, if any, are appropriate for reintroduction of wildlife, and what species could be reintroduced?
- What management practices avoid conflicts between wildlife and livestock for vegetation, especially between bighorn sheep and domestic sheep?
- What are the long-term strategies for managing wildlife?
- To what extent will the BLM adopt Oregon Department of Fish and Wildlife (ODFW) management objectives for game and nongame species of wildlife?

- What management practices best address areas of biodiversity, the needs of species at the limits of their range, and species assemblages?

5) Public land management contributions to the preservation of and increase in healthy, sustainable populations of species now considered in special status. Land management for successful prevention of habitat destruction, which would lead to listing of additional species;

- To what extent will livestock management and brush control be conducted to meet the habitat requirements of special status species?
- Which areas, if any, are appropriate for reintroduction of special status species?
- What are the long-term strategies for managing habitat for special status species?
- To what extent will the BLM adopt ODFW management objectives for special status species?
- What management practices best address areas of biodiversity, the needs of special status species at the limits of their range, and species assemblages?

6) BLM management of energy and mineral resources on public land;

- Are there areas where some types of energy and mineral development should be restricted or prohibited?
- Are there areas where mineral development should be recognized as being the highest and best use?
- How will energy and mineral development be managed to minimize resource conflicts?
- What are the visual considerations relating to management of energy and mineral resources, and how will the BLM's VRM play a role?
- How should recreational rock collecting be managed?
- What reclamation practices will be implemented following mineral development activities?
- Which remediation methods should be used for each identified abandoned mine site?
- What leasing stipulations will be applied to the area outside of the mineral withdrawal?

7) Special area management within the CMPA and in the AMU;

- Should existing ACECs be retained under their current designations and management prescriptions?
- Are there other areas that warrant special designations to protect unique or special values?
- Would designating new special areas or eliminating existing special areas affect other resource values or management?
- How will effects from nonconforming but acceptable uses and administrative needs in the Steens Mountain Wilderness be managed in order to meet objectives but also preserve wilderness characteristics?
- How will wilderness values be protected against the effects of unauthorized uses such as OHV use and other mechanized or motorized transport?
- What management actions are needed to protect and preserve wilderness values while offering opportunities for quality recreational experiences?
- Where and under what conditions will access be permitted to provide reasonable use and enjoyment of private land within wilderness?
- How will WSRs be managed as they relate to wilderness or other special areas?
- How will the Historic District be managed with the continuing interest and visitation from the public?
- What preventive measures will need to be in place to successfully manage the No Livestock Grazing Area?
- How will the removal of livestock from the No Livestock Grazing Area affect natural ecological processes?
- What management actions will be introduced to control the spread of western juniper and rejuvenate depleted aspen stands in the WJMA?
- How will the RTR be managed to protect the habitat for the fish and provide for research and education opportunities?
- How will land acquired subsequent to the Oregon Wilderness Inventory/EIS, and determined to contain wilderness characteristics, be managed?

8) BLM management of wildland fire, fuels, and prescribed fire to meet and be consistent with resource objectives, while protecting life and property. BLM and private land owners working together to manage wildland fires;

- While the BLM continues to protect life, property, and important resources from fire, are there areas where Appropriate Management Response strategies should be implemented? If so, where and under what conditions would these strategies be applied?

- Which areas are appropriate for using prescribed/wildland fire as a management tool? How would this tool be used?
- Which areas may be subject to constraints (e.g., Oregon Department of Environmental Quality (DEQ) air quality standards) that could limit the use of prescribed fire?
- Which areas should continue to have full suppression to protect important values?
- What rehabilitation practices would be implemented following fire?

9) BLM management of recreation opportunities for both developed and dispersed recreation uses while meeting other resource objectives;

- What types and levels of recreation should the Planning Area provide?
- How, when, and to what extent should the BLM improve recreation opportunities?
- What conflicts with resource values or other uses would restrict recreation opportunities?
- How should the BLM address Special Recreation Permit (SRPs) and any needed allocations?
- Would changes in existing OHV designations affect recreation opportunities?
- To what extent should the BLM develop facilities (campgrounds, trails, etc.) and generally improve recreation access opportunities to meet public demand, to provide for public health and safety, and to direct use away from areas of conflict?
- What role, if any, should the BLM serve in encouraging tourism?
- How should the BLM provide for public awareness of recreation resources and opportunities?

10) BLM administration of land status and values to improve management efficiency and cooperation with private land owners;

- Should some BLM administered land in the Planning Area be exchanged for other land with high public value if the exchange is consistent with the land tenure objectives of the BLM? If so, which land should be exchanged?
- What effect does the Oregon Division of State Land's "Asset Management Strategy" have on management of public land?
- Should some federal agency withdrawals be considered for revocation?
- What land should be returned to BLM administration?
- Should state or other nonfederal mineral estates under public surface ownership be acquired through mineral estate exchanges?
- Where should the BLM consider exchanging BLM administered land for other land with higher public values or consider selling isolated or difficult-to-manage land? Should the BLM consider selling land for public purposes and community expansion?
- What areas within the Planning Area should be identified as unsuitable for ROW routes for major utilities and roads?
- What areas within the Planning Area should be identified as open for ROWs or other land use authorizations?
- What mitigation measures would be appropriate for land that is suitable for ROWs routes?
- Which land in the Planning Area should have current withdrawals or classifications revoked, continued or modified? Which land in the Planning Area not currently withdrawn should be withdrawn in order to protect Planning Area resources?
- Where should utility corridors, avoidance, and exclusion areas be designated?
- Is there land within the Planning Area that should be identified for retention, acquisition, sale, exchange, or other disposal in order to address management objectives and issues?
- What criteria should be applied when considering acquisition from willing sellers of nonfederal land to be added to the Planning Area?
- Are there public lands more suitable for administration by other federal, state, or local agencies?

11) Management of wild horses in the HMAs for maintenance of a sustainable, viable, healthy population for existence in thriving, natural, ecological balance with their habitat and other multiple uses of the area;

- How do goals and objectives of the CMPA affect the management of HMAs and wild horse populations?
- Should the existing appropriate management levels (AMLs) for HMAs inside the CMPA boundary be changed considering the following:
    - reduced acreage within the HMAs,
    - effects of existing and potential fencing (inside the HMA) to implement the Act's No Livestock Grazing Area,

- potential effects of fence removal within the HMAs,
- potential effects of fence additions in the HMA and outside of the No Livestock Grazing Area, or
- potential effects of less water being available to horses in the area west of the No Livestock Grazing Area?

- Should the Alvord-Tule Springs and Coyote Lakes HMAs be combined and the herds managed as one population?
- Are past decisions and current management practices still valid regarding HMAs and Herd Areas within the Planning Area?

12) Management of significant cultural sites and localities for protection and preservation. Use of interpretation as an education tool to increase the public's awareness and appreciation of the Planning Area's cultural resources. Gaining the scientific information to form the basis of this interpretation. Consideration and protection of American Indian interests, traditional practice sites, landforms and resources;

- How can cultural and paleontology inventories (beyond project-specific clearances) be focused primarily on areas most likely to contain significant intact properties most susceptible to effects such as erosion, livestock trampling, OHV use, artifact looting, and concentrated recreation use?
- How can sites and localities be evaluated for significance and managed as such, given timeframes and constraints imposed by the needs of other resource management?
- Can all data pertaining to sites and localities continue to be successfully tracked in an automated data base?
- Can cost-share agreements with universities, research teams, undergraduate and graduate students, and the tribes continue to be implemented to gain scientific and cultural information that will form the basis for interpretation?
- Will resources, both internal and external, be available for BLM cultural personnel to gain the training and experience required to make oral and written interpretive presentations as well as to prepare design and construction of interpretative panels and facilities?
- Will active consultation with Indian tribes be ongoing and continue to establish baseline data for traditional religious sites and use areas?
- Will a Planning Area tribal use plan be developed by the BLM with cooperation of the various tribes, and would it increase coordination with tribes?

13) Controlling and eradicating noxious weeds;

- Should the Burns District's Noxious Weed Management Program EA (EA OR-020-98-05) continue to be implemented in its present form or should it be evaluated and modified if necessary?
- How will management of noxious weeds in special areas (including wilderness) be successfully conducted within the restraints required by the guidelines and requirements of those areas?
- Can data in the Burns District weed data base be successfully broken out, summarized, and utilized specific to the Planning Area?
- Can the BLM effectively increase cooperative work with other agencies to monitor locations and spread of weeds? If so, how can this be accomplished?

14) Management of OHV use in the Planning Area;

- What criteria will be used to determine whether current and future OHV use is compatible with OHV designations in the existing BLM OHV strategy?
- What criteria will be used to determine whether OHV use is causing "considerable adverse effects" to Planning Area resources?
- What changes should occur to current OHV designations if determined to be incompatible with the current BLM OHV Strategy or Planning Area objectives?

15) BLM management of resource uses to improve unacceptable aquatic habitat and water quality conditions (such as stream reaches listed as Water Quality Limited (303(d) by the DEQ or maintain aquatic habitat and water quality that are currently in acceptable conditions;

- Do water developments/alternative water developments (reservoirs, springs) need to have application made to the state for water rights? (For smaller water developments, the lag time will be approximately seven months to gain certificate.)

- Will workload and water quality monitoring objectives need to be determined under new management priorities? As the upper Donner und Blitzen drainage area is under new management strategies, should the BLM take steps to get the tributaries and main stream delisted from 303(d), or should the state focus on these areas?
- To what extent will livestock management and brush control be conducted to meet fisheries habitat requirements?
- What management practices for range and woodlands accommodate fisheries habitat requirements?
- Which areas, if any, are appropriate for reintroduction of native fish species?
- What are the long-term strategies for managing fisheries?
- To what extent will the BLM adopt ODFW management objectives for fisheries?
- What management practices best address areas of biodiversity, the needs of species at the limits of their range, and species assemblages?
- How can grazing management techniques improve water quality?

16) BLM management of transportation issues in the Planning Area;

- What roads and trails are needed for administrative use and/or public access?
- Where are easements or other use agreements needed to secure future access?
- Which roads and trails should be open or closed to motorized vehicles or limited to nonmotorized, nonmechanical traffic, and where?
- Which roads or trails should be seasonally closed for protection and/or improvement of resources or for public safety, and where?
- To what standards should roads and trails be maintained?
- Can roads or trails that no longer serve management purposes be abandoned and/or reclaimed?
- Should new roads or trails be considered to provide access to important public resources, prevent environmental degradation, or to improve transportation?
- What existing roads are needed to provide reasonable access to private land or areas involving other private rights or interests?
- What areas may need new roads to provide future private access?

17) Changes in current resource uses and management practices affecting the economic and social status of rural communities in the Planning Area;

- How can public land management contribute to the economic stability of small rural communities in the Planning Area?
- How would changing land use and tourism affect traditional rural life styles?
- How would land tenure adjustments affect the economic stability of small rural communities in the Planning Area?
- How, and to what extent, will the creation of the Steens Mountain specially designated areas affect communities and residents?

As stated in the previous section, public scoping was conducted and resulted in identification of additional issues. The BLM received 469 different scoping letters and 1,844 copies of various form communications. A total of 3,601 comments were identified. The comments were grouped into the following 23 categories: Alternative Choices; Cultural; Development Issues; Fire; Fish/Wildlife/Wild Horses; Geology/Mining/Energy; Lakes/Springs; Lands; Livestock Grazing; Noxious Weeds; OHVs/Snowmobiles; Planning and Process Issues; Recreation; Roads/Access; ACECs; Socioeconomics; SRPs; Vegetative Ecosystems; Water Quality/Water Quantity; Wilderness/WSAs; WSRs; Soils; and Other. Less than two percent of the comments (Other) listed in the table were considered beyond the scope of this planning process. A bulleted summary of the comments listed by category is included as Appendix C. The comments categorized as Other are not listed in Appendix C and are not further addressed in this Proposed RMP/FEIS.

During the 90-day public comment period on the DRMP/DEIS, which ended January 5, 2004, the BLM received approximately 5,563 public comment letters a majority of which were form communications. Approximately 923 were individualized letters. Eighty four letters contained substantive comments which are addressed in Volume 2 of the Proposed RMP/FEIS Comments made during the SEORMP process that were specific to the Andrews RA were also considered. The comments were grouped into the following categories: Alternative Choices; Cultural; Development Issues (commercial, recreation, signs, trails, campgrounds, and toilets); Fire; Fish/Wildlife/Wild Horses; Geology/Mining/Energy; Lands (private, exchanges and easements); Livestock Grazing; OHV/Snowmobiles; Recreation (hiking, birdwatching, camping, horseback riding, fishing and hunting); Roads/Access; Socioeconomics; Special

Recreation (SRPs, outfitters, and the running camp); Vegetative Ecosystems/Riparian Areas and Streams; Wilderness/WSAs; and WSRs.

1.4.3 Issues Eliminated from Detailed Study

A number of issues were determined to be beyond the scope of the RMP. For example, issues related to private and state lands are not analyzed in the Proposed RMP/FEIS because the RMP prescribes management only for BLM administered land. Issues related to block grants for communities/counties/states, potential changes in federal law (e.g., laws relating to energy and mineral development and grazing), and release of WSAs are outside of the scope of the RMP because they are based on Congressional actions. Abandoned mine lands reclamation will not be analyzed in this document but will be dealt with on a case-by-case basis through individual NEPA analyses. Hazardous materials issues will not be discussed in this document, as they involve public health and safety; acting on hazardous materials situations is not discretionary. The issue of grazing permit relinquishment will not be analyzed in this document but be determined on a case-by-case basis under grazing regulation authority. Also, Environmental Justice considerations are not discretionary and will not be analyzed in this document.

The BLM identified and reviewed the findings from the ICBEMP Scientific Assessment (USDI/USDA 1999) relevant to issue identification across the Interior Columbia Basin. The findings that applied to the SBR area are discussed in Appendix B of this document. Those findings determined not to be applicable to BLM administered land in the Planning Area have been eliminated from further analysis.

1.4.4 Planning Criteria

BLM planning regulations (43 CFR 1610) require preparation of planning criteria for all RMPs. Planning criteria are the constraints or ground rules guiding and directing the development of RMPs. The criteria determine the planning team and the public approach for the development of alternatives and ultimately the selection of a Preferred Alternative. Criteria assist with tailoring the RMP to the identified issues and in avoiding unnecessary data collection and analyses. Planning criteria are based on analyses of information pertinent to the Planning Area, professional judgment, standards prescribed by applicable laws, regulations, and agency guidance, and are the result of consultation and coordination with the public, other federal, state, and local agencies, the Burns Paiute Tribe and other American Indian tribes.

Planning criteria help to accomplish the following:

- Streamline the RMP's preparation and focus;
- Establish standards, analytical techniques, and measures to be used in the process;
- Guide development of the RMP;
- Guide and direct issue resolution; and
- Identify factors and data to consider in making decisions.

Principles of ecosystem management, as well as a continuing commitment to multiple use and sustained yield, will also guide land use decisions in the Planning Area. The commitment to multiple use would not mean that all land will be open for all uses. Some uses may be excluded on some lands to protect specific resource values or uses. Any such exclusion, however, would be based on laws or regulations or be determined through the planning process and subject to public involvement. Appendix D contains a detailed description of the planning criteria and legal authorities used in the development of this Proposed RMP/FEIS.

This Proposed RMP/FEIS has been prepared using the best available information. Limited inventories were conducted to gather additional data for some resources.

1.5 Relationship to Federal Agency Plans

The BLM and other federal agencies have developed a number of land use plans or RMPs that relate to or otherwise govern how management is currently implemented within the AMU or CMPA. The BLM is responsible for determining whether or not the Proposed RMP is in conformance with these plans. The following federal plans have been identified as applicable to the Planning Area and, unless otherwise noted, are believed to be in conformance with the Proposed RMP. Where appropriate, the management direction and previous management decisions set forth by these documents are used to tier analyses performed in this plan, or are incorporated by reference and therefore are not repeated in detail within this document. Consequently, pertinent decisions already established by these documents are not being revisited

here, but are mentioned to give the reader a broad perspective of all management direction pertaining to the Planning Area.

BLM program documents or Interagency plan/NEPA documents and decisions applicable to the Planning Area include the following:

- Visual Resource Management Program (USDI 1980);
- 1613 - Areas of Critical Environmental Concern Resource Management Planning Guidance (USDI 1988b);
- Oregon Wilderness Final Environmental Impact Statement (USDI 1989a);
- Vegetation Treatment on BLM Lands in Thirteen Western States Final Environmental Impact Statement (USDI 1991a);
- Federal Land Policy and Management Act of 1976, as amended;
- Land Use Planning Handbook H-1601-1 Handbook (USDI Updated 2001d);
- National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands (USDI 2001e);
- Environmental Impact Statement, Volume III Appendices for all WSAs beginning with OR-2 plus OR-3-114 (USDI 1989b);
- National Environmental Policy Act Handbook H-1790-1 (USDI 1988c);
- Wilderness Management (USDI 2001f);
- Wilderness Management: Final Rule (USDI 2001g);
- Oregon Wilderness Environmental Impact Statement, Volume I-Statewide (USDI 1989c);
- Upper Columbia River Basin Draft Environmental Impact Statement, Volume 1 (USDI 1997b);
- Proposed Southeast Oregon Resource Management Plan and Final Environmental Impact Statement, Volume 1 of 3 - Text (USDI 2000a);
- Rangeland Reform '94, Draft Environmental Impact Statement Executive Summary (USDI 1994b);
- Interior Columbia Basin Final Environmental Impact Statement (USDA/USDI 2000b);
- House Report 101-405 (Arizona Desert Wilderness Act of 1990);
- House Report 101-405 Appendix A, Grazing Guidelines (1990);
- The National Environmental Policy Act of 1969, as amended;
- Oregon Wilderness Final Environmental Impact Statement (USDI 1989a);
- H-8550-1: Interim Management Policy for lands under Wilderness Review (WSA IMP) (USDI 1995b);
- Wildland and Prescribed Fire Management Policy (National Park Service et al. 1998);
- Endangered and Threatened Wildlife and Plants: Animal Candidate Review for Listing as Endangered or Threatened Species, Proposed Rules (USDI 1991b); and
- Greater Sage-Grouse and Sagebrush-Steppe Ecosystems Management Guidelines (USDI et al. 2000b).

1.6 Relationship to State and Local Government Plans

The Department of Land Conservation and Development's "Oregon's Statewide Planning Goals" guides land use planning within the state and requires local governments to develop their own comprehensive plans, which implement the state's goals on the local level (Department of Land Conservation Development 1995) (Appendix E). Also shown in Appendix E are the Division of State Lands asset management prescriptions for state lands.

The Governor and various state agencies will be given an opportunity to review the Proposed RMP/FEIS and comment on its consistency with their goals, policies, and plans.

The Proposed RMP is consistent with the Oregon Statewide Comprehensive Outdoor Recreation Plan, which was last updated in part by the Oregon Outdoor Recreation Plan: 1994-1999 (Oregon Parks and Recreation Department 1994). The Proposed RMP is also consistent with the Southeast Oregon Recreation Plan for Harney, Lake and Malheur Counties (Oregon Parks and Recreation Department 2000); the Oregon Wildlife Diversity Plan, Second Edition (Puchy and Marshall 1993); Noxious Weed Policy and Classification System (Oregon Department of Agriculture [OSA] 1997); Oregon's Bighorn Sheep Management Plan (ODFW 1992-1997); Oregon's Elk Management Plan (ODFW 1992); Mule Deer Plan (ODFW 1990); Oregon Cougar Management Plan Public Review Draft (ODFW 1993); Catlow Redband Trout and Catlow Tui Chub Conservation Agreement and Strategy (ODFW 1997); Oregon Natural Heritage Plan (Oregon Natural Heritage Advisory Council 1998); and the Oregon Outdoor Recreation Plan 2003-2007 (Oregon Parks and Recreation Department Draft 2002).

1.6.1 Harney County Plan

Harney County has an existing land use plan developed in response to the State of Oregon's requirements. The Harney County Commissioners are being provided with an opportunity to review the Proposed RMP/FEIS and comment on its consistency with their approved plans and policies.

1.6.2 Malheur County Plan

Malheur County has an existing land use plan developed in response to the State of Oregon's requirements. This Proposed RMP will be consistent with the Malheur plan for those sections of the Planning Area in Malheur County.

1.6.3 City of Burns Plan

This Proposed RMP will be consistent with the Reformatted Comprehensive Plan for the City of Burns, Oregon (1997).

1.7 Relationship to Tribal Government Plans

The Burns Paiute Tribe is known to have an active interest in the Planning Area. Burns BLM management representatives and the RMP team leader have met with tribal leaders of the Burns Paiute Tribe to discuss the RMP/EIS process and to identify tribal goals, needs, or plans which may conflict with or support any of the alternatives. Additional meetings will occur at key points during the process. The Tribe has a representative on the SMAC and the SEORAC. Also, a Tribal representative has participated in RMP ID Team meetings. The Proposed RMP is in conformance with Burns Paiute Tribal land use plans.

1.8 Interior Columbia Basin Ecosystem Management Project Implementation Strategy

The ICBEMP was established in 1994 "...to develop and then adopt a scientifically sound, ecosystem based strategy for managing all United States Forest Service (USFS) - or BLM administered lands within the (Interior Columbia) Basin" (USDA 2000). The ICBEMP covers an area of 145 million acres including all of eastern Oregon. Fifty-three percent of the ICBEMP area is public land managed by the BLM or the USFS. As part of the project, a science integration team was set up and directed to "...study ecological, economic and social systems; examine current and historical conditions; and evaluate whether outcomes from current practices and trends would be consistent with long-term maintenance of ecological integrity and ecosystem health." (USDA 2000). This was all completed at the basin scale. Therefore, a "step-down" process was required to bring findings and information down to a local level where they could be applied in a USFS or BLM management unit such as a ranger district or RA. This is called the SBR process. The ICBEMP area was divided for analysis and review into four geographic scales: broad-scale (Interior Columbia Basin), mid-scale (subbasins or groups of subbasins), fine scale (watershed), and site scale (project). The mid-scale or subbasin level is the level at which field offices would do long-range planning for all resources within their respective administrative boundaries. In March 2000, an ICBEMP supplemental draft EIS was published, followed in December 2000 with a final EIS and proposed ROD (USDA/USDI 2000a, 2000b, 2000c). The ROD was not finalized; the state directors and regional foresters have instead chosen to complete the project through an Implementation Strategy. Scientific data and resource information from the ICBEMP have been incorporated into this Proposed RMP/FEIS where applicable per the Implementation Strategy.

As part of the preparation for the RMP/EIS, the BLM conducted a SBR. The subbasins are based on the United States Geological Survey (USGS) fourth field hydrologic unit codes (HUCs). On average, these fourth field HUCs comprise an area of 500,000 to 1,000,000 acres. The Andrews SBR area included six subbasins wholly or partially within the Planning Area identified in the ICBEMP scientific assessment: Guano, Harney/Malheur Lakes, Alvord Lake, Donner und Blitzen, Thousand-Virgin, and Crooked-Rattlesnake, comprising an area of approximately 6,200,110 acres. Land ownership and administrative responsibilities include private, State of Oregon, BLM, and the USFWS. The majority of the land in the SBR area is administered by the BLM, Andrews Field Office.

The BLM team examined the ICBEMP findings as well as the science behind the findings and identified a number of relevant issues applicable across the Interior Columbia Basin. The BLM determined that some of the findings and science assessments applied to the SBR area. Appendix B of this document contains a complete report of the SBR and the ICBEMP findings applicable to the SBR area. The Proposed RMP/FEIS incorporates multi-scale issues and priorities identified in the SBR.

2 MANAGEMENT ALTERNATIVES

2.1 Description of the Alternatives and Management Actions

This chapter presents the range of alternatives and summarizes the major management actions proposed for each alternative, organized by resource or resource program. The management goals and objectives are stated for each resource or resource use while the management actions developed to achieve the goals and objectives are described for each alternative. The effects of these management actions by alternative result in the projected environmental consequences analyzed in Chapter 4.

2.1.1 Introduction

The development of the five management alternatives included in the Proposed RMP/FEIS was guided by the legal authorities and planning criteria to address management issues. These included the NEPA and BLM planning regulations and policy, which are included in Appendix D. The purpose of developing alternatives is to prepare different combinations of resource uses to address the identified issues and management concerns and to resolve conflicts among uses. As a result, a range of resource management actions and allocations, consistent with the alternatives, was developed for each resource or resource use.

2.1.1.1 Resource Management Plan Goals

The mission of the BLM is to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations. In order to accomplish this mission, the BLM has developed a "Strategic Plan" ("BLM Strategic Plan") containing a comprehensive set of broad goal statements and a subset of mission goals. Two goal statements and a subset of mission goals dealing with public land management are shown below. The complete "BLM Strategic Plan 2000-2005" is available at the BLM web site: www.blm.gov/nhp/info/stratplan.

Goal Number 1: Serve current and future publics.

- Provide opportunities for environmentally responsible recreation.
- Provide opportunities for environmentally responsible commercial activities.
- Preserve natural and cultural heritage resources.
- Reduce threats to public health, safety, and property.
- Provide land, resource, and title information.
- Provide economic and technical assistance.

Goal Number 2: Restore and maintain the health of the land.

- Understand and plan for the condition and use of the public lands.
- Restore at risk resources and maintain functioning systems.

The RMP incorporates the following goals identified under Part II, Vision, of the Interior Columbia Basin Strategy (USDI 2003):

- Sustain, and where necessary, restore the health of the forest, rangeland, aquatic, and riparian ecosystems.
- Provide a predictable, sustained flow of economic benefits within the capability of the ecosystems.
- Provide diverse recreational and educational opportunities within the capability of the ecosystems.
- Contribute to recovery and delisting of threatened and endangered (T&E) species, and 303(d) listed waters.
- Manage natural resources consistent with treaty and trust responsibilities to American Indian tribes.

The RMP also addresses the purpose and objectives for the CMPA as stated in the Steens Act. These are as follows:

- To manage the CMPA to conserve, protect, and manage the long-term ecological integrity of Steens Mountain for present and future generations;
- To maintain and enhance cooperative and innovative management projects, programs, and agreements between tribal, public, and private interests in the CMPA;
- To promote grazing, recreation, historic, and other uses that are sustainable;
- To conserve, protect, and ensure traditional access to cultural, gathering, religious, and archaeological sites on public land within the CMPA by members of the Burns Paiute Tribe and to promote cooperation with private land owners;
- To ensure the conservation, protection, and improved management of the ecological, social, and economic environment of the CMPA, including geological, biological, wildlife, riparian, and scenic resources;
- To promote and foster cooperation, communication, and understanding and to reduce conflict between Steens Mountain users and interests; and
- To ensure that a monitoring program for public land within the CMPA would be implemented so progress toward ecological integrity objectives can be determined.

In addition, goals and objectives were developed specific to each resource/use. These goals are found later in this chapter.

2.1.1.2 Ecosystem Management

As described by the ICBEMP "Summary of Scientific Findings" (USDA/USDI 1996), "Ecosystem management is scientifically-based land and resource management that integrates ecological capabilities with social values and economic relations to produce, restore, or sustain ecosystem integrity and desired conditions, uses, products, values, and services over the long term...." Ecosystem management "concentrates on overall ecosystem health and productivity through an understanding of how different parts of the ecosystem function with each other, rather than on achieving a set of outputs." Human activities, including social values, regarding use of public lands and biophysical components are part of the total picture.

The ICBEMP emphasized gathering, organizing, and understanding information at the basin scale. In order to apply the findings of ICBEMP to the local level (i.e., the Planning Area), management planning should go through a "step-down" process. "Step-down" is the process of applying broad scale science findings and land use decisions to site specific areas using a hierarchical approach in order to understand current resource conditions, risks, and opportunities (USDA 2000). Information developed through this process provides the context by which projects can be developed to meet multiple management objectives.

The ICBEMP describes four levels of analysis below the basin-level analysis. These are intended to provide the context to appropriately apply the scientific findings to individual national forests or BLM districts:

- Subregional analysis – programmatic or broad overview EIS such as those associated with an RMP;
- Mid-scale analysis–SBR;
- Watershed scale analysis; and
- Site specific NEPA analysis.

In order to better define issues and to identify ICBEMP findings applicable to the Planning Area and adjacent public lands, staff conducted a SBR between September 2001 and January 2002. The SBR, or the second layer of the step-down process, is an intergovernmental process tiering mid- and fine scale information to ICBEMP scientific findings. It is also an assessment of ecosystem processes and functions at the subbasin level.

The AMS (available at the Burns District Office) serves as the SBR report. Findings and recommendations from the SBR are carried forward into the RMP/EIS in the issues to be resolved and in the alternatives identified to resolve those issues. These findings and recommendations are identified in Appendix B.

2.1.1.2.1 Desired Range of Conditions

The DRC described below applies to all alternatives, and portrays the land, resource, or social and economic conditions that would begin to be established in 20 to 50 years if management goals were achieved. The length of time to achieve the DRC would vary by alternative depending on the resources involved, the theme of the alternative, and the management actions proposed under that alternative. Appendix P contains descriptions of habitat characteristics important to wildlife.

The following DRC is a description of what the physical and biological condition or degree of function would be or would be moving toward at the end of the 20- to 50-year timeframe. The DRC has been factored into the management goals of each resource management program.

2.1.1.2.2 Description of Desired Range of Conditions

Rangeland vegetation (sagebrush steppe) includes a mosaic of multiple-aged shrubs, forbs, and native perennial grasses. Shrub overstories are present in a variety of spatial arrangements and scales across the landscape level, including large continuous blocks, disjunct islands, and corridors. Plant communities not meeting DRC show upward trends in condition and structural diversity. Desirable plants continue to improve in health and vigor. New infestations of noxious weeds are not common across the landscape, and existing large infestations are declining. Populations and habitat of rare plant species and their associated communities are stable or continue to improve in vigor and distribution.

Large portions of the landscape have a protective soil cover of deep rooted plants and litter, which supports proper hydrologic function. In thin-soiled areas and other appropriate soils, biological soil crust are present that increase soil stability, contribute to nutrient cycles, and act as indicators of rangeland health.

Western juniper dominance is limited to rocky outcrops, ridges, and other historic (old growth) sites where wildland fire frequency is limited by lower site productivity and sparse fuels. Western juniper occurs in low densities in association with vigorous shrubs, grasses, and forbs (where site potential permits). Historic western juniper sites retain old growth characteristics. Quaking aspen groves occupy historic range and are in stable or improving condition.

Rangeland vegetation and water sources support viable, healthy herds of wild horses through time. Individual herds have diverse age structures, good conformation, and are quality animals exhibiting the characteristics unique to each herd. Wild horse numbers are in balance with the rangelands that support them. Improvements in grass/shrubland steppe and riparian areas increase the health of the herd.

The amount and diversity of wildlife habitat are maintained or improved through time. Late seral grass/shrublands exist in blocks of various sizes in well distributed patterns across the landscape. Ongoing management of rangeland habitat components and conditions (such as vegetation cover, forage, and roads) and of key areas helps to maintain big game populations near state wildlife agency objectives. Hunting opportunities continue to be provided throughout the Planning Area. Improvement in the condition of grass/shrubland steppe and riparian areas benefits a variety of wildlife species by increasing the quality, quantity, and variety of habitat. Such species include upland game, raptors, and nongame species. Management has helped to create the long-term habitat changes that contribute toward restoring some sensitive species and toward recovery of listed species.

The area provides a wide variety of recreational opportunities for a growing demand, as the population increases and urban dwellers seek to experience the open spaces commonly found on public land. Additional recreation facilities, restored and maintained recreation sites, and more intensive management are a few of the means used to meet the increased demand. Protection of the natural landscape is an important consideration when designing recreation facilities and planning for related activities. Certain areas are excluded from recreational development to preserve their natural character. Areas such as wilderness, WSRs, and ACECs preserve the integrity of special or unique values over the long term.

Upland soils have sufficient vegetation cover to minimize accelerated soil erosion. Physical and chemical soil properties are adequate for vegetation growth and hydrologic function appropriate to the specific soil type, landform, and climate.

Wildland and prescribed fire play an active role in defining the composition of vegetation and limiting the dominance of woody species including shrubs and invasive juniper.

Riparian areas and stream habitat conditions have improved as a result of protection and management. Watersheds are stable and provide for capture, storage, and safe release of water appropriate to soil type, climate, and landform. Most riparian/wetland areas are stable and include natural streamflow and sediment regimes related to contributing watersheds. Soil supports native riparian/wetland vegetation to allow water movement, filtration, and storage. Riparian/wetland vegetation structure and diversity are progressing toward controlling erosion, stabilizing streambanks, healing incised channels, shading water areas, filtering sediment, aiding in floodplain development, dissipating energy, delaying floodwater, and increasing recharge of ground water appropriate to climate, geology, and landform. Stream channels are narrower, water depth and channel meanders are increasing, and floodplains are developing. Stream channels and floodplains are making important progress in dissipating energy at high water flows and transporting and depositing sediment as appropriate for geology, climate, and landform. Riparian/wetland vegetation is increasing in canopy volume (height and width) and in healthy uneven-aged stands of key woody plants; increasing in herbaceous ground cover; and shifting toward late succession. Surface disturbances inconsistent with the physical and biological processes described above have been reduced. Disturbances such as roads, dispersed recreation sites, and inappropriate livestock use are decreasing as vegetation and soils recover naturally. There is no downward trend in riparian condition and function.

Human use of natural resources is managed to enhance fisheries, improve water quality, and promote healthy riparian conditions. Water quality is managed so that most streams are providing cool, clear, and clean water. High quality water is in greater demand from all users. Better regulation of runoff has improved the water supply from rangelands. There is increased infiltration on upland sites, increased ground water recharge, increased spring flow, reduced peak flow during floods, and increased stability of base flow during late summer and winter.

Management activities have been implemented on nearly all high risk sites to facilitate recovery of upland, riparian, aquatic, and water quality conditions. Improved aquatic habitat conditions allow populations of T&E aquatic species to stabilize and expand into appropriate, previously occupied habitat. Populations of native aquatic species are increasing.

Water quality is improved to provide stable and productive riparian and aquatic ecosystems. Water quality of high priority streams is within state standards, and the remaining streams have made important progress toward attaining those standards. Upland, riparian, and aquatic ecosystems are stable and productive to a degree that leads to acceptable water quality for identified beneficial uses. Improvement has occurred in stream channel integrity and channel processes, under which the riparian and aquatic systems developed. Hydrologic and sediment regimes (the characteristic behavior or orderly occurrence of a natural phenomenon or process) in streams, lakes, and wetlands are appropriate to the surrounding soils, climate, and landform. Instream flows are sufficient to support healthy riparian and aquatic habitats, and stream functions are stable and effective. Flooding streams discharge without substantial damage to the watershed. Riparian vegetation provides sufficient vegetation debris; provides adequate regulation of air and water temperatures during both summer and winter; and helps reduce surface erosion, bank erosion, and channel migration to levels characteristic of natural conditions. Riparian and aquatic habitats support populations of well-distributed native and desired nonnative plant, vertebrate, and invertebrate populations. The DRCs have been factored into the management goals of each resource management program.

A desirable social and economic quality of life would be established and maintained for local residents and visitors.

2.1.1.3 Adaptive Management

Adaptive management is a procedure in which decisions are made as part of an ongoing process of planning, implementing, monitoring, evaluating, and incorporating new information into strategies meeting the goals and objectives of ecosystem management. This process builds on current knowledge, observation, experimentation, and learning from experience. A continuous feedback loop allows for mid-course corrections in management to meet planned goals and objectives. In addition, it provides a model for adjusting goals and objectives as new information develops and when the public recommends management changes.

The complex interrelationships of physical, biological, and social components of the ecosystem and their reaction to land management practices are often not fully understood when a land use management plan is developed. Successful plans must have the flexibility to adapt and respond to new knowledge or conditions. The following processes briefly describe the four parts of adaptive management:

1. **Planning/Decision** – plan development or revision is the process leading to decision making, starting with issue identification and goal development. The next step is gathering information necessary to develop objectives for management direction that address issues and goals. The final stage of planning is to develop alternative management strategies that progress toward achieving management objectives; analyze the consequences of implementing the alternatives; and choose a preferred alternative for implementation.

2. **Implementation** – the process of putting plans and decisions into effect. Implementation includes short- and long-term actions taken to meet management objectives and to progress toward goals and the DRC. Unless otherwise stated, all management direction listed here is assumed to be implemented within ten years. Standards are defined as required management actions addressing the achievement of management goals. In certain situations, standards can include requirements that no action be taken.

3. **Monitoring** – should detect changes early enough in the process so that management activities can be modified to work toward achieving management objectives. Monitoring data provide information on the condition and trend of the ecosystem, and can indicate whether or not goals and objectives are being met. Data can also identify management strategies that appear to be working in the short term.

4. **Evaluation/Assessment** – the point at which plans and monitoring data are reviewed. This phase of adaptive management is used to judge the success of existing plans in meeting or progressing toward objectives and to make recommendations for mid-course corrections. The understanding gained through evaluations is critical to managing sustainable, healthy, and productive ecosystems. Evaluations are a key component of the adaptive management process. An evaluation may lead to a change in management actions that pursues the objectives identified in the approved RMP and resulting activity plans.

2.1.1.3.1 Watershed-Scale Assessment

The watershed scale is the third layer in ecosystem analysis and planning. Where management actions are likely to have a watershed scale effect, watershed scale assessment would be used, if necessary, to assure that potential actions are evaluated with an overall understanding of the capabilities and limitations of specific watersheds. Information gained through analysis at this scale would be used in the adaptive management process, and may support land management decisions as well as development of ecologically sustainable programs and projects.

2.1.1.3.2 RMP Monitoring

The BLM planning regulations (43 CFR 1610.4-9) call for the monitoring of resource management plans on a continual basis with a formal evaluation done at five-year intervals. The RMP would be monitored on a continual basis to allow up-to-date evaluations and to respond to changing situations. Management actions arising from activity level plan decisions would be evaluated for consistency with RMP objectives. Monitoring plans would assess implementation of the following:

- Satisfactory progress toward objectives through management actions;
- Actions consistent with current policy;
- Original assumptions correctly applied and impacts correctly predicted;
- Satisfactory mitigation measures;
- Consistency of the RMP with the plans and policies of state and local government, other federal agencies and Indian tribes; and
- New data availability that would require plan alterations.

RMP monitoring would be conducted at multiple levels and scales. Monitoring would be conducted in a manner to allow localized information to be compiled and considered in a broader regional context, thereby addressing both local and regional issues. At the project level, monitoring would examine how well specific management direction has been applied on the ground and how effectively it produces expected results. Monitoring at broader levels would measure how successfully projects and other activities have achieved the objectives for those management areas.

Monitoring results would provide managers with the information needed to determine whether an objective has been met, and whether or not to modify the management direction. Findings obtained through monitoring, together with research and other new information, would provide a basis for adaptive management changes to the plan. The processes of monitoring and adaptive management share the goal of improving effectiveness and permitting dynamic response to increased knowledge and a changing landscape.

If monitoring and evaluation indicate that modifying the plan is necessary, the Andrews Field Manager or the Three Rivers Field Manager and the Burns District Manager would determine what, if any, changes are necessary to show that management actions are consistent with RMP objectives. If the District Manager finds that a plan amendment is necessary, an environmental analysis of the proposed change, consistent with the NEPA, would be conducted and a recommendation on the amendment made to the State Director. If approved, it may be implemented 30 days after public notice. A plan amendment may be initiated because of the need to consider monitoring findings, new data, new or revised policy, or a proposed action that may result in a change in the scope of resource uses or a change in the terms, conditions, and decisions of the approved plan.

Potential minor changes, refinements, or clarifications in the plan may take the form of maintenance actions. Maintenance actions incorporate minor data changes and are usually limited to minor refinements and documentation. Plan maintenance would not result in expansion of the scope of resource uses or restrictions, nor change the terms, conditions, and decisions of the approved RMP. Maintenance actions are not considered plan amendments and do not require a formal public involvement and interagency coordination process.

Monitoring is an essential component of natural resource management because it provides information on the relative success of management strategies. The implementation of the RMP would be monitored to show that these management actions: (1) follow prescribed management direction (implementation monitoring); (2) meet or progress toward desired objectives (effectiveness monitoring); and (3) are based on accurate assumptions (validation monitoring).

2.1.2 Overview of the Alternatives

2.1.2.1 Alternatives Considered but Eliminated from Detailed Analysis

The range of alternatives was sufficiently broad to accommodate all other variations of existing alternatives. No other alternatives were presented that differed sufficiently from the five existing alternatives to warrant independent consideration.

2.1.2.2 Alternatives Analyzed in Detail

The BLM planning process calls for the development of goals, objectives and actions to manage each of the resources and uses within the Planning Area. Every decision proposed through the planning process is actually a string of components. The primary components are the goals, objectives and management actions. Additional components include management framework and monitoring. Each of these components is defined as follows:

Management Framework - primary reasoning behind the importance of pursuing the stated management goal.

Management Goal - a broad statement of a desired outcome. Goals are usually not quantifiable and may not have established timeframes for achievement.

Management Objective - a description of a desired condition for a resource. Objectives can generally be quantified and measured and, where possible, have established timeframes for achievement.

Management Action - measures that are to be undertaken to achieve the stated management objective. Management actions state management activities or land uses that are allowed, restricted, or excluded, and provide the basis for subsequent implementation and effectiveness monitoring.

Monitoring - assessment of the resources is conducted to determine whether or not the identified management objectives are being accomplished.

Alternatives would generally meet the goals that have been identified for all resources. However, there are differences between alternatives. These differences address how quickly the management goals are being met; the degree to which

they are met; the priorities within the program; the emphasis placed on different management activities, and whether those actions are active or passive. They also identify what resources or uses society is willing to forego.

Integrated resource management was emphasized in formulating the alternatives. A primary concern was that all major ecological and socioeconomic systems go through the selection of specific management actions. Public input received through the planning process was considered in the development of alternatives.

The management goals associated with the alternatives may not be completely met over the life of the plan (up to 20 years). Funding and staffing levels would affect rates of implementation, and projected implementation rates may vary from alternative to alternative, depending on the cost of prescribed management activities. All alternatives would follow existing laws, regulations, and guidelines.

2.1.2.3 Management Themes of the Alternatives

The following is a description of the five alternatives considered in detail:

Alternative A (No action. Continues current management):

This alternative would continue management under the existing Andrews MFP and amendments, and the Andrews Grazing Management Final EIS and Rangeland Program Summary as well as the Three Rivers RMP. In addition to these, the dictates of the Steens Act and the various existing activity plans would apply to the CMPA. Resource values and sensitive habitats would receive management emphasis at current levels. Emphasis would focus on maintaining existing conditions. No comprehensive plan for restoration of degraded systems would be used. Restoration would take place on a case-by-case basis and would utilize either active or passive methods.

Alternative B (Excludes commodity production and limits other uses to maximize natural processes):

This alternative would exclude all permitted discretionary uses of the public land including, but not limited to, livestock grazing, mineral sale or leasing, realty actions, recreation uses requiring permits, and new commercial ROWs. The BLM would petition the Department of Interior to withdraw the entire Planning Area from locatable mineral entry. This alternative would allow no commodity production and would include only those management actions necessary to maintain or improve natural values and protect life and property. Any management actions would utilize primarily passive methods. Some components of the alternative may not be possible to implement in the CMPA because of legal requirements and constraints of the Steens Act, but the alternative is included for purposes of impact analysis and comparison.

Alternative C (Emphasizes protection of natural values):

This alternative emphasizes the restoration of natural systems that are degraded and the maintenance of those that are functioning at a high level of condition. Commodity production would be constrained to protect natural values and systems that are in advanced ecological status or to accelerate improvement in those that are in less than advanced ecological status. Constraints to protect sensitive resources would be the most restrictive. In some cases and in some areas, commodity production could be excluded to protect sensitive resources, while still providing for overall sustainable commodity production as provided for in the Steens Act. Both active and passive restoration methods would be utilized to achieve management goals.

Proposed RMP (Balances cultural, economic, ecological, and social health in a manner that encourages cooperative management practices):

This alternative emphasizes natural resource use, protection, and environmental health, and places high importance on balancing cultural, economic, ecological, and social values. This would be accomplished within the limits of the natural system's ability to provide commodities on a sustainable basis and within the constraints of laws and regulations, including the Steens Act as it pertains to the CMPA. This alternative encourages cooperative management of the Planning Area by collaborative arrangements with land owners, permit holders, other land managers, and interested parties. This alternative recognizes that the long-term cultural, economic, social, and ecological integrity of the Planning Area are intertwined and cannot be maintained without involving land owners, permit holders, local and tribal governments, and interested parties in relationships involving cooperation, consultation, and coordination. This alternative would balance the values that through the generations created the area's cultural and physical environment. Constraints to protect sensitive resources would be implemented, but would be less restrictive than under Alternative B, so that sustainable commodity uses and production would be maintained.

Alternative E (Emphasizes commodity production and public uses):

This alternative would emphasize commodity production and production of goods and services such as mining, grazing, commercial recreation, harvesting commercial woodlands products, and tourism. Under this alternative, constraints on commodity production for protection of sensitive resources would be the least restrictive possible within legal limits, while still meeting the requirements of the Steens Act for management of the CMPA. Potential impacts to sensitive resources would be mitigated on a case-by-case basis. Emphasis would be on maintaining resource conditions where required. Restoration actions that would enhance commodity production would utilize primarily active methods. Other restoration actions would utilize passive methods.

2.2 Air Quality

2.2.1 Goal - Maintain, restore, or protect air resources to support public health, visibility, and regional haze standards and goals.

2.2.1.1 Management Framework

Smoke is a factor that may affect a land manager's ability to use larger and more frequent wildland fire for restoration and maintenance of fire dependent ecosystems.

The Clean Air Act (CAA) requires federal agencies to comply with all federal, state, and local air pollution requirements. The CAA also requires each state to develop a state implementation plan (SIP) to demonstrate that the national ambient air quality standards (NAAQS) are attained and maintained for the criteria pollutants. The DEQ is responsible for producing the SIP, but delegates the smoke management portion to the Oregon Department of Forestry (ODF). As part of the SIP, the ODF developed instructions and requirements for wildland and prescribed fire emissions in the smoke management plan. The smoke management plan does not cover those portions of the areas with range lands or agricultural lands outside of the Willamette Valley, Oregon.

The NAAQS are described in the CAA. The NAAQS have been established for six pollutants. Of these six criteria pollutants, natural resource management activities largely affect only the production of particulate matter (PM). However, most PM of concern is produced from fire and most of this is less than ten microns in diameter (PM_{10}), which is the size class that is currently regulated under the CAA. PM_{10} produced from fire does not seriously affect forest and rangeland ecosystems because fire is a natural part of these systems. However, it does have effects on human health. A NAAQS has also been established for $PM_{2.5}$. The method for determining attainment with the NAAQS changed with the 1990 amendments to the CAA, to require several years of monitoring before a determination can be made. The attainment status for $PM_{2.5}$ in the Planning Area has not yet been determined. However, the determination should be completed in 2004 or 2005.

Southeast Oregon has been designated as a "clean air source" by the Grand Canyon Visibility Transport Commission. The EPA has finalized the regional haze rule and states, including Oregon, are in the process of updating their smoke management plans to incorporate regional haze provisions. At the time of the publication of the Proposed RMP/FEIS, the additional requirements for the smoke management plan are not known. Once the requirements are finalized, the BLM will comply with the provisions of the Oregon Smoke Management Plan.

2.2.1.2 Management Direction by Alternative

Objective 1. Manage wildland fires to avoid degradation of the airshed.

Management Common to All Alternatives

The BLM will cooperate with other federal, state, and local governments on smoke management related to wildland fires. This cooperation may include the use of a voluntary communication plan.

Alternative A

Conduct prescribed fire while meeting federal and state air quality and smoke management standards. An estimated average of 5,000 to 20,000 acres would be burned per year using prescribed fire.

Alternative B

Allow wildland fire while meeting federal and state air quality and opacity standards. Prescribed fire would be used to a limited degree. Natural fire processes would be allowed to operate in the Planning Area.

Alternative C

Utilize wildland fire while meeting federal and state air quality and opacity standards. Under this alternative, prescribed fire and wildland fire use to achieve resource management objectives would not be limited.

Proposed RMP

Utilize wildland fire while meeting federal and state air quality and opacity standards. Under this alternative, prescribed fire and wildland fire use to achieve resource management objectives would not be limited. Ideally, a limited amount of area would be burned, which would enable landscape scale objectives to be achieved in years when those opportunities are available.

Alternative E

Utilize wildland fire while meeting federal and state air quality and opacity standards. Under this alternative, prescribed fire and wildland fire use to achieve resource management objectives would be limited.

Objective 2. Manage mining and aggregate operations to avoid degradation of the airshed.

Alternative A

The BLM would require air quality permits from the DEQ for all operations in the Planning Area. In addition, the BLM would require dust abatement measures at mining operations.

Alternative B

The BLM would withdraw the remainder of the Planning Area from mineral entry and development.

Alternative C

Same as Alternative B.

Proposed RMP

Same as Alternative A.

Alternative E

Same as Alternative A.

Objective 3. Manage authorized land use activities to avoid degradation of the airshed.

Alternative A

The BLM would require dust abatement measures for authorized activities on a case by case basis.

Alternative B

The BLM would require dust abatement measures for authorized activities necessary for basic maintenance and public health and safety on a case-by-case basis.

Alternative C

Same as Alternative A.

Proposed RMP

Same as Alternative A.

Alternative E

Same as Alternative A.

2.2.2 Monitoring

See Appendix Q.

2.3 Water Resources

2.3.1 Goal - Maintain, restore, or improve water quality and quantity to sustain the designated beneficial uses on public lands.

2.3.1.1 Management Framework

The Clean Water Act (CWA) of 1977, as amended, required the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. The State of Oregon, under delegated authority and oversight by the EPA, defines the beneficial uses, and establishes policies and standards relative to managing the quality of Waters of the State. Water quality is managed by the DEQ through implementation of the Antidegradation Policy and supporting policies defined in Oregon Administrative Rules (OAR) 340-041-0026, which includes the High Quality Waters Policy, Outstanding Resource Waters Policy, and Water Quality Limited Waters Policy. The purpose of the Antidegradation Policy is to guide decisions that affect water quality such that unnecessary degradation from point and nonpoint sources of pollution is prevented, and to protect, maintain, or improve existing surface water quality relative to designated beneficial uses. Beneficial uses designated for the Malheur Lakes Basin include domestic water supply, livestock watering, irrigation, salmonid and resident fish habitat, wildlife and hunting, fishing, water contact recreation, and aesthetic quality. High Quality Waters Policy and Outstanding Resource Waters Policy generally apply to maintenance and protection where existing water quality meets or exceeds those levels necessary to support beneficial uses. The Water Quality Limited Waters Policy addresses those waters that do not currently meet water quality standard(s).

The BLM, as a Designated Management Agency, is responsible pursuant to the CWA for implementing land management activities that maintain, protect, or improve the quality of waters under their jurisdiction. In addition to the CWA, numerous laws, regulations, policies, and Executive Orders direct the BLM to manage water quality for the benefit of the nation and its economy (Appendix D). Thus, the BLM is required to maintain water quality where it meets state water quality standards and to improve water quality where it does not meet standards. Potential nonpoint source pollution is the primary water quality issue associated with public land management and is the focus of this discussion. Management of nonpoint source pollution is conducted through the development and implementation of Best Management Practices (BMPs) during activity level planning and analysis. BMPs are defined as methods, measures or practices selected by an agency to meet its nonpoint source control needs. BMPs include but are not limited to structural and nonstructural controls, and operation and maintenance procedures. BMPs can be applied before, during, and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters (40 CFR 130.2(m), EPA's Water Quality Planning and Management). In the context of public land management, the development and implementation of BMPs are primarily relevant to actions such as recreation, grazing, fuels and transportation management. Further, the design and implementation of land management actions and BMPs are relative to the management of upland and riparian vegetation, and the associated attributes and processes that facilitate watershed function.

BMPs are identified as part of the NEPA process, with interdisciplinary involvement. Since the control of nonpoint sources of pollution is an ongoing process, refinement of BMP design may be necessary. This adaptive management process can be described in five steps: (1) selection of design for a specific BMP; (2) application of the BMP; (3) monitoring; (4) evaluation; and (5) feedback. Data gathered through monitoring is evaluated and used to identify changes needed in BMP design, application, or in the monitoring program. The Forest Service and BLM Protocol for Addressing CWA Section 303(d) Listed Waters (Protocol) outlines the approach for the BLM to meet obligations for contributing to the management of the state's impaired waters. The Protocol was developed by the USFS, BLM, EPA and DEQ, as well as other agencies. The Protocol recognizes Water Quality Restoration Plan(s) (WQRPs) as the primary mechanism

to address and restore impaired waters on BLM administered lands. WQRPs or equivalent would serve the purpose of surface water temperature management plan(s) described in OAR 340-041-0026.

A watershed/subwatershed priority list (Table 2.3.1) was generated to generally guide assessment of ecosystem conditions, development of site specific management actions and associated short-term and intermediate monitoring objectives, and to provide a context of evaluating progress toward plan level objectives and goals. Work would focus on higher priority areas; however, other areas may require attention to address site specific needs. The following list describes the criteria used to prioritize watersheds and the process that would be used to change priorities, if necessary.

- Legal mandates (CWA, Endangered Species Act [ESA], WSRs Act, etc.);
- Resources at risk or of concern;
- Potential for recovery;
- Resource conflicts or controversy;
- Opportunity for interagency or partnership assessments;
- Field staff knowledge of the area; and
- Current ongoing or anticipated future management opportunities.

2.3.1.2 Management Direction by Alternative

Objective 1. Comply with state and federal requirements to protect public waters.

Management Common to All Alternatives

To reasonably prevent degradation of water quality, BMPs (Appendix F) would be prescribed and implemented at the activity plan level.

The management of riparian areas is an important component of restoring water quality, and would differ among the alternatives.

Objective 2. Protect all designated beneficial uses by preventing or limiting nonpoint source pollution; maintain or improve existing water quality and quantity through implementation of BMPs.

Management Common to All Alternatives

To reasonably prevent degradation of water quality, BMPs (Appendix F) would be prescribed and implemented at the activity plan level. These BMPs would also be directed toward management practices to facilitate maintenance or improvement of attributes (i.e., vegetation, channel geometry) identified through PFC assessment or other qualitative or quantitative methods.

The management of riparian areas is an important component of restoring water quality, and would differ among the alternatives.

Alternatives A and E

Maintain existing developed water sources (i.e. spring developments, reservoirs, and wells) and develop new sources through project level planning to promote the distribution and quantity of available water for beneficial uses such as wildlife, livestock or wild horses. The BLM would rely on the DEQ to determine and designate ecologically important cold-water refuges.

Alternative B

Inventory developed water sources (i.e. spring developments, reservoirs, and wells) and evaluate contribution to beneficial uses though site specific assessments. Maintain existing water developments in the CMPA that contribute to beneficial uses; allow natural processes to reclaim water developments that are determined through site specific assessment to not contribute to beneficial uses, except where necessary for wild horse management. Allow natural processes to reclaim existing water developments in the AMU, except where necessary for wild horse management.

Through watershed assessment, WQRP, or other processes, stream reaches or sites would be identified that provide or contribute summertime cold-water habitat in subwatersheds where stream temperatures limit the distribution and abundance of aquatic species. Protection measures (BMPs) in WQRPs, or activity level plans for such reaches/sites

would be identified and implemented. The BLM would coordinate with the DEQ on locations and rationale of stream reaches/sites for evaluation as ecologically important cold-water refuges.

Alternative C

Same as Alternative B, except existing developed water sources in the CMPA and AMU that contribute to beneficial uses would be maintained. Active and passive restoration efforts may occur in reclaiming developed water sources determined as no longer providing beneficial uses, such as the No Livestock Grazing Area of the Steens Mountain Wilderness. Existing and future water developments would be maintained or implemented when determined to contribute to beneficial uses or to facilitate management, or protection of off-site natural values, such as water quality and riparian resources through distribution of wildlife, livestock, or wild horses.

Proposed RMP

Same as Alternative C, including specific emphasis on reclaiming existing developments in the designated No Livestock Grazing Area of the Steens Mountain Wilderness to facilitate cooperative management and future water resource developments on public and private lands through legal processes of the Oregon Department of Water Resources.

Objective 3. Manage impaired waters on public lands listed under Section 303(d) of the CWA to restore beneficial uses and to improve water quality so that listing is no longer warranted.

Management Common to All Alternatives

The status of waters identified on the 303(d) list would be evaluated. Impairment would be validated or, in cases where water quality improvement has resulted from restoration activities since the listing, evaluation may suggest that the listing is no longer warranted. In cases where the listing is validated, management measures that are sufficiently stringent to restore water quality may be recognized, especially in areas such as wilderness and WSRs where such management may be required to meet other objectives. In other impaired waters, WQRPs would be developed and implemented. Other available mechanisms may be explored for removing impaired waters from the 303(d) list, such as changes in water quality standards. The development and implementation of sufficiently stringent measures and WQRPs to address water quality would be based upon assessment and monitoring of existing activity level management, resource management alternatives identified through this RMP, appropriate BMPs, and subsequent activity level planning efforts. Site/reach specific objectives, guidelines, or standards would be determined through the development of the WQRP and Total Maximum Daily Loads (TMDL).

Alternative A

Under this alternative, current management would continue. Riparian and adjacent upland areas that influence 303(d) listed waterbodies would be managed according to site or reach specific management objectives identified in activity level plans and modified, as necessary, relative to WQRPs and TMDLs. Development and implementation of WQRPs would follow the TMDL schedule outlined by the DEQ.

Alternative B

All perennial and intermittent waters would be managed toward an advanced ecological status of riparian vegetation communities. Maintenance, protection or restoration of riparian and aquatic function and processes would be emphasized through specific management actions and performance measures identified in the relevant WQRP and TMDL, respectively. The development and implementation of WQRPs and associated management (BMPs) would be generally guided by the stream/watershed priority list (Table 2.3.1) along with consideration of new circumstances or emerging opportunities. Initial WQRP priority would be assigned to waters where Lahontan cutthroat trout, protected pursuant to the ESA, are the most sensitive beneficial use. Natural processes would be emphasized and active restoration would be limited through planting riparian vegetation along reaches/sites that are not likely to achieve or progress toward attainment of advanced ecological status within the RMP goal timeframe of 20 to 50 years.

Table 2.3.1: Priority Streams/Subwatersheds Identified to Guide Development of Watershed Management Actions and Water Quality Restoration Plan(s) for the Planning Area

PLANNING AREA PRIORITY STREAMS/WATERSHEDS			
ALVORD SUBBASIN (TMDL 2004)			
Relative Priority	**Location**	**Stream**	**Rationale**
1	East Steens Mountain	Little McCoy**, Mosquito*, Willow*, Little Wildhorse***, Cottonwood**, Big Alvord**, Little Alvord**, Pike**, Wildhorse***	303(d) List; Lahontan cutthroat trout (ESA); Allotment Management Plans (2004); Biological Opinion(s); Wilderness/WSA
2	Pueblo Mountain	Van Horn*, Denio*, Little Cottonwood,	303(d) List; Lahontan cutthroat trout (ESA); Biological Opinion(s); WSA
9	Trout Creek Mountains	Big Trout***, East Fork Big Trout***, Little Trout***	303(d) List; rainbow-cutthroat trout hybrid; WSA
DONNER UND BLITZEN SUBBASIN (TMDL 2010)			
3	Upstream of Page Springs	Donner und Blitzen*, Little Blitzen*, Ankle*, Mud*, Big Indian*, Indian*, Deep*, Fish*, Little Indian**	303(d) List; redband trout, Malheur mottled sculpin, and Columbia spotted frog; RTR; Aquatic Stronghold (redband trout); Priority Watershed; Wilderness; WSR
7	Downstream of Page Springs	Bridge**, Mud**	Redband trout, Malheur mottled sculpin, Columbia spotted frog; WSA
6	Downstream of Page Springs	Kiger**, Little Kiger**	Redband trout and Malheur mottled sculpin; WSR; Wilderness
5	Downstream of Page Springs	McCoy*, Cucamonga**	303(d) List; redband trout, Malheur mottled sculpin, and Columbia spotted frog
11	Downstream of Page Springs	Krumbo**	Redband trout (possible introduced rainbow / hybrids)
GUANO SUBBASIN (TMDL 2010)			
4	Catlow Rim	Home*, Threemile**	303(d) List; redband trout and Catlow tui chub; Wilderness
HARNEY-MALHEUR LAKES SUBBASIN (TMDL 2010)			
8		Riddle*, Coyote**	303(d) List; redband trout and Malheur mottled sculpin
10		Smyth**	Redband trout

*303(d) List/T&E, Candidate, or BLM Special Status aquatic species present
**T&E, Candidate, and/or BLM Special Status aquatic species present
***303(d) List/nonsensitive aquatic species

Alternative C

Management under this alternative would be the same as Alternative B; however, active restoration may be pursued to initiate or increase the rate of progress toward advanced ecological status of riparian vegetation communities.

Proposed RMP

All perennial waters listed under Section 303(d) of the CWA, as well as contributing perennial and intermittent streams, would be managed toward an appropriate ecological status to attain or progress toward attainment of water quality standards or other surrogate measures of water quality standards necessary to protect beneficial uses. Determination of appropriate ecological status to protect beneficial uses, and implementation of BMPs to maintain, protect or restore riparian and aquatic function and processes would be identified in the relevant WQRP and TMDL. The development and implementation of WQRPs and associated management (BMPs) would be generally guided by the stream/watershed priority list (Table 2.3.1) along with consideration of new circumstances or cooperative management opportunities. Initial WQRP priority would be assigned to waters where Lahontan cutthroat trout, protected pursuant to the ESA, are the most sensitive beneficial use.

Alternative E

Management under this alternative would be the same as Alternative A; however, development and implementation of WQRPs would be generally guided by the stream/watershed priority list (Table 2.3.1) along with consideration of new circumstances or emerging opportunities.

2.3.2 Monitoring

See Appendix Q.

2.4 Soils and Biological Soil Crusts

2.4.1 Goal 1- Manage soils on public lands to maintain, restore, or improve soil erosion classes, watershed health, and areas of fragile soils.

2.4.1.1 Management Framework

Soils provide the foundation for vegetation growth and site productivity. Management goals for vegetation, watershed, wildlife and livestock are more difficult to achieve without healthy, productive, and intact soils. Within the semiarid Planning Area, soils are young and poorly developed. Biological and chemical soil development processes such as rock weathering and decomposition, plant material decomposition, accumulation of organic matter, and nutrient cycling proceed slowly in this environment. Due to slow soil recovery processes, the disruption of soils can lead to long-term changes in soil ecology and productivity.

2.4.1.2 Management Direction by Alternative

Objective 1. Manage mineral soil to limit accelerated erosion on critical sites, protect soil characteristics on noncritical sites, and maintain or improve existing infiltration and permeability rates.

Proposed RMP and Alternatives A, C, and E

BMPs would be implemented to protect and manage soil for all ground disturbing activities including new projects, livestock grazing, and road maintenance and construction. See Appendix F for a complete description of BMPs.

Alternative B

Natural processes would affect soil conditions in the Planning Area except where management is necessary to arrest excessive soil movement on critical sites.

2.4.2 Goal 2 - Increase the understanding of the management of Northern Great Basin biological soil crusts.

2.4.2.1 Management Framework

Biological soil crusts (also known as cryptogamic, biotic, microbiotic, and microphytic crusts) play a role in a functioning ecosystem. For an expanded discussion on how biological soil crusts contribute to the functional, structural, and compositional parts of a functioning ecosystem, see the technical reference TR-1730-2 (Biological Soil Crusts: Ecology and Management 2001).

Biological soil crusts may represent up to 70 percent of the living cover in some arid ecosystems (Belnap 1992). In addition to providing biological diversity, biological soil crusts contribute to soil stability through increased resistance to erosion, nutrient cycling, and microtopography formation (TR-1730-2).

Guidance contained in 43 CFR 4180 directs public land management toward the maintenance or restoration of the physical function and biological health of vegetative ecosystems. The 1997 Standards for Rangeland Health and Guidelines for Livestock Grazing Management for public Lands in Oregon and Washington (S&Gs) (Appendix G) also provide guidance on this subject.

Biological soil crusts are one of at least twelve potential indicators used in evaluating watershed function for uplands. The condition or degree of function of a site in relation to the standards, and its trend toward or away from any standard, is determined through the use of reliable and scientifically sound indicators. The consistent application of such indicators can provide an objective view of the condition and trend of a site when used by trained observers (USDI 1997). The Andrews/Steens RMP will provide for monitoring of the indicators of rangeland health, including biological soil crusts, and that the BLM will use the data resulting from this monitoring to inform decisions regarding management of grazing and other resource uses (USDI Office of Hearings and Appeals settlement of OR-020-97-01 and OR-020-96-01).

The BLM will then develop a soil crust monitoring strategy appropriate to the Pueblo-Lone Mountain Allotment (USDI Office of Hearings and Appeals settlement of OR-020-97-01 and OR-020-96-01). Action items in the Proposed RMP/FEIS are specifically related to the strategy for biological soil crust monitoring that is being developed by the Burns BLM.

Management actions authorized or implemented by the BLM could influence future biological soil crust communities. These actions may include season, intensity, and duration of livestock grazing; the influence of wildland fire and fire suppression activities; emergency fire rehabilitation and reintroduction of grazing following fire; the use of natural fuel breaks and management-created fuel breaks to protect all resources from frequent fire return intervals; rehabilitation and reclamation actions following soil disturbing activities; OHV and mechanized vehicle use; wild horse management; recreational use; and mining.

2.4.2.2 Management Direction by Alternative

Objective. Collect biological soil crust data within the Planning Area.

Management Common to All Alternatives

A standard monitoring methodology would be developed and implemented to monitor the Pueblo-Lone Mountain Allotment and other allotments within the Planning Area. In addition, the biological soil crust community would be monitored as one of the indicators for the S&Gs.

Alternative A

Biological soil crust data would continue to be collected within the Planning Area.

Alternative B

Use the data from biological soil crust monitoring to inform decisions concerning the maximization of natural values.

Alternative C

Use the data from biological soil crust monitoring to inform decisions concerning the protection or restoration of natural values.

Proposed RMP

Use the data from biological soil crust monitoring to inform decisions that balances cultural, economic, ecological and social health and accommodates cooperative management practices in areas containing biological soil crusts.

Alternative E

Use the data from biological soil crust monitoring to inform decisions concerning natural resources and additional commodity production in areas containing biological soil crusts.

2.4.3 Monitoring

See Appendix Q.

2.5 Vegetation

2.5.1 Goal - Manage vegetation to achieve and maintain healthy watersheds.

2.5.1.1 Management Framework

With the passage of the FLPMA and the Public Rangelands Improvement Act (PRIA) of 1978, objectives and priorities for the management of public land vegetation resources were more clearly defined. Guidance contained in 43 CFR 4180 of the regulations directs public land management toward the maintenance or restoration of the physical function and biological health of vegetative ecosystems. The S&Gs approved by the Secretary of the Interior on August 12, 1997 also provide guidance for the management of plant communities. The S&Gs are included as Appendix G. This objective would maintain and improve the condition in plant communities that provide wildlife habitat, recreation, forage, scientific, scenic, ecological, and water and soil conservation benefits for consumptive and nonconsumptive uses. The long-term goal of vegetation management across the landscape is to maintain or improve rangeland condition to a DRC which meets management objectives.

Management actions authorized or implemented by the BLM would influence future vegetation composition. These actions may include: season, intensity, and duration of livestock grazing within diverse vegetation communities; the influence of fire and associated suppression actions; emergency fire rehabilitation and reintroduction of grazing following fire; the use of natural and management created firebreaks to protect early seral communities from frequent fire intervals; rehabilitation and reclamation actions following soil disturbing activities; management of noxious weeds; OHV and mechanized vehicle use; wild horse management; recreational use; and mining.

2.5.2 Riparian and Wetlands

2.5.2.1 Goal - Maintain, restore, or improve riparian vegetation, habitat diversity, and geomorphic stability to achieve healthy, productive riparian areas and wetlands and associated structure, function, process and products that provide public land values such as forage, water, cover, structure and security necessary to meet the life history requirements of fish and wildlife; public recreation and aesthetics; water quality and quantity; and livestock forage and water.

2.5.2.1.1 Management Framework

The FLPMA and PRIA direct the BLM to "... manage public lands according to the principles of multiple use and sustained yield" and "manage the public lands to prevent unnecessary degradation... so they become as productive as feasible." Section 102 of the FLPMA also requires that public land be managed for multiple use and sustained yield in a manner that would protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values. Section 102 also mandates that public land be managed in a manner that recognizes the nation's need for domestic sources of minerals, food, timber, and fiber. In addition to the FLPMA, numerous laws, regulations, policies, Executive Orders, and MOUs and memorandums of agreement (MOAs) direct the BLM to manage its riparian/wetland areas for biological diversity, and to maintain their productivity and sustainability for the benefit of the nation and its economy. These directives are listed in Appendix D. While the directives listed in Appendix D relate specifically to planning requirements, they also relate to management in general.

Functioning riparian/wetland areas are essential to maintenance and improvement of water quality and quantity, fish and wildlife habitat, and soil and alluvial groundwater retention. Healthy riparian/wetland areas increase the quantity and quality of forage for wildlife and livestock. Riparian zones serve as a primary indicator of watershed health. Management of riparian/wetland areas for the DRC would be implemented to maintain or progress toward attainment of PFC. This would be a first step toward achieving water resource and fish/wildlife habitat objectives in entire watersheds and/or their components such as uplands, streams, riparian/wetland areas, springs, lakes, and ponds.

Section 102.8 of the FLPMA states that it is the policy of the United States to manage the public land in a manner that would protect the quality of multiple resources and that would provide food and habitat for fish, wildlife and domestic animals. Beaver are considered to be an important part of the riparian habitat as discussed in "Riparian Area Management" TR 1737-5 (1990), TR 1737-6 (1992) and TR 1737-15 (1998). Habitat created behind beaver dams supports a diversity of aquatic organisms, fish, and wildlife including the Columbia spotted frog, a candidate species for listing as threatened or endangered. Although beaver are still present in some locations within the Planning Area, they have been removed or have emigrated from other locations. To allow for transplanting or reestablishment of beaver into suitable habitat where they were found previously, BLM Manual 1745, "Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants" (1992) states that "Decisions for making introductions transplants, or reestablishments should be made as part of the land use planning process…." Recommendations for transplants of beaver onto or removal of beaver from public lands would be coordinated with the ODFW.

2.5.2.1.2 Management Direction by Alternative

Objective 1. Achieve or maintain a rating of PFC for perennial and intermittent flowing and standing waterbodies relative to site capability, site potential, and BLM management jurisdictions.

Management Common to All Alternatives

Management prescriptions would be implemented or continued at the activity plan level designed to maintain, restore, or improve specific attributes of riparian/wetland areas to maintain or progress toward attainment of PFC.

Objective 2. Maintain, restore, or improve riparian/wetland vegetation communities relative to ecological status, site potential and capability, or site specific management objectives, and transportation plans.

Management Common to All Alternatives

Assess reach/site scale riparian/wetland vegetation, hydrology, morphology, and soil characteristics (subsamples) to evaluate site potential and capability. To assist in riparian restoration and to preserve genetics, sources of localized riparian tree and shrub (cottonwood, willow) material would continue to be established and maintained.

Alternative A

Under this alternative, current management would be continued. Activity level management prescriptions or WQRP prescriptions would be developed and implemented based on reach/site assessment and site specific resource management objectives. Existing grazing and recreation systems and improvements that maintain PFC relative to reach capability and potential would continue. Existing roads associated with riparian areas would be maintained and additional roads developed on a case-by-case basis in conformance with existing laws and regulations.

Alternative B

Activity level management prescriptions or WQRP prescription(s), and propagation of local woody vegetation would be developed and implemented as in Alternative A, but would be generally guided by the stream/subwatershed priority list (Table 2.3.1) along with consideration of new circumstances and emerging opportunities. Recreational use, where occurring, would be managed in riparian/wetland areas emphasizing passive measures. Riparian/wetland areas would be managed to maintain or progress toward attainment of advanced ecological status. Restoration of riparian/wetland vegetation and adjacent upland vegetation that influences riparian vegetation communities would primarily rely on natural maintenance and recovery processes. In riparian areas determined through watershed level or site/reach specific assessment as unlikely to achieve or progress toward attainment of advanced ecological status within the RMP goal timeframe of 20 to 50 years, active restoration through planting native riparian vegetation may be initiated. Road networks would be inventoried; routes that affect riparian areas relative to site/reach specific objectives would be eliminated, relocated, or reconstructed. Natural recovery of abandoned roadbeds would be allowed where erosion potential is minimal and recovery potential is moderate to high. Active restoration of abandoned roadbeds would be pursued where erosion is likely and natural recovery potential is limited. Road crossings would be evaluated and modified, as necessary, to simulate natural stream function and process.

Alternative C

This alternative is similar to Alternative B. However, livestock and recreational use of riparian/wetland areas would be managed by active and/or passive measures, including BMPs, in both the CMPA and AMU. Active and/or passive

restoration may occur within riparian areas and adjacent uplands that influence riparian areas. Planting and other manipulation of riparian/wetland vegetation may occur to accelerate progress toward advanced ecological status. Riparian vegetation planting and/or manipulation may be protected through installation of temporary fence exclosures/cages. Condition of upland communities that influence riparian/wetland areas, such as increased fire frequency or intensity and/or erosion potential, may be actively restored with native and/or desirable nonnative vegetation and mechanical methods. Restoration sites would be managed to progress toward native vegetation communities within the RMP goal timeframe of 20 to 50 years.

Proposed RMP

This alternative is similar to Alternative C. However, ecological status objectives would be based on maintaining or progressing toward attainment of PFC; obligations pursuant to the CWA, ESA, and appropriate Executive Orders; and site specific objectives of multiple resource management. Activity level management prescriptions or WQRP prescription(s) would be developed and implemented as in Alternative A. Priority would generally be guided by the stream/watershed priority list (Table 2.3.1) along with consideration of new circumstances, emerging opportunities or cooperative management opportunities. Management would include passive and active measures relative to site specific emphasis of multiple resource management objective(s). Planting and other manipulation of riparian/wetland vegetation may occur to accelerate distribution and diversity of riparian vegetation. Riparian vegetation planting and/or manipulation may be protected through installation of temporary fence exclosures/cages. Restoration of adjacent upland vegetation communities that influence riparian/wetland areas would include establishment and management for a range of vegetation, native to desirable nonnative, relative to site specific emphasis of multiple resource management objective(s).

Alternative E

Activity level management prescriptions or WQRP prescription(s) would be developed and implemented as in Alternative A. Priority would generally be guided by the stream/watershed priority list (Table 2.3.1) along with consideration of new circumstances or cooperative management opportunities. Grazing and recreation management in riparian areas would provide maximum use while maintaining or progressing toward PFC, WQRP, or activity level plan objectives. Upland communities adjacent to riparian areas would be managed as in the Proposed RMP, with an emphasis on providing sustainable livestock forage, soil stability, and aesthetics along travel corridors and developed recreation sites. Riparian restoration would include passive and active measures to achieve activity level or WQRP objectives. This may include active planting and/or manipulation and temporary protection of riparian vegetation as discussed in the Proposed RMP and Alternative C. Roads in riparian areas would be managed and developed to promote commodity and public uses within established laws and regulations.

Objective 3. Manage riparian/wetland areas to maintain, restore, or improve soil moisture content and retention of alluvial ground water to augment base flow conditions during warm summer months.

Management Common to All Alternatives

BMPs would be prescribed and implemented at the activity plan level to maintain, restore, or improve floodplain function and process. The ODFW and the BLM would coordinate on the management of beaver populations on public lands.

Alternatives A and B

Beaver populations would be allowed to expand naturally on public lands as habitat conditions dictate.

Alternative C

Natural expansion and/or reintroduction of beaver would be allowed into suitable habitat on public lands.

Proposed RMP

Management under this alternative would be the same as Alternative C except that the BLM would recommend to the ODFW the removal of beaver from public lands if suitable habitat is not available or if economic harm or ecological damage is occurring.

Alternative E

Under this alternative, beaver populations would be allowed to expand naturally on public lands as habitat conditions dictate. The BLM would recommend to the ODFW the removal of beaver from public lands if suitable habitat is not available or economic harm or ecological damage is occurring.

2.5.2.2 Monitoring

See Appendix Q.

2.5.3 Woodlands

2.5.3.1 Goal 1 - Maintain or improve ecological integrity of old growth juniper woodlands.

2.5.3.1.1 Management Framework

Western juniper is a long lived tree species capable of living 1,000 years or more. Historically, western juniper occupied rocky ridge tops, shallow soil areas, and other areas where surface vegetation was too sparse to carry fire. Old growth western juniper woodlands are best described on the basis of the presence of pre-European settlement trees (greater than 120 years before present [ybp]) and structural characteristics such as standing and down dead trees, decadent living trees, bole cavities, stripbark, and branches covered with lichens. These stands accounted for less than three percent of the western juniper woodlands across eastern Oregon. Old growth western juniper stands occupy less than one percent of the total Planning Area. The majority of western juniper expansion has primarily been on more productive plant communities; however, the number of trees in old growth stands has also increased over the last 120 years. While special characteristics of old growth woodlands provide habitat for plant and wildlife species, the recent dramatic increase in trees and invasive plants has increased the risk of unplanned wildland fire.

Fire was not a common occurrence in old growth western juniper woodlands. Historically, most fires were confined to small areas or single trees due to the sparse ground vegetation. Once every 100 to 200 years, climatic and vegetation conditions were such that large scale fires burned through these stands. These fires would kill some mature individuals and most of the younger trees. Recently, fire suppression, reduction of fine fuels by grazing, and subtle climatic shifts have allowed numerous small western juniper trees to become established. The increase in western juniper has been at the expense of the associated woody and herbaceous plants.

Western juniper woodlands are not classified as commercial forests. The bole morphology and numerous branches make juniper difficult to work with and desirable only for ornamental wood working. However, opportunities do exist for other nontraditional commercial uses such as firewood and biofuels.

2.5.3.1.2 Management Direction by Alternative

Objective. Maintain or improve late seral stage ecological characteristics in old growth western juniper woodlands.

Alternative A

Younger (less than 120 years old) western juniper trees would be cut from old growth juniper stands. Younger trees would be cut using chainsaws or other mechanical equipment. All lightning- and human-caused wildland fires in old growth western juniper stands would continue to be suppressed.

Alternative B

Natural processes would be allowed to define vegetation composition and structure in old growth woodlands. Wildland fire use management would occur on lightning-ignited fires that have low threat to life and property, and are determined to benefit resources in and adjacent to the fire.

Alternative C

If no threat to life or substantial resource values is present, wildland fires would be allowed to burn in old growth western juniper stands, restoring fire to its historic role in the ecosystem. Up to 90 percent of the post-European settlement western juniper trees may be individually removed from old growth stands using terra torches or other ignition devices.

Proposed RMP

Up to 90 percent of the younger (less than 120 years old) western juniper trees in old growth western juniper stands would be cut. The method of cutting would be determined based on project and site specific analysis. When appropriate, markets would be developed for byproducts of western juniper removal, such as secondary wood products (e.g. fence posts), biomass fuels for electricity generation, and firewood. Unplanned wildland fires occurring in old growth western juniper woodlands would be evaluated for resource benefits. If no threat to life or private property exists, the wildland fire would be managed for resource benefits.

Alternative E

Younger (less than 120 years old) western juniper trees would be mechanically cut from old growth juniper stands. Markets would be developed for byproducts of western juniper cutting, such as secondary wood products (e.g. fence posts), biomass fuels for electricity generation, and firewood. Unplanned wildland fires would be evaluated for resource benefit. If no threat to life or private property exists, the wildland fire would be managed for resource benefit.

2.5.3.2 Goal 2 - Maintain, restore, or improve the ecological integrity of mountain mahogany and quaking aspen stands/groves.

2.5.3.2.1 Management Framework

Quaking aspen and mountain mahogany communities comprise a relatively small percentage of the landscape, but contribute substantially to the biodiversity of plants and animals in the Great Basin. Quaking aspen plant communities, especially below 7,000 feet, were influenced by fire. These plant communities are often found in productive deep soil areas and in a complex mosaic of mountain big, mountain shrub, and low sagebrush plant communities. Quaking aspen plant communities occupy just over one percent of the total Planning Area. However, quaking aspen plant communities provide important habitat for many wildlife species.

Fire played a much less important role in the development of mountain mahogany stands. Mountain mahogany is often found on shallow soil sites in areas where long periods of time can elapse between fire events. Across the Planning Area mountain mahogany occupies sites similar to old growth western juniper. Mountain mahogany also has a very limited distribution, occupying less than one percent of the Planning Area. Little information is available about the ecology of mountain mahogany and the associated plant communities.

These two plant communities share a dramatic increase in western juniper over the last 120 years. Western juniper is an effective competitor for resources. Recent expansion of western juniper into quaking aspen and mountain mahogany stands has been at the expense of the associated vegetation. Western juniper has encroached some stands to the point that all associated woody vegetation has been replaced. This total type conversion alters the habitat for many plant and animal species. However, some areas encroached by western juniper still have varying degrees of quaking aspen or mountain mahogany remaining. Treatment of these stands, especially small isolated pockets, may require protection from wild and domestic larger herbivores until new suckers or plants can reach heights above the browse line.

2.5.3.2.2 Management Direction by Alternative

Objective. Reduce the component of western juniper and other associated woody plant species in quaking aspen and mountain mahogany stands.

Alternative A

Western juniper would continue to be mechanically removed from quaking aspen and mountain mahogany stands where fire is inappropriate. Where western juniper has become established and has the potential to dominate aspen stands, either the stands would be rehabilitated by prescribed burning, or the stand would be burned after removing the juniper. All nonprescription wildland fires in quaking aspen and mountain mahogany stands would continue to be suppressed.

Where recovery could be suppressed by browsing livestock and/or wildlife, treated mountain mahogany and quaking aspen stands would be fenced. In general, this pertains to smaller stands or to stands where higher than normal browsing pressure could be expected to occur. Some large stands might not need to be fenced in order for regeneration to occur.

Alternative B

Allow natural processes to define vegetation composition and structure in quaking aspen groves and mountain mahogany stands. Wildland fire use management would occur on lightning fires that have low threat to life and property, and that are determined to benefit resources in and adjacent to the fire.

Alternative C

Western juniper would be cut from quaking aspen and mountain mahogany stands. Where western juniper has become established and has the potential to dominate aspen stands, either the stands would be rehabilitated by prescribed burning, or the stand would be burned after removing the juniper. Wildland fires would be allowed to burn in quaking aspen and mountain mahogany stands that have been invaded by western juniper in order to reduce the influence of western juniper.

Where recovery could be suppressed by browsing livestock and/or wildlife, treated mountain mahogany and quaking aspen stands would be fenced. In general, this would pertain to smaller stands or to stands where higher than normal browsing pressure could be expected to occur. Some large stands might not need to be fenced in order for regeneration to occur.

Proposed RMP

Western juniper would be cut from quaking aspen and mountain mahogany stands where appropriate. Markets would be encouraged for byproducts of western juniper removal. Some targeted uses could be fence posts, molding, biomass for cogeneration, and firewood.

Where western juniper has become established and has the potential to dominate aspen stands, the stands would be rehabilitated by prescribed burning where possible. Naturally-ignited wildland fires in quaking aspen and mountain mahogany stands will be evaluated for resource benefits. Fires that do not threaten human life, areas of significant resource values, or private lands with no established written agreements will be managed for resource benefits.

Where recovery of quaking aspen or mountain mahogany could be suppressed by browsing livestock and/or wildlife, treated mountain mahogany and quaking aspen stands would be fenced. In general, this would pertain to smaller stands or to stands where higher than normal browsing pressure could be expected to occur outside of the wilderness boundary. Some large stands might not need to be fenced in order for regeneration to occur.

Alternative E

Western juniper would be mechanically removed from quaking aspen and mountain mahogany stands. Markets would be encouraged to utilize the byproducts of western juniper removal. For example, markets for fence posts, biomass for cogeneration, and firewood could be encouraged in the local community.

Where western juniper has become established and has the potential to dominate quaking aspen stands, prescribed fire would be used to reduce the influence of western juniper, or the stand would be mechanically treated and then burned to achieve the same goal. Burned areas would be reseeded with native and introduced forage species.

Wild and domestic herbivores would be allowed access to additional forage produced by cutting and/or burning mountain mahogany and quaking aspen stands.

2.5.3.3 Goal 3 - Manage woodland habitat so that the forage, water, cover, structure, and security necessary to meet the life history requirements of woodland dependent and woodland associated wildlife species are available on public lands.

2.5.3.3.1 Management Framework

Over 90 percent of the current western juniper woodlands established since the 1870s. The prehistoric record indicates that the range of western juniper woodlands has fluctuated greatly over the last 5,000 years. Historically, western juniper increased its range during mild, wet periods. As fire frequency increased at the end of these periods, the range of western juniper contracted. Recent expansions have occurred under different climatic conditions and in more productive and deeper soil sites than the previous expansions.

Western juniper is an effective competitor for resources. Recent expansion of western juniper into more productive big sagebrush, low sagebrush, and riparian plant communities has been at the expense of the associated vegetation and animal communities. The result of this encroachment has been a reduction in the total number of species present and an increase in the amount of mineral soil exposed. Forage for livestock and wildlife has also been reduced as western juniper density and cover has increased. Sagebrush obligate wildlife species have experienced a reduction in habitat due to western juniper encroachment. A similar trend has occurred in riparian plant communities where western juniper has replaced riparian woody and herbaceous plants.

2.5.3.3.2 Management Directions by Alternative

Objective. Reduce the influence of post settlement (stands with trees less than 120 years old) western juniper to restore riparian and sagebrush habitats.

Alternative A

Post settlement juniper trees (less than 120 years old) would be cut from riparian areas and sagebrush habitats. Human-ignited prescribed broadcast fire would be used to reduce the influence of western juniper on sagebrush and riparian habitats. All unplanned wildland fires would be suppressed with the appropriate management actions.

Alternative B

Naturally-ignited fires would be evaluated for risk to public and firefighter safety, threats to private property, and resource damage. Fires with low risks to firefighter and public safety, private property, and resources would be managed for resource benefits. Prescribed fires would be used to reduce the influence of western juniper on sagebrush and riparian plant communities.

Alternative C

All younger western juniper trees (less than 120 years old) would be cut from riparian areas and sagebrush habitats. Naturally ignited fires would be evaluated for risk to public and firefighter safety, threats to private property, and resource damage. Fires with low risks to firefighter and public safety, private property, and resources would be managed for resource benefits.

Proposed RMP

Post settlement trees (less than 120 years old) would be cut in riparian areas and sagebrush plant communities. Naturally-ignited fires would be evaluated for risk to public and firefighter safety, threats to private property with no written agreements, and significant resource values. Fires that do not threaten human life, private land without written agreements, and other resource values would be managed for resource benefits when appropriate. Additional considerations for suppression action would be the number of fires burning on the Burns Interagency Fire Zone, sub-geographic area, state, and nation. At certain times, the number of concurrent fires may be large enough that suppression action is required because few firefighting resources are available. Human-ignited prescribed fires would be used to reduce the influence of western juniper on sagebrush and riparian plant communities. Application of fire will occur after site specific analysis.

Alternative E

Post settlement trees (less than 120 years old) would be cut from riparian areas and sagebrush plant communities. Naturally ignited fires would be evaluated for risk to public and firefighter safety, threats to private property, and resource damage. Fires with low risks to firefighter and public safety, private property, and resources would be managed for resource benefits. Human-ignited prescribed fires would be used to reduce the influence of western juniper on sagebrush and riparian plant communities. Local markets would be encouraged to utilize byproducts of western juniper removal.

2.5.4 Wildlands Juniper Management Area

2.5.4.1 Goal - Manage the WJMA for the purposes of experimentation, education, interpretation, and demonstration of active and passive management intended to restore the historic fire regime and pre-settlement native vegetation communities on Steens Mountain, compatibly with preservation of desirable juniper woodland ecological values in nonexperimental areas.

2.5.4.1.1 Management Framework

The restoration of historic fire regimes in the CMPA is specified in the Steens Act and discussed elsewhere under Fire Management. The WJMA was established by the Steens Act in order to provide an opportunity to demonstrate current management actions and evaluate the applicability of new or untested management techniques. In order to make the WJMA most useful, plant and animal communities should be inventoried in order to provide generalized baseline information and to assist in planning demonstration areas and field experiments.

Common to all objectives is the establishment of a science advisory group, which will help set direction for research and demonstration conducted within the WJMA. A science advisory council may be appointed by the Secretary at the request of the Designated Federal Official or the SMAC. This would be a team of respected, knowledgeable, and diverse scientists to provide advice on questions relating to the management of the CMPA.

2.5.4.1.2 Management Direction by Alternative

Objective 1. Establish a series of demonstration areas within the 3,267-acre WJMA for technology transfer and public education. Evaluate different treatments and management strategies for plant communities dominated by western juniper.

Management Common to All Alternatives

Temporary fences would be constructed to protect demonstration areas within the WJMA where livestock grazing is outside the scope of the evaluation. Every effort would be made to mitigate any loss of forage resource to the permittee. Naturally-ignited fires that occur within the boundary of the WJMA or threaten the boundary will be suppressed to protect long-term activities.

Alternative A

Livestock grazing would continue in the Frazier Field Pasture.

Plant and animal communities present in the WJMA would be inventoried.

Alternative B

There would be no livestock grazing in the Frazier Field Pasture.

Plant and animal communities present in the WJMA would be inventoried. Areas would be established to demonstrate and evaluate the effects of different treatments (fire, cutting, or other strategies) on western juniper and on the recovery or rehabilitation of native plant communities. Interpretive sites would be established at the boundary of the WJMA identifying the management area, its intent, and eventually some experimental results.

Proposed RMP and Alternatives C, and E

Livestock grazing would continue in the Frazier Field Pasture.

Plant and animal communities present in the WJMA would be inventoried. Areas would be established to demonstrate and evaluate the effects of different treatments (fire, cutting, or other strategies) on western juniper and on the recovery or rehabilitation of native plant communities. Interpretive sites would be established at the boundary of the WJMA identifying the management area, its intent, and eventually some experimental results.

2.5.4.2 Monitoring

See Appendix Q.

2.5.5 Rangelands

2.5.5.1 Goal 1 - Maintain, restore or improve the integrity of desirable vegetation communities including perennial, native, and desirable introduced plant species. Provide for their continued existence and normal function in nutrient, water, and energy cycles.

2.5.5.1.1 Management Framework

Beginning in the 1960s, awareness began to evolve concerning the importance of public lands for the maintenance of biological diversity. The passage of the FLPMA and PRIA provided objectives and priorities for the management of vegetation resources on public lands. Across the landscape, the long-term goal of vegetation management is to improve or maintain rangeland condition to the DRC that meets management objectives.

2.5.5.1.2 Management Direction by Alternative

Objective 1. Maintain or restore native vegetation communities through sound landscape management practices.

Proposed RMP and Alternative A

Maintain or improve ecological status of native plant communities.

Alternative B

Natural processes would define the vegetation composition across the landscape.

Alternative C

Natural values associated with the diverse composition and structure of native vegetation would be emphasized. Emphasis on commodity production of herbaceous and shrubby vegetation would be minimized.

Alternative E

The production of native herbaceous and shrubby vegetation for commodity uses would be emphasized within the constraints of other resource management objectives.

Objective 2. Manage desirable nonnative seedings to meet resource objectives.

Alternative A

Nonnative seedings (dominated by species such as crested wheatgrass) would be managed or manipulated to maintain vegetation composition and to meet S&Gs. In Greater sage-grouse habitat or deer winter range or both, native vegetation and diversity would be maintained or restored through interseeding of native plant species on approximately 200 acres of nonnative seedings. Brushbeating or disking in a mosaic pattern would be allowed on 50 percent of nonnative seedings where brush cover is high.

Alternative B

Natural processes would define the vegetation composition in nonnative seedings.

Alternative C

Actions to diversify structure and composition of selected nonnative seedings would be implemented, with emphasis on natural values and other resource objectives, such as reestablishment of native plant species. In Greater sage-grouse habitat or deer winter range or both, interseeding, preferably with locally obtained seed, to establish native plant species on approximately 20,000 acres of nonnative seedings throughout the Planning Area would be utilized where vegetative species diversity is low. Low species diversity means seeded areas that are predominantly crested wheatgrass, or that have reverted to cheatgrass dominance, or few herbaceous plants with an overstory of sagebrush. The emphasis would be on reestablishing native species, but desirable nonnative species could be used in the seeding mix where appropriate. Livestock grazing could be used to suppress plant competition and allow sagebrush establishment. In areas to be

reseeded, coordination with permittees, the ODFW, and the USFWS would occur to set livestock grazing prescriptions on a site specific basis. Emphasis of this project would be the seedings on the north and west sides of Steens Mountain. Brushbeating of sagebrush in a mosaic pattern would be allowed on 50 percent of seeded areas where brush cover is high.

Proposed RMP

Actions to diversify structure and composition of selected nonnative seedings would be implemented when consistent with other resource objectives. In Greater sage-grouse habitat or deer winter range or both, interseeding, preferably using locally obtained seed, to establish native plant species onto approximately 10,000 acres of nonnative seedings throughout the Planning Area would be utilized where vegetative species diversity is low. Low species diversity means seeded areas that are predominantly crested wheatgrass, or that have reverted to cheatgrass dominance, or few herbaceous plants with an overstory of sagebrush. Other desirable nonnative species could be used in the seeding mix. Livestock grazing could be used to suppress competition and allow sagebrush establishment. In areas to be reseeded, coordination with permitees, the ODFW, and the USFWS would occur to set livestock grazing prescriptions on a site specific basis. Emphasis of this project would be the seedings on the north and west sides of Steens Mountain. Brushbeating of sagebrush in a mosaic pattern would be allowed on 50 percent of seeded areas where brush cover is high.

Alternative E

Existing nonnative seedings presently in poor or fair condition would be restored. New seeding in areas capable of additional biomass production would be established. In Greater sage-grouse habitat or deer winter range or both, interseeding to establish native and other desirable nonnative plant species onto approximately 5,000 acres of nonnative seedings throughout the Planning Area would be utilized where vegetative species diversity is low. Low species diversity means seeded areas that are predominantly crested wheatgrass, or that have reverted to cheatgrass dominance, or few herbaceous plants with an overstory of sagebrush. Livestock grazing would be used to suppress competition and allow sagebrush establishment. In areas to be reseeded, coordination with permittees, the ODFW, and the USFWS would occur to set livestock grazing prescriptions on a site-specific basis. Emphasis of this project would be the seedings on the north and west side of Steens Mountain. Brush beating of sagebrush in a mosaic pattern would be allowed on 75 percent of seeded areas where brush cover is high.

Objective 3. Rehabilitate plant communities that do not have the potential to meet the DRC through management.

Alternative A

Vegetation manipulation projects would be implemented under this alternative, consistent with existing management objectives. Areas burned by wildland fire would be rehabilitated to protect soil, water, and vegetation resources.

Alternative B

Under this alternative, natural processes would determine vegetation composition. Wildland fire areas would not be rehabilitated unless noxious weeds or other undesirable weedy plant species have the potential to dominate the site.

Alternative C

Plant communities that do not meet the DRC due to dominance by undesirable weedy species or invasive juniper would be rehabilitated utilizing native plant species.

Proposed RMP

Plant communities that do not meet the DRC due to dominance by undesirable weedy species or invasive juniper would be rehabilitated utilizing native and nonnative plant species where appropriate.

Alternative E

Plant communities that do not meet the DRC due to dominance by undesirable weedy species or invasive juniper would be rehabilitated utilizing species that would provide optimal forage and vegetative cover.

Objective 4 - Increase species and structural diversity at the plant community and landscape levels in the big sagebrush communities. Provide multiple successional stages within the landscape.

Alternative A

Prescribed fire and mechanical removal of western juniper would be used to create a mosaic of multiple successional stages, reduce the dominance of woody vegetation, and release suppressed desirable plant species.

Alternative B

Wildland fire would be utilized to create a mosaic of multiple successional stages, reduce the dominance of woody vegetation, and release suppressed desirable plant species.

Alternative C

Wildland fire and mechanical removal of western juniper would be utilized on selected sites to create a mosaic of multiple successional stages, reduce the dominance of woody vegetation, and release suppressed desirable plant species.

Proposed RMP and Alternative E

Prescribed fire, and all wildland fire, and mechanical removal of western juniper would be utilized to create a mosaic of multiple successional stages, reduce the dominance of woody vegetation, and release suppressed desirable plant species.

2.5.5.2 Goal 2 - Manage rangeland habitats so that forage, water, cover, structure, and security necessary to meet the life history requirements of wildlife are available on public lands.

2.5.5.2.1 Management Framework

With the passage of the FLPMA and PRIA, objectives and priorities for the management of public land vegetation resources were more clearly defined. Guidance contained in 43 CFR 4180 of the regulations directs public land management toward the maintenance or restoration of the physical function and biological health of vegetative ecosystems. The S&Gs (USDI 1997a) also provide guidance for the management of plant communities with relation to rangeland condition. This goal would maintain and improve the condition in plant communities that provide wildlife habitat, recreation, forage, scientific, scenic, ecological, and water and soil conservation benefits for consumptive and nonconsumptive uses. The long-term goal of vegetation management across the landscape is to maintain or improve rangeland condition to the DRC, which meets management objectives. Numerous wildlife species (e.g. Greater sage-grouse, mule deer, pygmy rabbits, sage sparrows, sage thrasher, other migratory birds and small mammals) depend on native upland sagebrush steppe habitats to meet life history needs. In managing uplands, the BLM needs to consider the consequences and relationships of management to the life history needs of wildlife.

2.5.5.2.2 Management Direction by Alternative

Objective 1. Manage big sagebrush, quaking aspen, and western juniper plant communities to meet habitat requirements for wildlife.

Alternative A

Variable desired conditions of big sagebrush cover would be determined on a site-by-site basis to benefit game and nongame species.

Alternative B

Natural processes would be allowed to determine the future condition of wildlife habitat in big sagebrush, quaking aspen, and western juniper plant communities.

Alternative C

Big sagebrush, quaking aspen, and western juniper plant communities would be managed for the benefit of all wildlife and to meet the DRC in all habitats throughout the Planning Area.

Proposed RMP

Big sagebrush, quaking aspen, and western juniper plant communities would be managed for the benefit of all wildlife and to meet the DRC in most habitats throughout the Planning Area.

Alternative E

Big sagebrush, quaking aspen, and western juniper habitat types would be managed where economically important wildlife are present. Big sagebrush would be reestablished where economically important game species are present.

Objective 2. Manage big sagebrush communities to meet the life history requirements of sagebrush dependent species.

Alternative A

Variable desired conditions of big sagebrush cover would be determined on a case-by-case basis in cooperation with the ODFW to provide mosaics of sagebrush cover on portions of big game habitat. Limited emphasis would be placed on specifically providing habitat for nongame wildlife species. Crucial big game and Greater sage-grouse habitat would be protected from large scale vegetation treatment projects or wildland fires.

Alternative B

Future big sagebrush conditions would be variable and would be determined by natural processes.

Alternative C

Big sagebrush habitat would be managed for shrub cover, structure, and forage values for the benefit of game and nongame wildlife. The DRC would include shrub cover values that meet or exceed the requirements described in Wildlife Habitats in Managed Rangelands (1984) and big sagebrush distribution over a large enough area to avoid the adverse impacts of habitat fragmentation. The DRC would strive for big sagebrush overstories that emphasize the presence of mature, light- to moderately-stocked shrub canopies capable of supporting diverse herbaceous understories and that are present in a variety of spatial arrangements important to wildlife. This would apply to all native range or seeded areas in big sagebrush habitats throughout the Planning Area.

Proposed RMP

Same as Alternative C, except that the DRC would apply to most areas in big sagebrush habitat throughout the Planning Area.

Alternative E

Big sagebrush habitat would be reestablished on native rangelands or seedings where economically important wildlife are present.

2.5.5.3 Monitoring

See Appendix Q.

2.5.6 Noxious Weeds

2.5.6.1 Goal - Control the introduction and proliferation of noxious weeds and reduce the extent and density of established populations to acceptable levels.

2.5.6.1.1 Management Framework

The FLPMA and PRIA direct the BLM to "manage public lands according to the principles of multiple-use and sustained yield" and to "manage the public lands to prevent unnecessary degradation…so they become as productive as feasible." The introduction and spread of noxious weeds and undesirable plants within the Planning Area contributes to the loss of rangeland productivity, increased soil erosion, reduced species and structural diversity, loss of wildlife habitat, and in some instances may pose a threat to human health and welfare. The Carlson-Foley Act (Public Law [PL] 90-583), the Federal Noxious Weed Act (PL 93-629), and the Burns District's Integrated Management Program EA direct noxious

weed inventory and control on public lands in the Planning Area. In the future, additional weed management direction will come from the new national Vegetation Management EIS, which is currently being developed. Protection of natural resource values depends on educating people about the negative impacts of weeds, and the actions, which agencies and individuals can take to prevent introduction and establishment of invasive species.

The Burns District Noxious Weed Management Program addresses the dynamic nature of noxious weeds such as the increasing number of species, changing conditions of infestations, and changing technologies. Currently, 18 noxious weed species are known to occur within the AMU, infesting 1,457 acres. There are currently 17 noxious weed species known to occur within the CMPA, infesting 336 acres. Selection of the appropriate control method is based on such factors as the growth characteristics of the target species, size and location of infestation, accessibility/feasibility of equipment, potential impacts to nontarget species, human use of the area, effectiveness of the treatment on target species, and cost. In addition, all BLM authorized activities are evaluated for their potential to spread or cause new infestations. If necessary, proposed activities shall be mitigated so that weed establishment would be minimal.

Depending on the plant's characteristics, control methods may be used individually or in combination and may be utilized over several years. Control treatments may include cultural, mechanical, chemical, or biological methods. Due to the length of seed viability, annual germination of seed from previous years, and the characteristics of certain plants, treatment could occur annually for a period of ten or more years. Since weed infestations vary annually due to new introductions, spread of existing infestations, and results of prior treatments, annual site specific reviews of known locations would be conducted prior to initiating weed treatment activities.

Herbicides that may be used are those approved in the "Vegetation Treatment on BLM Lands in Thirteen Western States EIS" (1991b), or any that are approved through an amendment or other agency approval process (see Appendix H for the current list of approved chemicals). Application would take place only in accordance with the manufacturer's label and by qualified/certified applicators. Methods of application include wiping or wicking, backpack spraying, spraying from a vehicle with a handgun or boom, aerial spraying, or other approved methods.

Noxious weeds occurring in special management areas, including areas with T&E species/habitat, would be treated with methods to protect resource values and in accordance with the provisions of the Burns District's Integrated Management Program EA directing weed management.

2.5.6.1.2 Management Direction by Alternative

Objective 1. Treat noxious weeds and inventory for new infestations using the most effective means available, as outlined in the Burns District's Integrated Management Program EA/Decision Record.

Management Common to All Alternatives

Noxious weed prevention and control would continue to be a priority in all Alternatives. Weeds would be controlled in an integrated weed management program, which includes prevention, education, and cultural, physical, biological, and chemical treatments. Preventive measures such as public education and livestock and wildlife management would be employed to maintain or promote desirable vegetation cover and reduce the distribution and introduction of noxious weed seed and plant parts. Mechanical and manual control methods and burning treatments would physically remove noxious weeds and unwanted or invasive vegetation; biological controls would introduce and cultivate factors such as insects and pathogens that naturally limit the spread of noxious weeds; and chemical treatments using approved herbicides would be applied where mechanical or biological controls are not feasible. Periodic inventories would detect new infestations. Monitoring the extent of known infestations is the key to controlling or eradicating noxious weeds.

Alternative A

The application of approved noxious weed control methods including mechanical, biological, and chemical treatments would be continued through integrated management. Control on disturbed areas such as roads, ROWs, waterholes, and recreational sites would be emphasized, as would inventories to detect new infestations.

Alternatives B and C

Only high priority areas of noxious weeds would be treated in order to protect high quality natural resource values and adjacent private land. Manual or biological control methods would be preferred. Inventories for noxious weeds would increase to provide maximum detection of new infestations.

Proposed RMP and Alternative E

Integrated management would be implemented for the control of noxious weeds. Control on disturbed areas such as roads, ROWs, waterholes, and recreational sites would be emphasized. Priority would be given to lands with high quality natural resource values. Emphasis would be on prevention, restoration, research, and expanded efforts to inventory and detect new infestations.

Objective 2. Create public awareness on how to utilize public lands without inadvertently spreading noxious weeds.

Alternative A

Public education concerning noxious weeds would continue in the local area.

Proposed RMP and Alternatives B, C, and E

Public education concerning noxious weeds would be expanded to include areas outside of Harney County.

Objective 3. Maintain partnerships with local groups and government agencies to combine efforts in the control and prevention of noxious weed infestations.

Management Common to All Alternatives

The Harney County Weed Management partnership would continue under all of the alternatives.

2.5.6.2 Monitoring

See Appendix Q.

2.6 Fish and Wildlife

2.6.1 Goal – Provide diverse, structured, resilient, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms.

2.6.1.1 Management Framework

Section 102.8 of the FLPMA states that the policy of the United States is to manage public land in a manner that would protect the quality of multiple resources and provide food and habitat for fish, wildlife, and domestic animals. The PRIA directs the BLM to improve rangeland conditions with due consideration given the needs of wildlife and their habitats.

The character of vegetation, including arrangements, densities, and age classes, greatly influences fish and wildlife habitat quality and productivity. Since vegetation character can vary in response to federal land use authorizations, the BLM considers the consequences to the health of fish and wildlife habitat of various land uses such as grazing and mining, and treatments such as burning and seeding.

The BLM's role in the management of fish and other aquatic resources is to provide the habitat that supports these resources. Aquatic habitat values are products of the attributes and processes of properly functioning riparian and aquatic systems at a desired ecological status. Therefore, the maintenance, restoration, or improvement of aquatic habitat to support these resources is primarily relative to the alternatives identified under the Water Resources, Vegetation, and Special Status Species sections. Species manipulation, such as introduction or removal, is under the authority of the ODFW and the USFWS.

Wildlife must have a reasonable amount of protection from adverse impacts associated with human disturbances and most human activities. This is especially true during breeding seasons and when wildlife use winter ranges.

The ODFW manages wildlife species populations through management objectives specified in their respective management plans; the BLM manages adequate habitat to support these numbers. The BLM and the ODFW will work cooperatively to benefit the management of wildlife and wildlife habitat as described in the MOU of 2001 between the two agencies. Bighorn sheep have been reintroduced and elk have expanded their range in the Planning Area, while pronghorn numbers have remained fairly stable and deer numbers have decreased. Changes in numbers of wildlife depend on availability, quality and quantity of seasonal and year long habitat, and other factors.

To allow for transplanting or reestablishment of wildlife into suitable habitat where they were found previously, BLM Manual 1745, "Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants" (1992) states that "Decisions for making introductions, transplants, or reestablishments should be made as part of the land use planning process...." Recommendations for transplants of wildlife onto or removal from public lands would be coordinated with the ODFW.

2.6.1.2 Management Direction by Alternative

Objective 1. Maintain, restore, or improve habitat.

Management Common to All Alternatives

Maintenance, restoration, or improvement of habitat to support these resources is primarily relative to the alternatives identified under the Water Resources, Vegetation, and Special Status Species sections. Fish and wildlife habitat management and monitoring would be coordinated with the ODFW, DEQ, USFWS, and other cooperators, as appropriate.

Management of wildlife species and habitat in the Steens Mountain Wilderness will be conducted in accordance with the Steens Act, the Wilderness Act and Appendix B of House Report 101-405 of the 101st Congress. MDRG analysis will be conducted on all actions.

Alternative A

Single species oriented management would be emphasized in most habitats.

Approximately 9,000 acres of deer winter range in unsatisfactory condition would be reseeded with sagebrush and a mix of other native and nonnative species in coordination with the USFWS, ODFW, and permittees. Opportunities for improvements or restoration of fish and wildlife habitat would be identified and undertaken, such as vegetation manipulation and water developments.

Alternative B

This alternative assumes that habitat conditions would be determined by the consequences of natural events. The emphasis would be on managing self-sustaining native species.

Where appropriate, at least 9,000 acres of deer winter range would be reseeded by aerial application. Opportunities would be identified and undertaken for improvements or restoration of fish and wildlife habitat through the use of wildland fire, fence removal, and other mainly passive methods.

Alternative C

Equal emphasis would be placed on habitat requirements for game and nongame fish and wildlife. To the extent possible and practical, fish and wildlife community connectivity and interrelationships would be emphasized in most habitats. This approach would stress landscape or ecosystem management and would be distinctly different from single species management emphasis.

The emphasis would be on managing self-sustaining native species.

Throughout the Planning Area, approximately 20,000 acres of nonnative seedings and all the native vegetation in deer winter range where vegetative species diversity is low would be interseeded to establish native plant species. Other desirable nonnative plant species may be used on a limited basis. Low species diversity means seeded areas that are predominantly crested wheatgrass, or that have cheatgrass dominance, or few herbaceous plants with an overstory of sagebrush. Livestock grazing could be used to suppress competition and allow sagebrush establishment. In areas to be reseeded, coordination with permittees, the ODFW, and the USFWS would occur to set livestock grazing prescriptions on a site specific basis.

Opportunities for improvements or restoration of wildlife habitat through the use of wildland fire, other vegetation manipulations, limited fence removal, water developments, etc., would be identified and undertaken.

Proposed RMP

Equal emphasis would be placed on habitat requirements for game and nongame fish and wildlife. To the extent possible and practical, fish and wildlife community connectivity and interrelationships would be emphasized in most habitats. This approach would stress landscape or ecosystem management and be distinctly different from single species management emphasis.

Throughout the Planning Area, approximately 10,000 acres of nonnative seedings and most of the native vegetation in deer winter range where vegetative species diversity is low would be interseeded to establish native plant species. Where appropriate, other desirable nonnative plant species could be used. Low species diversity means seeded areas that are predominantly crested wheatgrass, or that have cheatgrass dominance, or few herbaceous plants with an overstory of sagebrush. Livestock grazing could be used to suppress competition and allow sagebrush establishment. In areas to be reseeded, coordination with permittees, the ODFW, and the USFWS would occur to set livestock grazing prescriptions on a site specific basis.

Opportunities would be identified and undertaken for improvements or restoration of fish and wildlife habitat through the use of wildland fire, other vegetation manipulations, water developments, etc. Functional fence removal would not be conducted due to livestock grazing.

Alternative E

Single species oriented management would be emphasized in most habitats.

Throughout the Planning Area, approximately 5,000 acres of nonnative seedings and some of the native vegetation in deer winter range where vegetative species diversity is low would be interseeded to establish native and other desirable nonnative plant species. Low species diversity means seeded areas that are predominantly crested wheatgrass, or that have cheatgrass dominance, or few herbaceous plants with an overstory of sagebrush. Livestock grazing would be used to suppress competition and allow sagebrush establishment. In areas to be reseeded, coordination with permittees, the ODFW, and USFWS would occur to set livestock grazing prescriptions on a site specific basis. Opportunities would be identified for improvements or restoration of fish and wildlife habitat through the use of wildland fire, other vegetation manipulations and water developments. Fence removal would not be conducted due to livestock grazing.

The emphasis of the improvements would be to benefit livestock.

Objective 2. Manage forage production to support wildlife population levels identified by the ODFW.

Alternative A

Forage for wildlife would be allocated at management objective levels; wildlife populations would be allowed to expand naturally or through limited transplants in coordination with the ODFW.

Alternative B

Forage for wildlife would be allocated at greater than management objective levels. Wildlife populations would be allowed to expand naturally.

Alternative C

Forage for wildlife would be allocated at greater than management objective level. Wildlife populations would be allowed to expand naturally or through limited transplants in coordination with the ODFW.

Proposed RMP

Forage for wildlife would be allocated at management objective levels. Wildlife populations would be allowed to expand naturally or through limited transplants in coordination with the ODFW.

Alternative E

Forage for wildlife would be allocated at management objective levels. Wildlife populations would be allowed to expand naturally or through limited transplants. Forage allocation would increase concurrent with improved range conditions and other improvements in coordination with the ODFW.

2.6.2 Monitoring.

See Appendix Q.

2.7 Special Status Species

2.7.1 Goal - Maintain, restore, or improve special status plant populations and animal habitats; manage public lands to conserve or contribute to the recovery of threatened or endangered species; and prevent future Endangered Species Act listings.

2.7.1.1 Management Framework

The ESA mandates management that leads to the conservation or recovery of federally listed T&E species. This Act, as well as BLM policy, encourages management to conserve special status species not currently listed as threatened or endangered.

Section 102.8 of the FLPMA requires that public lands be managed to protect the quality of ecological and environmental values, and where appropriate, to protect their natural condition. The FLPMA further requires that public land be managed to protect the quality of multiple resources and provide food and habitat for fish, wildlife, and domestic animals. Rangeland health regulations identify the need to foster productive and diverse populations and communities of plants and animals.

Most plants and animals assigned to a special status category are limited in their distributions, populations, or habitats and may be at risk over various geographic areas. Where evidence suggests that land uses are adversely affecting special status species not currently listed as threatened or endangered, it is in the public interest to prevent the need for federal listing under the ESA. Listing of a species as threatened or endangered may lead to restrictions on land uses, and under some circumstances may cause adverse socioeconomic impacts to commodity users. In most cases, both socioeconomic and biological benefits are associated with conserving species to avoid federal listing.

Conservation efforts for special status species may include maintenance, restoration, or improvement of habitat through resource management actions relative to the habitat needs or specific circumstances of a species. Both active and passive measures may be developed and implemented to promote suitable habitat condition and to minimize or avoid adverse effects to the species. Two potential limitations to developing and implementing conservation efforts are: 1) the lag between management implementation and the realization of environmental benefits and 2) the fact that physical and biological mechanisms adversely affecting a species are not necessarily fully understood.

Bats are an economically important group due to their impact on insect populations. Many of the bat species present in the Planning Area are special status species. Abandoned mines can be important roosting habitats for bats, but are also subject to disturbance by humans. Gating of mine entrances can protect important bat habitat as well as reduce the possibility of injury to people exploring these old mines.

Numerous wildlife species depend on native upland sagebrush steppe habitats to meet life history needs. In managing uplands, the BLM needs to consider the consequences and relationships of management to the life history needs of wildlife. The Executive Order on the Responsibilities of Federal Agencies to Protect Migratory Birds, and the Greater Sage-Grouse and Sagebrush-Steppe Ecosystem Management Guidelines give direction to protect or restore habitat for these species, many of which are special status species.

Public land supplies a high percentage of the total available and currently unoccupied land suitable for bighorn sheep. As the principle land administrator of habitat capable of supporting bighorn sheep, BLM involvement in this program is necessary. The BLM has a policy and responsibility to cooperate with state agencies to accommodate species management goals to the extent they are consistent with the principles of multiple use management.

Although the ODFW and USFWS retain jurisdiction over special status species populations, the BLM, ODFW and the USFWS cooperatively manage special status species populations and habitats through recovery plans, conservation agreements, and management objectives specified in their respective management plans. The BLM is involved in the development of these plans and manages habitat in cooperation with the other agencies in support of these plans. The BLM and the ODFW will work cooperatively to benefit the management of special status animal species and their habitat as described in the MOU of 2001 between the two agencies. Management of special status species and their habitat in wilderness areas will be conducted in accordance with the Steens Act, the Wilderness Act and Appendix B of House Report 101-405 of the 101st Congress. Minimum Requirement Decision Guide (MRDG) analysis is required and would be conducted on all actions proposed for management of special status species and their associated habitats.

To allow for transplanting or reestablishment of special status species into suitable habitat where they were found previously, BLM Manual 1745, "Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants" (1992) states that "Decisions for making introductions transplants, or reestablishments should be made as part of the land use planning process…." Recommendations for transplants of special status species onto or removal from public lands would be coordinated with the ODFW and the USFWS.

The ODFW has been pursuing a statewide effort to restore bighorn sheep into suitable unoccupied habitat and to increase populations in currently occupied areas. Both the BLM and the ODFW have agency management plans and have coordinated over the years to foster communication between agencies and the public. Although the ODFW has been successfully releasing and managing bighorn sheep on public land since the mid-1960s, current populations and distributions are still considered to be below their potential.

Bighorn sheep are native to eastern Oregon. Their presence contributes to the overall biological diversity and productivity of public land. Public interest in observing bighorn sheep in their natural setting is widespread, and they are highly prized as a big game animal.

2.7.2 Special Status Plant Species

2.7.2.1 Management Direction by Alternative

Objective 1. Manage special status plant species and their habitats so management actions do not contribute to their decline or listing as T&E.

Management Common to All Alternatives

Known populations of special status plants would be monitored periodically to assess their condition and trend. Inventories for new occurrences of special status plants would be completed in areas where public land is disturbed or targeted for disposal. Federal regulations, state laws, and BLM policy mandates the following actions:

- Maintain and improve critical or essential habitat to prevent deterioration and provide recovery for federally listed plant species.
- Maintain, restore, or increase the habitat of candidate, state-listed, and other sensitive plant species to maintain the populations at a level which will avoid endangering the species and the need to list the species by either state or Federal governments.
- Manage so that BLM authorized actions do not result in the need to list special status plant species or jeopardize the continued existence of listed species.
- Increase BLM's knowledge about the status and distribution of special status plant species.

Alternative A

Populations of special status plant species and their habitats are managed so that BLM actions do not contribute to the need to list them as federally threatened or endangered. Conservation agreements are written and implemented for selected species at highest risk. Monitoring and inventory data are collected for selected special status plant species to assess the potential threats to habitat or individual populations.

Alternative B

Natural processes would determine future conditions except for management specified in recovery plans developed for T&E plant species.

Proposed RMP and Alternative C

Special status plant species would be intensively managed to maintain or restore habitats or populations where needed. Conservation Agreements and management plans would be completed for species considered to be at the highest risk for listing. The BLM would participate in the development of recovery plans for listed species if requested by the USFWS. Monitoring and inventory data would be collected for all special status plant species to assess the potential threats to habitat or individual populations.

Alternative E

Special status plant species would be managed so that BLM actions would not contribute to the need to list them as threatened or endangered. Management would consist of providing habitat conditions that meet individual species requirements.

2.7.2.2 Monitoring

See Appendix Q.

2.7.3 Special Status Animal Species

2.7.3.1 Management Direction by Alternative

Objective 2. Conserve special status animal species and the ecosystems on which they depend.

Management Common to All Alternatives

Maintenance, restoration, or improvement of habitat to support these resources is primarily relative to the alternatives identified under Water Resources and Vegetation. Fish and wildlife habitat management and monitoring would be coordinated with the ODFW, DEQ, USFWS, and other cooperators, as appropriate.

The BLM would not undertake management activities that are likely to jeopardize the continued existence of listed species or adversely modify critical habitat pursuant to section 7(a)(2) of the ESA.

Alternative A

Management would emphasize achieving the DRC that maintains, restores, or improves habitats or populations of any special status species regardless of economic importance. The habitats and populations of all special status species would be managed for conservation. Management actions that affect threatened or endangered species would be conducted in accordance with existing and future biological opinions.

Management would provide habitat conditions that meet individual species requirements. Fish and wildlife community goals would generally be secondary to goals for individual species.

A variety of management actions or land use adjustments could be required to maintain, restore, or improve habitat for special status species. Management may include avoidance or mitigation measures to prevent or minimize adverse effects to special status animal species. Restoration or improvement measures could involve specific remedies with the potential for adjustments in ongoing resource management. Due to the variability in habitat use by special status species, management actions could be required within any of the habitat types described in this Proposed RMP/FEIS.

Bat gates would be installed at the entrances to abandoned mines to protect roost sites from disturbances while still allowing bat movement.

Alternative B

Natural processes would be emphasized except for management of critical habitat for federally listed animal species where natural processes are likely to conflict with species conservation or recovery. Management of special status species habitat would primarily be through passive measures associated with development and implementation of other resource management actions and associated themes of this RMP, except where required by law, such as compliance with the ESA, CWA, or Steens Act.

Permanent protection of designated critical habitat for the Borax Lake chub would be pursued through purchase of nonpublic lands within critical habitat currently owned by The Nature Conservancy (TNC) or through establishment of a Conservation Agreement and easement among the BLM, TNC, USFWS and the ODFW to close the area to livestock grazing, mineral/geothermal exploration, and motorized access. The BLM would coordinate development of water quality standards and monitoring with the DEQ, USFWS, ODFW, and TNC concerning habitat and population trends for Borax Lake chub.

Bat gates would be installed at the entrances to abandoned mines. These areas would be withdrawn from mineral entry.

Alternative C

Management of special status species habitat could include active and passive measures associated with development and implementation of other resource management actions and associated themes of this RMP. Active restoration for specific habitat attributes may be developed through watershed assessment or site specific activity plans or both. Where natural processes conflict with or substantially delay conservation, active restoration could be implemented to promote restoration of natural processes.

A variety of management actions or land use adjustments could be required to maintain, restore, or improve habitat for special status species. Management may include avoidance or mitigation measures to prevent or minimize adverse effects to special status animal species. Restoration or improvement measures could involve remedies that lead to adjustments in ongoing resource management. Due to the variability in habitat use by special status species, management actions could be required within any of the habitat types described in this plan.

Permanent protection of designated critical habitat for the Borax Lake chub would be pursued through the purchase of nonpublic lands within critical habitat currently owned by TNC, or through establishment of a Conservation Agreement and easement among the BLM, TNC, USFWS and the ODFW to close the area to livestock grazing, mineral/geothermal exploration, and motorized access. The BLM would coordinate development of water quality standards and monitoring with the DEQ, USFWS, ODFW, and TNC concerning habitat and population trends for Borax Lake chub.

Bat gates would be installed at the entrances to abandoned mines. These areas would be withdrawn from mineral entry.

Proposed RMP

Management of special status species under this alternative would be similar to Alternative C. However, development and implementation of passive and active measures to maintain, restore, or improve specific habitat attributes would be developed through watershed assessment or site specific activity plans, or both, to balance a variety of resource management and uses. Permanent protection of Borax Lake chub critical habitat would be pursued through establishment of a Conservation Agreement or other cooperative agreement among the BLM, TNC, USFWS, ODFW, or other private landowners to manage and protect the area for the conservation or recovery of the species, including closing the area to livestock grazing, off-road travel, and limiting or closing vehicle access. The BLM would coordinate development of water quality standards and monitoring with the DEQ, USFWS, ODFW, and TNC, or other private landowner(s), concerning habitat and population trends for Borax Lake chub.

Bat gates would be installed at the entrances to abandoned mines to protect roost sites from disturbances while still allowing bat movement. Specific critical sites would be considered for withdrawal from mineral entry.

Alternative E

Management of special status species would be conducted through development and implementation of passive and active measures to maintain, restore, or improve specific habitat attributes while promoting commodity production and public uses. Localized protection of habitat, such as riparian exclosures, and mitigation of potential adverse affects to threatened or endangered species would be emphasized. Management would provide habitat conditions that favor

individual special status species. Fish and wildlife community goals would be secondary to goals for individual species. Restoration or improvement of habitat for special status species would focus on game species, and would serve as on-site and off-site mitigation.

Bat gates would be installed at the entrances to abandoned mines to protect roost sites from disturbances, while allowing bat movement.

Objective 3. Manage big sagebrush communities to meet the life history requirements of sagebrushdependent special status species.

Management Common to All Alternatives

Areas used by Greater sage-grouse and other special status species would be identified with the ODFW or the USFWS. Habitat management would be coordinated across agency boundaries.

Alternative A

Variable desired conditions of big sagebrush cover would be determined on a site-by-site basis to benefit special status species. Big sagebrush habitat would be managed in accordance with the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush-Steppe Ecosystem Management Guidelines.

Limited emphasis would be placed on specifically providing habitat for nongame wildlife species. Crucial big game and Greater sage-grouse habitat would be protected from large scale vegetation treatment projects or wildland fires.

Alternative B

Natural processes would be allowed to determine future big sagebrush conditions. To the extent practicable, management would be in accordance with the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush-Steppe Ecosystem Management Guidelines.

Alternative C

Big sagebrush habitat would be managed for the benefit of special status species, and to meet the DRC in all big sagebrush habitats throughout the Planning Area. Big sagebrush habitat would be managed in accordance with the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush-Steppe Ecosystem Management Guidelines.

Proposed RMP

Big sagebrush habitat would be managed for the benefit of special status species and to meet the DRC in most big sagebrush habitats throughout the Planning Area. Big sagebrush habitat would be managed in accordance with the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush-Steppe Ecosystem Management Guidelines.

Alternative E

Big sagebrush would be reestablished where economically important special status species are present. To the extent practicable, management would be in accordance with the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush Steppe Ecosystem Management Guidelines.

Objective 4. Evaluate habitat requirements and conditions for the reintroduction of extirpated species into historic habitat in the Planning Area.

Alternative A

In coordination with the USFWS and the ODFW, a determination would be made whether habitat conditions exist to allow the successful reintroduction of locally or regionally extirpated special status species such as Columbia sharp-tailed grouse and mountain quail. A determination would be made whether habitat improvements, if any, are needed to create suitable habitat for reintroductions.

Alternative B

In coordination with the USFWS and the ODFW, a determination would be made whether habitat conditions exist to allow the successful reintroduction of locally or regionally extirpated special status species such as Columbia sharp-tailed grouse and mountain quail, and other species.

Proposed RMP and Alternatives C and E

In coordination with the USFWS and the ODFW, a determination would be made whether habitat conditions exist to allow the successful reintroduction of locally or regionally extirpated special status species such as Columbia sharp-tailed grouse and mountain quail, and other species. A determination would be made whether habitat improvements, if any, are needed to create suitable habitat for reintroductions.

Objective 5. Maintain, restore, or improve bighorn sheep habitat and allow for maintenance or further expansion of bighorn sheep populations as defined by the ODFW in Oregon's Bighorn Sheep Management Plan.

Management Common to All Alternatives

In the Steens Mountain Wilderness, all actions such as transplants, trapping, distribution of medicine, emergency situations, and maintenance of existing guzzlers would be authorized in accordance with the Steens Act, the Wilderness Act, and Appendix B of House Report 101-405 of the 101st Congress. MRDG analysis would be completed on all actions. Where these same actions occur in WSAs, the WSA IMP would be followed.

Proposed RMP and Alternatives A and E

The BLM would coordinate with the ODFW on population management of bighorn sheep. Transplants, reintroductions, and natural expansion of bighorn sheep would be allowed. Where needed, poor quality habitat in identified historic range would be improved. If the ODFW determines that excess animals are available, transplants out of the herds would be authorized.

Up to ten sites would be identified for construction of low impact, natural appearing water sources or wildlife guzzlers (2000 to 3000 gal capacity) in identified historic habitat.

Bighorn sheep habitat maintenance, restoration, or improvement would be emphasized within existing use areas and proposed reintroduction areas as identified in current land use plans, wildlife habitat management plans, and the ODFW's most current Bighorn Sheep Management Plan. Bighorn sheep pioneering outside the range would be allowed where no disease transmission conflicts exist.

All new grazing applications for domestic sheep and goat permits or proposed conversions of class of livestock from cattle to sheep or goats, will be evaluated for consistency with the BLM "Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats." These guidelines will be implemented where new permits or conversions could occur within or near wild sheep habitats. Cooperative efforts will be made with private landowners and current domestic sheep and goat permittees to reduce the chance of mixing of domestic sheep and goats with wild sheep.

Alternative B

Bighorn sheep management would allow for natural processes to occur. The range expansion of bighorn sheep populations would be determined by natural processes such as population growth and natural dispersal. No reintroductions or transplants would be conducted in identified historic range. Population numbers would be allowed to exceed management objectives, but no transplants out of the herds would be allowed.

Up to five sites would be identified for construction of low impact, natural appearing water sources in identified historic habitat. Fences that restrict bighorn movements and impede access to water would be removed.

Livestock grazing, including domestic sheep and goats, would not be authorized; therefore, a buffer would not be required to minimize disease transmission.

Alternative C

The BLM would coordinate with the ODFW on population management of bighorn sheep. Transplants, reintroductions, and natural expansion of bighorn sheep would be allowed. Population numbers would be allowed to exceed management objectives. Transplants out of the herds would be authorized if the ODFW determines that excess animals are available for removal.

Up to ten sites would be identified for construction of low impact, natural appearing water sources in identified historic habitat.

Bighorn sheep habitat maintenance, restoration, or improvement would be emphasized within existing use areas and proposed reintroduction areas as identified in current land use plans, wildlife habitat management plans, and the ODFW's most current Bighorn Sheep Management Plan. Bighorn sheep pioneering outside the range would be allowed where no disease transmission conflicts exist.

All new grazing applications for domestic sheep and goat permits or proposed conversions of class of livestock from cattle to sheep or goats, will be evaluated for consistency with the BLM "Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats." These guidelines will be implemented where new permits or conversions could occur within or near wild sheep habitats. Cooperative efforts will be made with private landowners and current domestic sheep and goat permittees to reduce the chance of mixing of domestic sheep and goats with wild sheep.

2.7.3.2 Monitoring

See Appendix Q.

2.7.4 Redband Trout Reserve

2.7.4.1 Goal - Manage the RTR to conserve, protect and enhance the Donner und Blitzen population of redband trout, and provide opportunities for scientific research, environmental education, and fish and wildlife oriented recreation.

2.7.4.1.1 Management Framework

The Steens Act mandates the Secretary of the Interior to designate the RTR and administer it consistent with the Wilderness Act and the Wild and Scenic Rivers Act (WSRs Act). Administration of the RTR shall be through consultation with the SMAC and cooperation with the ODFW. The legislation identifies the RTR as consisting of the Donner und Blitzen River in the Steens Mountain Wilderness above its confluence with Fish Creek and the federal riparian lands immediately adjacent to the river, excluding private lands adjacent to the Donner und Blitzen River or its tributaries.

The ODFW has primary responsibility and authority for fish population management in the RTR.

2.7.4.1.2 Management Direction by Alternative

Objective 1. Define the RTR boundary.

Alternative A

The boundaries of the RTR are not currently delineated.

Proposed RMP and Alternatives B and C

The RTR would consist of the public land portion of the Donner und Blitzen River and tributaries upstream of its confluence with Fish Creek to the longitudinal extent of current and future redband trout distribution, and the width of the flood prone area.

Alternative E

The RTR would consist of the public land portion of the mainstream Donner und Blitzen River upstream of its confluence with Fish Creek, and the width of the flood prone area.

Objective 2. Maintain genetic integrity of redband trout in the RTR.

Management Common to All Alternatives

Coordinate and cooperate with the ODFW and the Malheur NWR in developing or revising Native Fish Conservation Plan(s) for the Donner und Blitzen River subbasin in support of the ODFW's Native Fish Conservation Policy.

Objective 3. Increase the distribution and abundance of redband trout in the RTR through maintenance or restoration of habitat quality and quantity.

Alternative A

Riparian and aquatic habitats would be managed to maintain or progress toward PFC, water quality standards, and fish habitat values through existing management. The RTR would be managed in accordance with the Wilderness Act and the WSR Act, as appropriate. The Page Springs gauging weir would be removed if scientifically justified and funds are available.

Proposed RMP and Alternatives B and C

Riparian and aquatic habitats would be managed for an advanced ecological status that provides a diversity of fish habitat values including spawning, rearing, cover, forage, and cold-water refuge, and in accordance with the Wilderness Act and the WSR Act, as appropriate. Alternatives would be developed, evaluated, and implemented with the USFWS, ODFW, SMAC, and local interests and organizations, for removal or modification of the Page Springs gauging weir in order to facilitate upstream migration of redband trout and other aquatic species while limiting the migration capabilities of nonnative fish.

Alternative E

Riparian and aquatic habitats would be managed in a manner that provides a diversity of fish habitat values including spawning, rearing, cover, forage, and cold-water refuge, and in accordance with the Wilderness Act and the WSR Act, as appropriate. Alternatives would be developed, evaluated, and implemented for removal or modification of the Page Springs gauging weir with the USFWS, ODFW, SMAC, and local interests and organizations in order to facilitate upstream migration of redband trout and other aquatic species while limiting the migration capabilities of nonnative fish.

2.8 Paleontological Resources

2.8.1 Goal 1 - Preserve, protect, and manage vertebrate, noteworthy invertebrate, and plant paleontological resources in accordance with existing laws and regulations to make these resources available for appropriate uses by present and future generations.

2.8.1.1 Management Framework

The BLM is required by law, regulations, and Executive Orders to manage paleontological resources such that they would be preserved and protected from destruction, and that appropriate uses would be made of such resources.

The BLM regulates the collection of fossils on public lands under its jurisdiction according to the following laws and regulations: the FLPMA Section 310 and 302(b); 43 CFR 8365.1-5; and 43 CFR 3622. These laws provide direction for what individuals who wish to collect fossils on public land may do. Other federal agencies have similar authorities and policies for the lands they administer.

The Federal Land Policy and Management Act

Included in the many charges given to the BLM by the FLPMA are the following: (a) to manage the public lands in a manner that protects the quality of scientific and other values; (b) to see that these lands and resources are periodically and systematically inventoried; (c) to use such inventory data in developing plans for the management of these lands;

and (d) to manage the use of such lands and resources through easements, licenses, and permits. Management actions on public lands would be inventoried for paleontological resources prior to ground disturbing activity.

BLM Regulations 43 CFR 8365.1-5

Subject to the provisions of this regulation, common invertebrate and paleobotanical fossils may be collected in reasonable amounts for noncommercial purposes without a permit. However, in order to protect significant localities, areas may be closed to the collection of invertebrate and paleobotanical fossils except under permit. Vertebrate fossils such as dinosaur bones, fish, footprints, etc., may only be collected under a permit. The BLM issues permits to qualified paleontologists who agree to put their collections into repositories where they remain the property of the federal government and are accessible for study, education, and public enjoyment.

BLM Regulations 43 CFR 3622

Subject to the provisions of this regulation, persons may collect, without a permit, up to 25 pounds plus one piece per person per day of petrified wood, up to a maximum of 250 pounds in one calendar year, for personal, noncommercial purposes.

All areas within the Planning Area are evaluated for classification into three paleontological conditions as written in the BLM Manual H-8270-II-3.

Condition 1 - Areas that are known to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils. Consideration of paleontological resources is necessary if the Field Office review of the available information indicates that such fossils are present in the area.

Condition 2 - Areas with exposures of geological units or settings that have high potential to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils. Geologic units from which such fossils have been recovered elsewhere may require further assessment where they are present and exposed in the area of consideration.

Condition 3 - Areas that are very unlikely to produce vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils based on surficial geology, igneous or metamorphic rocks, extremely young alluvium, colluvium or aeolian deposits, the presence of deep soils. However, if possible, it should be noted at what depth bedrock may be expected in order to determine whether fossiliferous deposits may be uncovered during surface disturbing activities.

2.8.1.2 Management Direction by Alternative

Unless otherwise noted, the following management objectives and actions apply to the AMU and CMPA.

Objective 1. Using predictive modeling, locate significant localities which may be in conflict with other resource uses.

Alternative A

A portion of the Planning Area has not been inventoried for paleontological resources. Under this alternative, no program is in force to find significant localities in other resource use areas. Funding is being sought for challenge cost shares with universities and other federal agencies for inventory and assessment. The last inventory/assessment was completed in 1999.

Alternative B

Management would implement sample inventory for significant localities within recreational use areas in the entire Planning Area.

Alternative C

Implement Planning Area-wide sample inventory for significant localities where they may be in conflict with other resource uses.

Proposed RMP

This alternative is the same as Alternative C.

Alternative E

This alternative is the same as Alternative C, except that the inventory sample would be larger in order to account for increased commodity production in other resources.

Objective 2. Scientifically excavate significant paleontological localities in cooperation with universities and other federal agencies.

Excavation in wilderness areas would require NEPA analysis, minimum requirement decision, and under certain circumstances, State Director approval.

The Proposed RMP and Alternatives A and C

Under current management, paleontological localities are excavated when the budget allows. In Alternatives C and the Proposed RMP, significant localities would be researched to generate data for use in site management and off-site interpretation. Research efforts would be focused in areas where resource conflicts require management action. Eroding paleontological material at Thousand Springs, Catlow, Pueblo localities, and other similar localities would be recorded or salvaged once every five years.

Alternative B

Management would implement limited research of significant localities to generate data for use in site management and off-site interpretation. Surface paleontological material at Thousand Springs, Catlow, Pueblo localities, and other similar localities would be recorded or salvaged once every five years.

Alternative E

Management would emphasize natural history tourism and would implement large scale prospecting and excavation at significant localities, as well as recover fossil specimens and data used for interpretation and site management.

Objective 3. Protect significant paleontological localities.

Management Common to All Alternatives

Law enforcement surveillance is focused in areas in Catlow Valley, Pueblo Valley, and in the Long Draw. Protective measures at significant sites would be used as appropriate.

2.8.2 Goal 2 - Increase public knowledge of, appreciation for, and sensitivity to paleontological resources.

2.8.2.1 Management Framework

The BLM is required by law to preserve and protect cultural and paleontological resources. In order to do so, the public must be aware of resource values and the effects that human activities have upon them. Cultural and paleontological resources are fragile and irreplaceable when damaged or destroyed by actions of the public. Through vandalism and natural erosion, these resources are disappearing. If the public understands the effects of their actions and feels it has equity in the nation's cultural and natural history heritage, the resources would be appreciated and better protected from vandalism and illegal removal. Additionally, interpretation of paleontological resources improves recreational opportunities in the Planning Area and provides a high demand public service.

2.8.2.2 Management Direction by Alternative

Objective 1. Create paleontology interpretive opportunities for public education.

Management Common to All Alternatives

Actions would be initiated to develop public appreciation and protection through education regarding the values and importance of cultural resources. Permanent interpretive facilities would be constructed outside the Steens Mountain Wilderness. All interpretation projects would be implemented only if they would not effect the paleontological values at the subject locality.

Alternative A

Construct portable and static displays for local, regional, and national education where applicable. Produce brochures for off-site distribution. One paleontological poster has been completed under current management.

Cost-share programs with universities, museums, researchers, and volunteers would be continued to inventory, analyze, and research the paleontological resources within the Planning Area.

Alternative B

Same as Alternative A, except on-site interpretative facilities would not be constructed. The focus of paleontological interpretation under this alternative would be the creation of portable and static off-site displays and brochures.

Alternative C

Same as Alternative A, except on-site interpretative signage would not be implemented. The focus of paleontological interpretation under this alternative would be the creation of portable and static off-site displays and self-guided walking tour brochures.

Proposed RMP

Management actions would be the same as described under Alternative A.

Alternative E

Same as Alternative A, except a higher level of interpretation, including on-site facilities, would be implemented to augment natural history tourism opportunities.

2.8.3 Monitoring

See Appendix Q.

2.9 Cultural Resources

2.9.1 Goal 1–Preserve, protect, and manage cultural resources in accordance with existing laws, regulations, and Executive Orders, in coordination/consultation with the Burns Paiute Tribe, other American Indian tribes, Harney County Historical Society and other heritage groups to make cultural resources available for appropriate uses by present and future generations.

2.9.1.1 Management Framework

The BLM is required by laws, regulations, and Executive Orders to manage cultural resources such that they would be preserved and protected from destruction, and that appropriate uses would be made of such resources. The Antiquities Act of 1906 provides for the protection of archaeological resources on all public lands and requires permits for those who excavate or appropriate these resources. The Archaeological Resources Protection Act of 1979, as amended, defines and protects archaeological resources on public lands, establishes a permit system for resource users, and requires agencies to provide for public education and continuing inventory of public lands. Sections 106 and 110 of the National Historic Preservation Act of 1966, as amended, provide a national policy for historic preservation, establish a National Register

of Historic Places designation for important properties, protect sites from destruction without appropriate data recovery, and require that historic properties be utilized in agency missions, when warranted. Executive Order 11953 directs federal agencies to inventory public lands and to nominate eligible properties to the National Register of Historic Places. Executive Order 13287 entitled "Preserve America" requires Federal agencies to "prepare an assessment of the current status of its inventory of historic properties" and to "ensure that the management of historic properties in its ownership is conducted in a manner that promotes the long-term preservation and use of those properties." These laws, regulations, and Executive Orders further require that such management be coordinated with the appropriate American Indian tribes and individuals.

All management actions on public lands and private land projects that are federally funded, permitted, or assisted require completion of Section 106 of the National Historic Preservation Act of 1966, as amended. This consists of a literature review, a site survey on the ground to determine the presence or absence of sites, and site evaluation in coordination with the Burns Paiute Tribe and other tribes, as appropriate. Consultation with the State Historic Preservation Officer occurs with projects outside the scope of the Oregon Protocol of the National Programmatic Agreement of 1997 and when National Register listed or eligible properties may be impacted.

All sites that have currently been identified, as well as sites identified in the future, are evaluated for placement in one of four use categories as specified in BLM Manual 8110. These four uses are as follows:

1) Conservation for future use: This category places a site in protection from destruction with the intent to have it available at an unspecified date in the future for use in research or public interpretation.

2) Public use: Sites placed in this category are used for recreation, public interpretation, education, etc.

3) Experimental use: Sites placed in this category are used in scientific research. Such use may result in the complete consumption of the site in some cases. Sites may be placed in public use as a result of the research that is conducted.

4) Discharged sites: These are sites that no longer exist or have been so damaged that they have no value of any kind. Sites may be destroyed by erosion, consumption in research, or through destruction caused by humans.

2.9.1.2 Management Direction by Alternative

Unless otherwise noted, all management actions apply to both the AMU and CMPA.

Objective 1. Using predictive modeling, locate significant sites that may be in conflict with other resource uses.

Alternative A

Ninety-three percent of the Planning Area has not been inventoried for cultural resources. As a result, an unknown number of significant sites may be impacted by other resource uses. Under current management, sites in conflict with other resource uses are mitigated on a case-by-case basis. Funding for the predictive modeling plan is currently being sought.

Alternative B

Management would inventory for significant sites in recreation use areas Planning Area-wide.

The Proposed RMP and Alternatives C

Planning Area-wide sample inventory would be implemented for significant sites where they may be in conflict with other resources uses.

Alternative E

This alternative is the same as Alternative C, except that the inventory sample would be larger to account for increased commodity production in other resources.

Objective 2. Use Section 110 inventories to locate significant sites in the Planning Area.

The Proposed RMP and Alternatives A, B, and C

Current management completes cultural program funded archaeological inventories at a rate of approximately 750 acres a year. Inventory has been conducted in recreation use areas atop Steens Mountain and in the Alvord Valley. Inventory data are used in interpretation and public education. Management under the Proposed RMP and Alternatives B and C would complete cultural program funded archaeological inventories in areas of high potential for significant sites within the Planning Area. A minimum of five hundred acres per year would be the proposed accomplishment.

Alternative E

Heritage tourism and increased cultural program funded inventories would be emphasized in areas of high potential for significant sites within the Planning Area. Inventory data and archaeological specimens would be utilized in interpretation and other heritage recreation opportunities.

Objective 3. Excavate significant cultural sites in cooperation with universities, the Burns Paiute Tribe, other tribes, and other heritage partners.

The Proposed RMP and Alternatives A and C

Excavation in wilderness would require appropriate NEPA analysis, a minimum requirement decision, and State Director approval.

Research at significant sites is a key component of current management. Past and present partners include the University of Nevada, Reno; Washington State University; and the University of Wisconsin, Milwaukee. Research data are routinely used in interpretation and public education. Under Alternatives C and the Proposed RMP, management would entail research of significant sites or groups of sites to generate data for use in site management and off-site interpretation. Whenever possible, research efforts would be focused in areas where resource conflicts require management action.

Under current management, two regionally significant sites (site names withheld at the request of the Burns Paiute Tribe) in the AMU are visited twice yearly to record and salvage eroding material. Eroding cultural material at significant subsurface sites would continue to be recorded or salvaged on an annual basis.

Alternative B

Management would research significant sites or groups of sites on a limited basis to generate data for use in site management and off-site interpretation.

On an annual basis, eroding cultural material at significant subsurface sites would be recorded or salvaged.

Alternative E

Heritage tourism and increased archaeological research would be emphasized at sites or groups of sites. Research data and archaeological specimens would be utilized in interpretation and other heritage tourism opportunities.

Objective 4. Use protective measures to safeguard significant cultural sites.

Alternative A

No physical protection measures have been currently implemented with the exception of restricted access to and a caretaker at Riddle Brothers Ranch National Historic District. Restricted access is achieved by locked gates at the south entrance to the District and on the Cold Springs Road near Desert Meadows. Motorized access to this segment of the Cold Springs Road would be by permit only. Vehicle access to the ranch is allowed only during the daytime and only when the caretaker is present.

Law enforcement is active, focusing surveillance in the Catlow Valley, Alvord Valley, and Steens Mountain regions.

Known cultural sites within wildland fire areas are monitored to study fire impacts and prevent post-fire looting.

Alternative B

Riddle Brothers Ranch National Historic District would be protected by restricted access and an on-site caretaker during the visitor season. Access to the historic district from the north via the Cold Springs Road would not be allowed under this alternative.

Law enforcement would be provided, focusing surveillance in the Catlow Valley, Alvord Valley, Steens Mountain, and Coyote Lake regions.

Known cultural sites within wildland fire areas would be monitored and assessed in order to study fire impacts and to prevent post-fire looting.

Alternative C,

The Riddle Brothers Ranch National Historic District would be protected by restricted access and an on-site caretaker during the visitor season. Access to the historic district from the north via the Cold Springs Road would not be allowed under this alternative.

At significant sites in Catlow Valley and in the Alvord Basin, management would fence the BLM portion; close the area to OHV and mechanized vehicle use; close roads except for administrative and permittee use; and apply riprap at a significant site in the Alvord Basin. Administrative and data recovery measures to mitigate effects would be applied, as appropriate.

Law enforcement would be provided, focusing surveillance in the Catlow Valley, Alvord Valley, Steens Mountain, and Coyote Lake regions.

Known cultural sites within wildland fire areas would be monitored in order to study fire effects and to prevent post-fire looting.

Proposed RMP and Alternative E

The Riddle Brothers Ranch National Historic District would be protected by restricted access and an on-site caretaker during the visitor season. Restricted access is achieved by locked gates at the south entrance to the District and on the Cold Springs Road near Desert Meadows. Motorized access to this segment of the Cold Springs Road would be by permit only.

At significant sites in Catlow Valley and in the Alvord Basin, management would fence the BLM portion; close the area to OHV and mechanized vehicle use; close roads except for administrative and permittee use; and apply riprap at a significant site in the Alvord Basin. Administrative and data recovery measures to mitigate effects would be applied, as appropriate.

Law enforcement would be provided, focusing surveillance in the Catlow Valley, Alvord Valley, Steens Mountain, and Coyote Lake regions.

Known cultural sites within wildland fire areas would be monitored in order to study fire effects and to prevent post-fire looting.

Objective 5. Pursue land acquisitions to bring significant sites into public ownership.

Alternative A

A land trade in Catlow Valley with a private land owner to acquire a portion of a regionally significant archaeological site is currently in the initial stages.

The Proposed RMP and Alternatives B and C

As the opportunity arises, acquire the private portion of a site in Alvord Valley and a site in Catlow Valley as well as other non-BLM significant archaeological sites.

Alternative E

As this alternative would not encourage land acquisitions, land purchases funded by the cultural resources program would not be pursued.

Objective 6. Stabilize, restore, or reconstruct significant historic structures to provide public safety and recreational and interpretive opportunities.

The Proposed RMP and Alternatives A and C

The Frederick Riddle House, cookhouse, barn, and Benjamin Riddle House have been restored within the last eight years. Other historic structures in Riddle Brothers Ranch National Historic District such as the Frederick Riddle cold house, blacksmith shop/tackroom, and Benjamin Riddle cold house are currently maintained in their current condition and would be restored or reconstructed under the Proposed RMP and Alternatives A and C. The Walter Riddle House was destroyed by wildland fire in 1994. All that remains is a stone fireplace. A number of detailed photos exist of the building and it could be reconstructed in the same location, budget permitting.

Management would inventory and assess other historic structures in the Planning Area, develop restoration plans, and implement them where appropriate.

Alternative B

Historic structures at Riddle Brothers Ranch National Historic District would be maintained in their current condition.

Other historic structures in the Planning Area would be inventoried and assessed.

Alternative E

Management would increase inventory, assessment, and restoration activities in order to support heritage tourism.

2.9.2 Goal 2 - Increase public knowledge of, appreciation for, and sensitivity to cultural resources.

2.9.2.1 Management Framework

The BLM is required by law, regulation, and policy to preserve and protect cultural resources. Public education and interpretation efforts are intended to improve understanding of these resources, their value, and agents of effects. The result should be a greater appreciation of the resources and ultimately, less site vandalism.

Another facet of public education and interpretation is the positive link to enhanced heritage tourism, a high demand public service.

Cultural resources interpretation projects would be done in coordination with American Indians, and implemented only if they would not affect cultural resource values.

2.9.2.2 Management Direction by Alternative

Objective. Create cultural resources interpretive opportunities and sites for public education in coordination with the Burns Paiute Tribe, other tribes, and other heritage partners, as appropriate.

Alternative A

Portable interpretive displays on various aspects of prehistory and history in the Planning Area have been created under this alternative. On-site interpretation at the Riddle Brothers Ranch National Historic District has been funded and will be completed in 2005. On-site interpretation at Andrews Town Site, Fish Lake, and other locations has not been implemented under this alternative.

Alternative B

On-site interpretation at the Riddle Brothers Ranch National Historic District has been funded and will be completed in 2005. Management would construct portable and static interpretive displays for presentation at off-site locations only.

The Proposed RMP and Alternative C

On-site interpretation at the Riddle Brothers Ranch National Historic District has been funded and will be completed in 2005. Interpretive panels would be constructed and installed at Andrews Town Site, Fish Lake, and other locations where applicable. A Riddle Brothers National Historic District self-guided tour brochure would be developed by 2005 and distributed at the Burns Field Office, the Riddle Brothers Ranch National Historic District, and other appropriate outlets. The tour would be trail-less, with historic structures, features, and equipment identified in the field by a number or letter routered into the side of a low juniper post. Portable and static displays for local, regional, and national education would be constructed where applicable.

Alternative E

On-site interpretation at the Riddle Brothers Ranch National Historic District has been funded and will be completed in 2005. Under Alternative E, cultural program funding for interpretation may be increased in order to support heritage tourism.

2.9.3 Monitoring

See Appendix Q.

2.10 Native American Traditional Practices

2.10.1 Goal – Protect traditional sites, landforms, burial sites, resources, and other areas of interest in consultation with the Burns Paiute Tribe and other tribes.

2.10.1.1 Management Framework

Federal policy, laws, regulations, and Executive Orders require the BLM to consult and coordinate activities with American Indian tribes so that their rights and interests are considered when land use decisions are made, and that American Indian traditions and traditional uses are addressed. Specifically, the agency must comply with the National Historic Preservation Act; the Native American Graves Protection and Repatriation Act; the American Indian Religious Freedom Act; Regulations 36 CFR 800, section 106 and 119; and Executive Order 13007 (Sacred Sites). BLM Manual Section 8160, entitled "Native American Coordination and Consultation", establishes agency policy regarding American Indians, and integrates into all programs the management of resources valued by American Indians. The Steens Act specifically mentions Indian tribal rights that state "Nothing in this Act shall be construed to diminish the rights of any Indian tribe. Nothing in this Act shall be construed to diminish tribal rights, including those of the Burns Paiute Tribe, regarding access to Federal lands for tribal activities, including spiritual, cultural, and traditional food gathering activities."

The BLM has signed MOUs with the Burns Paiute Tribe, Confederated Tribes of Warm Springs and Umatilla Indian Reservations. These memoranda have been established to formalize consultation and cooperation.

2.10.1.2 Management Direction by Alternative

Unless otherwise noted, all objectives and management actions apply to the AMU and CMPA.

Objective 1. Monitor and protect Burns Paiute tribal and other tribal interest areas.

Management Common to All Alternatives

Management would continue consultation/coordination with the Burns Paiute Tribe and other tribes to identify traditional practice areas in the Planning Area. Applicable Traditional Cultural Properties would be nominated. Burial sites in the Planning Area would be monitored. Coordination and consultation with American Indian tribes would be documented under all alternatives.

Objective 2. Integrate maintenance and protection of native subsistence species into vegetation management activities.

Management Common to All Alternatives

Management would identify plants of cultural, traditional, and economic importance during botanical and cultural inventories, and would input information into the Freedom of Information Act-exempt Geographic Information System (GIS) layer.

The Burns Paiute Tribe and other tribes would be consulted on vegetation management projects, especially those involving large scale vegetation manipulation.

Coordination and consultation with American Indian tribes would be documented under all alternatives.

2.10.2 Monitoring

See Appendix Q.

2.11 Visual Resources

2.11.1 Goal - Manage public land actions and activities in a manner consistent with VRM class objectives.

2.11.1.1 Management Framework

Section 102(8) of the FLPMA declares that public land would be managed to protect the quality of scenic values and, where appropriate, to preserve and protect certain public land in its natural condition. The NEPA, Section 101(b), requires federal agencies to "assure for all Americans...esthetically pleasing surroundings." Section 102 of the NEPA requires agencies to "utilize a systematic, interdisciplinary approach that would ensure the integrated use of...Environmental Design Acts in the planning and decision making" process. Guidelines for the identification of visual resource inventory classes on public land are contained in BLM Manual Handbook H-8410-1, Visual Resource Inventory. The establishment of visual resource inventory classes on public land is based on an evaluation of the landscape's scenic qualities, public sensitivity toward the landscape, and visibility of the landscape from travel routes or observation points. VRM classes are designated through the RMP process. VRM class objectives are managed through application of BLM Manual Handbook H-8431-1, Visual Resource Contrast Rating.

2.11.1.2 Management Common to all Alternatives

WSAs, designated wild WSRs, and the Steens Mountain Wilderness are designated as VRM Class I. Should a WSA not be designated as wilderness by Congress, the area would be evaluated to determine the appropriate VRM designation, based on laws, regulations, and policies in place at that time.

2.11.1.3 Management Direction by Alternative

Objective. Protect, maintain, improve, or restore visual resource values by managing all public lands in accordance with the VRM system.

Alternative A

Planning Area
Maintain the existing Andrews MFP VRM classes in all areas (Table 2.11.1). CMPA and AMU VRM classes are shown in Tables 2.11.2 and 2.11.3.

Management would continue as described in the existing Andrews MFP and plan amendments. Visual resources in existing ACECs/RNAs would be managed as shown in Table 2.22.2. Eligible WSRs would be managed according to the surrounding VRM class designation.

Alternative B

Planning Area
Manage visual resources to allow natural processes to determine visual quality. All lands within the Planning Area would be designated as VRM Class II, except where VRM Class I is required by law, policy, or regulation.

Visual resources in the ACECs/RNAs would be designated as shown in Table 2.21.2.

Table 2.11.1: VRM Class Designation Acreages by Alternative in the Planning Area (Public Land Acres Only)

Designation	Alternative A (acres)	Alternative B (acres)	Alternative C (acres)	Proposed RMP (acres)	Alternative E (acres)
Class I	852,250	850,657	854,308	852,255	852,254
Class II	239,321	798,813	250,935	206,972	28,880
Class III	121,048	0	544,227	214,487	66,938
Class IV	436,851	0	0	375,756	701,398
TOTAL	**1,649,470**	**1,649,470**	**1,649,470**	**1,649,470**	**1,649,470**

Table 2.11.2: VRM Class Designation Acreages by Alternative in the CMPA (Public Land Acres Only)

Designation	Alternative A (acres)	Alternative B (acres)	Alternative C (acres)	Proposed RMP (acres)	Alternative E (acres)
Class I	291,315	290,492	293,386	291,333	291,336
Class II	95,939	137,664	114,862	76,012	13,052
Class III	2,614	0	19,908	60,033	65,569
Class IV	38,288	0	0	778	58,199
TOTAL	**428,156**	**428,156**	**428,156**	**428,156**	**428,156**

Table 2.11.3: VRM Class Designation Acreages by Alternative in the AMU (Public Land Acres Only)

Designation	Alternative A (acres)	Alternative B (acres)	Alternative C (acres)	Proposed RMP (acres)	Alternative E (acres)
Class I	560,935	560,165	560,922	560,922	560,918
Class II	143,382	661,149	136,073	130,960	15,828
Class III	118,434	0	524,319	154,454	1,369
Class IV	398,563	0	0	374,978	643,199
TOTAL	**1,221,314**	**1,221,314**	**1,221,314**	**1,221,314**	**1,221,314**

Alternative C

Planning Area
Visual resources would be managed to emphasize protection of natural values. Existing VRM classes would be amended. The VRM classes for the ACECs/RNAs would be designated as shown in Table 2.22.2. All existing seedings would be designated as VRM Class III. The visual resources of all suitable WSRs would be managed according to the surrounding VRM class designation. Should a suitable WSR be designated as a wild WSR by Congress, the WSR would be designated as VRM Class I. Other existing Andrews MFP VRM classes would be amended, as described below. The four parcels found to have wilderness characteristics would be designated as VRM Class II.

CMPA
The Steens Mountain ACEC would be designated as VRM Class I. The WJMA would be designated as VRM Class III. The remainder of the CMPA would be designated as VRM Class II.

AMU
All Andrews MFP VRM Class IV areas would be changed to VRM Class III. All Andrews MFP VRM Class II and III areas would not be amended.

Proposed RMP

Planning Area
All visual resources would be managed to improve natural values. ACECs/RNAs would be designated as shown in Table 2.21.2. All existing seedings would be designated as VRM Class III. Other existing Andrews MFP VRM classes would be amended, as described below.

CMPA
The WJMA would be designated as VRM Classes III and IV. The remainder of the CMPA would be designated as VRM Classes II and III.

AMU
The existing Andrews MFP VRM classes would be maintained.

Alternative E

Planning Area
Visual resources would be managed as determined in the Andrews MFP, as reinventoried or as detailed below. ACECs/RNAs would be designated as shown in Table 2.22.2. All existing seedings would be designated as VRM Class IV. Other existing Andrews MFP VRM classes would be amended, as described below.

CMPA
The WJMA would be designated as VRM Class IV. The remainder of the CMPA would be designated as VRM Classes II, III, and IV.

AMU
The area between the Trout Creek Mountains WSAs and the area around Denio Creek would be designated as VRM Class II. The remainder of the AMU would be designated as VRM Class IV.

2.11.2 Monitoring

See Appendix Q.

2.12 Social and Economic Values

2.12.1 Goal - Manage public lands to provide social and economic benefits to local residents, businesses, visitors, and future generations.

2.12.1.1 Management Framework

The BLM is required by Section 202 of the FLPMA to integrate "..physical, biological, economic and other sciences..." in developing land use plans (43 U.S.C. 1712). Section 102 of the NEPA requires the integrated use of the social sciences in assessing impacts of an action on the human environment (42 U.S.C. 4332). The Council on Environmental Quality (CEQ) regulations state that when an EIS is prepared "and economic or social and natural or physical environmental effects are interrelated, then the [EIS] would discuss all of these effects on the human environment" (40 CFR 1508.14). Executive Order 12898 (Environmental Justice) requires federal agencies to "...identify and address... disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States..." As indicated by these legal mandates, social science information is required to make informed, legal land use planning decisions. This section outlines the various management alternatives as they relate to social and economic values.

Historically, commodity values on public lands have been made available to private individuals or businesses through sales, permitting, or other methods. The federal government collects revenues when commodities are used. These commodities also generate private economic activity in the local, regional, national, and in some cases international economies.

Public lands provide or contribute to numerous environmental amenities such as clean water, scenic quality, and recreational opportunities. These amenities promote local communities as places to live, work, or visit. Public lands also attract visitors to the area, many of whom purchase goods and services, thereby generating local economic activity. Federal agencies, through business activities, generate economic activity in the local, regional, and national economies both as employers and purchasers of goods and services.

Public lands contribute to local governments where they are located. Many commodity programs include provisions to share collections with local governments. Payments in Lieu of Taxes (PILT) are also made to compensate counties due to public lands being exempt from local property taxes. Continuation of programs limits disruption of existing economic structures. Guidance within the plan defines the amount of economic opportunity in the future, especially related to mining, recreation, grazing, agriculture, and tourism.

In its resource management planning, the BLM generally strives for a balance among current and future generations; local, regional and national interests; commodity uses and natural values; and physical, biological, and socioeconomic values.

In addition to the above, the Steens Act specified that the purpose of the CMPA is to "...preserve protect and manage the long term ecological integrity of Steens Mountain...." To achieve this purpose, the Steens Act delineated five objectives for the CMPA all of which have socioeconomic ramifications. In summary, they are to enact cooperative management projects, promote sustainable uses, promote cooperation with private landowners, promote traditional access for the Burns Paiute Tribe, promote proper management of all facets of the CMPA, and promote understanding and conflict reduction among Steens Mountain users and interests.

2.12.1.2 Management Direction by Alternative

The following section outlines the management actions and emphasis by alternative for social and economic values as well as economically based resource uses including the following: energy and minerals; grazing management; lands and realty; transportation and roads; recreation; and OHVs and mechanized vehicles. See Table 2.13.1 and Sections 2.13 (Energy and Minerals), 2.15 (Grazing Management), 2.17 (Lands and Realty), 2.18 (Transportation and Roads), 2.19 (OHVs), and 2.20 (Recreation) for more details regarding the goals, objectives and management actions for these resource uses.

Objective 1. Work cooperatively with private and community groups and local government, Burns Paiute tribal, and other tribal governments to provide for customary uses consistent with other resource objectives and to sustain or improve local economies.

Alternative A

Commodity use would continue at existing levels. Contracts for services and sale of products would be made available to local residents as need and conditions permit. Natural resources would be managed as outlined in existing land use plans and the Steens Act, and staff would work cooperatively with public land users consistent with resource objectives.

Management of existing facilities (roads, recreation sites, and rangeland facilities and improvements) to promote commodity uses and continued access and availability of natural resource amenities would continue as outlined in existing land use plans and the Steens Act. When determining the need for additional facilities, existing management direction would continue.

Public and private partnerships would be created to achieve shared economic objectives. Mining, grazing, and recreation management would remain the same, with the exception of restrictions and designations as required by the Steens Act.

Livestock grazing use would continue to be authorized in the AMU consistent with the existing land use plan, the S&Gs (USDI 1997a), and applicable activity plans. Interim and long-term grazing management and stocking levels would continue to be adjusted in accordance with results of monitoring studies, allotment evaluations, and rangeland health assessments.

Lands currently open to locatable mineral activity would continue to be available. Approximately 467,831 acres would be open to locatable and leasable mineral exploration and development and 468,344 acres would be open to salable mineral exploration and development. Renewable energy authorization management would continue, consistent with existing land use planning, regulation, and law. There would be no renewable energy authorization exclusion or

avoidance areas, although special designations, planning decisions, and other factors may constrain or exclude renewable energy development.

Public lands would be retained, exchanged, and sold as outlined in Section 2.17. Lands may be acquired in any zone on a case-by-case basis by exchange, donation, or purchase, consistent with existing land use planning, regulation, and law.

New ROW facilities would be located within corridors on a case-by-case basis and designed to minimize impairment to special designations. There would be no land use authorization exclusion or avoidance areas except the Stonehouse WSA exclusion zone and the Kiger HMA avoidance area. Subject to the constraints discussed in Section 2.17, the entire Planning Area would be available on a case-by-case basis to ROW and other land uses including energy development, communications sites and military uses. Withdrawal and land classification actions would also be managed on a case-by-case basis.

Legal public or administrative access, including conservation and scenic easements, would be acquired on a case-by-case basis as the need arises. Emphasis would be placed on providing access for BLM administrative facilities and program-related activities. All land tenure actions would be reviewed for their effect on access.

Construction of new roads around private lands may be considered where easement acquisition is not feasible or desirable, subject to the limitations expressed in the Steens Act. Roads would be constructed and maintained as needed in the AMU. Roads in the CMPA would be retained and maintained at current levels, subject to the Steens Act. Existing recreation sites would generally be maintained at the current level; site expansions would be considered if needed to accommodate existing recreation use or reduce resource damage. SRPs would be issued on a case-by-case basis. OHV and mechanized vehicle designations and current use levels would continue.

Alternative B

This alternative emphasizes natural processes and limits commodity production; therefore, no commodity production from public land would be allowed except as required by law (i.e. the Steens Act). Natural resource amenities would continue to be provided at levels that meet or exceed existing legal requirements. Where needed, environmental quality would be improved to meet or exceed requirements, using administrative or project-related solutions that emphasize elimination of commodity production and public uses to protect natural values.

Under this alternative, natural processes would be allowed to operate with minimal human interference while providing for public health, safety, and facility maintenance. Alternatives would be developed for existing facilities that negatively effect natural values. Public and private partnerships would be created to achieve shared economic objectives within existing legal, regulatory, and administrative authorities.

No grazing use would be authorized in the Planning Area, and rangeland projects that support livestock grazing would not be planned or implemented. Rangeland projects that do not function to promote resource values or assist in meeting management objectives would be removed, and project sites would be rehabilitated.

The USDI would be petitioned to withdraw the entire Planning Area from locatable, leasable, and salable mineral exploration and development, except where required by law or where essential to protect human safety such as road construction under critical or emergency conditions.

All public lands in the Planning Area would be identified for retention to protect resources from commodity producing activities that could occur if the lands were conveyed into nonpublic ownership. The entire Planning Area would also be considered a ROW and land use authorization exclusion zone except for those authorizations necessary to provide reasonable access to nonpublic lands and interest in land subject to valid existing rights. In addition, the entire Planning Area would be recommended for withdrawal to protect the lands from energy and mineral exploration and development, military activities, and other commodity production.

Legal public or administrative access, including conservation and scenic easements, would be acquired, with emphasis on controlling public access, for protection of sensitive resource values. Land tenure actions would be designed to avoid facilitating public access to these areas. Construction of new roads around private lands would not be considered as an alternative for access easement acquisition. Some roads would be closed in order to maximize natural processes. Only existing recreation sites would be maintained. Many currently allowed activities would be limited or prohibited. Only the existing long-term CMPA SRPs would be authorized. All other SRPs would be cancelled with no new SRPS issued.

OHV and mechanized vehicle use would be limited to designated roads in less than half of the Planning Area. The remainder of the Planning Area would be closed to OHV and mechanized vehicle use.

Alternative C

Under this alternative, commodity production would be restricted in order to increase protection of natural values. New commodity use levels that can be maintained through time and that contribute to stability in the local livestock and mining industries would be established. Natural resource amenities would continue to be provided at levels that meet or exceed existing legal requirements. Where needed, administrative or project related solutions that protect or improve natural values would be used to improve environmental quality to meet or exceed requirements. Local contracts would be targeted for services to restore and maintain natural systems. Public and private partnerships would also be created to achieve shared economic objectives within existing legal, regulatory, and administrative authorities.

Natural values would be protected and conserved while allowing for tourism and commodity use of natural resources that would not negatively effect natural values. Management of existing facilities (e.g. roads, recreation sites, and range improvements) would continue in order to facilitate commodity uses, continued access, and availability of natural resource amenities. Alternatives would be developed, where possible, for existing facilities that negatively effect natural values; otherwise, such facilities would be eliminated.

Nonconsumptive uses would be emphasized in the AMU while providing for minimal sustainable livestock grazing that meets allotment management (natural resource) objectives, and the S&Gs (USDI 1997a). Administrative actions (e.g. season of use changes, stocking level adjustments, and exclusion of livestock from specific areas) would be emphasized to accomplish natural resource management objectives. Rangeland projects and accepted livestock management practices would be implemented when administrative actions alone would not accomplish natural resource objectives. Rangeland projects that do not promote resource values or assist in meeting management objectives would be removed, and project sites would be rehabilitated.

Approximately 212,972 acres would be open to locatable and leasable mineral exploration and development and 213,207 acres would be open to salable mineral exploration and development. The leasable land would be open with standard lease stipulations (Table 2.13.1).

All ACECs, WSAs, parcels with wilderness characteristics, WSRs,, the Steens Mountain Wilderness, and the CMPA would be designated as renewable energy authorization exclusion areas. Applications for renewable energy authorizations in the AMU would be processed on a case-by-case basis.

Public land holdings containing WSAs, ACECs, HMAs, special status species, and important cultural/historical sites, as well as those in the Steens Mountain Wilderness and the CMPA, would be retained and increased with an emphasis on acquiring land with natural or cultural values. Other lands may be acquired by purchase, donation, conservation agreements/easements, or by exchange in order to obtain lands with natural or cultural values.

All ACECs, WSAs, parcels with wilderness characteristics, WSRs, the Steens Mountain Wilderness, and the CMPA would be designated as ROW and realty use authorization exclusion areas, except those authorizations necessary to provide reasonable access to nonpublic lands and interests in land. No new communications sites would be authorized in the Planning Area. Except as noted in Section 2.17, applications for ROWs and other realty use authorizations in the AMU, including those for energy development and military uses, would be processed on a case-by-case basis.

Approximately 254,859 acres as identified in Table 2.13.1 would be recommended for withdrawal from the public land and mining laws. Access and easement acquisition management would be the same as Alternative B, except that closed roads would be actively reclaimed.

Roads that are determined not essential or that contribute to negative effects on natural resources would be closed and rehabilitated. Only existing recreation sites would be maintained. Dispersed recreation would be emphasized. An SRP allocation system would be developed for the CMPA. SRPs in the AMU would be issued to meet the demand. OHV and mechanized vehicle use would be limited to designated roads in approximately 90 percent of the Planning Area. The remaining ten percent would be closed to OHV and mechanized vehicle use.

Proposed RMP

This alternative emphasizes balancing social, economic, cultural, and ecological components and using cooperative management practices. To achieve the objective, cooperative and collaborative processes, contracts, and cooperative

agreements would be made for services and products available locally when need and conditions permit. In addition, local contracts would be targeted for services to restore and maintain natural systems, while providing for sustainable tourism, production, and industry. Collaboration with local populations would be implemented to encourage a high level of natural resource protection, which contributes to tourism and attracts sustainable commodities industries. Public and private partnerships would also be created to achieve shared economic objectives within existing legal, regulatory, and administrative authorities.

Management actions would provide for sustainable livestock grazing that meets allotment management (natural resource) objectives and the S&Gs (USDI 1997a). Revision of Allotment Management Plans (AMPs) would be based on evaluations and rangeland health assessments, which would determine allowable Animal Unit Months (AUMs) and plant community management. Interim and long-term grazing management and stocking levels would be adjusted in accordance with results of monitoring studies, allotment evaluations, and rangeland health assessments.

Accepted livestock management practices would be implemented (e.g. adjustment of the timing, duration, frequency of grazing, and periodic rest or deferment). These would be supplemented by administrative actions (e.g. season of use changes, stocking level adjustments and exclusionary pastures) or rangeland projects to accomplish natural resource management objectives.

Approximately 447,464 acres would be open to locatable mineral exploration and development and 20,367 acres would be recommended for withdrawal. No acres would be closed to leasable energy and mineral exploration and development, 9,355 acres would be open with no surface occupancy (NSO), 241,683 acres would be open with seasonal and other special stipulations, and the remaining 216,793 acres would be open with standard lease stipulations (Table 2.13.1). Approximately 446,287 acres would be open to salable minerals and 22,057 acres would be closed (Table 2.13.1).

All WSRs and the Steens Mountain Wilderness would be designated as renewable energy authorization exclusion areas. All WSAs, and ACECs would be designated as renewable energy authorization avoidance areas. Applications for renewable energy authorizations in the AMU would be processed on a case-by-case basis.

Public land holdings containing WSAs, ACECs, HMAs, special status species, and important cultural/historical sites, as well as those in the Steens Mountain Wilderness and the CMPA, would be retained and increased with emphasis on acquiring lands with high public resource values. Emphasis would also be on acquisition of nonpublic lands within an ACEC, the CMPA, WSA, or proposed or designated WSRs; or of nonpublic lands containing a critical access need as identified in an approved BLM land use plan, or those containing riparian or wetland values, habitat for listed T&E species; or cultural/historical resources listed on the National Register of Historic Places.

Corridor designations would be the same as Alternative C. All large scale facilities, as specified in Section 2.17, would be encouraged to locate in the designated corridors. All WSRs and the Steens Mountain Wilderness would be designated as ROW and realty use authorization exclusion areas, except those authorizations necessary to provide reasonable access to nonpublic lands and interests in land. All WSAs and ACECs would be designated as ROW and realty use authorization avoidance areas. Communications lease applications for new locations would be considered on a case-by-case basis and site management plans would be developed concurrent with processing applications. Except as noted in Section 2.17, applications for ROWs and other realty use authorizations in the Planning Area would be processed on a case-by-case basis.

Approximately 20,367 acres would be recommended for withdrawal from the public land and mining laws. Legal public or administrative access, including conservation and scenic easements, would be acquired where public demand or an administrative need exists, including any rights necessary to control and minimize access to areas containing sensitive resource values. Emphasis would be placed on providing access to areas containing high public values and on the protection of natural values. Land tenure transactions would be designed to maintain and improve public access. Where easement acquisition for access is not feasible or desirable but a critical access need has been identified, new roads would be constructed around nonpublic lands, subject to the limitations expressed in the Steens Act.

TPs will be written for both the AMU and the CMPA. After completion of the plans, some roads could be closed, modified or relocated to minimize resource impacts. In the AMU new roads would be constructed on a case-by-case basis when needed for management purposes. Existing roads in the Planning Area would be maintained to appropriate standards. The existing recreation sites would be maintained. New facilities or actions in the CMPA would be considered in a comprehensive recreation plan to be developed after the RMP is completed. New facilities or actions in the AMU would be considered in site specific Recreation Project Plans and EAs. SRPs would be issued to meet the demand. An SRP allocation system could be developed for the Planning Area. OHV and mechanized vehicle use would be limited

to designated roads in approximately 88 percent of the Planning Area. Ten percent would be closed to OHV and mechanized vehicle use. The remaining area, the Alvord Desert playa, would be open.

Alternative E

This alternative emphasizes commodity production while targeting services and products for competitive contracting to local firms/individuals, where legally permitted, and managing natural resources on the public lands to promote tourism, maximize production, and attract industry. In addition, existing commodities available for extraction would be advertised and public and private partnerships would be created to achieve shared economic objectives within existing legal, regulatory, and administrative authorities.

Grazing opportunities would be maximized in the AMU to the extent possible while meeting the S&Gs (USDI 1997a). Rangeland projects and accepted livestock practices would be emphasized as the preferred solution to meet natural resource management objectives. Administrative actions would be applied when structural developments or accepted livestock management practices would not accomplish natural resource management objectives.

The maximum amount of area (467,831 acres) would be open to locatable mineral exploration and development. No acres would be closed to leasable energy and mineral exploration and development; no areas would require NSO; no areas would require seasonal or other special stipulations; and the maximum amount of area would be open with standard lease stipulations. Salable minerals under this alternative would be similar to Alternative A except that no new areas would be closed to salable minerals. Approximately 468,344 acres would be open to salable minerals and no acres would be closed. Renewable energy exclusion and avoidance designations and renewable energy administration would be the same as the Proposed RMP.

Public land holdings containing WSAs, ACECs, HMAs, special status species and important cultural/historical sites, as well as those in the Steens Mountain Wilderness and the CMPA, would be maintained in their approximate current acreage. Emphasis would be on securing land containing commodity-producing values or that facilitates commodity production. Leases, permits, and other authorizations would be considered and encouraged for agricultural, occupancy, filming, and other commodity-producing land uses.

The designated corridors would include all corridors identified by the Western Regional Corridor Study, all county roads, and all federal and state highways. Otherwise, corridor management, exclusion and avoidance designations, and general ROW administration would be the same as the Proposed RMP.

No new protective withdrawals would be considered for public land. Legal public or administrative access would be acquired with emphasis on providing access to facilitate commodity production. No conservation or scenic easements would be considered. New roads would be constructed around private lands where easement acquisition is not feasible or desirable, subject to the limitations expressed in the Steens Act. Land tenure transactions would be designed to maintain and improve public access.

New roads would be constructed and existing roads upgraded on a case-by-case basis to facilitate public uses and commodity production. Recreational activities would be permitted to the fullest extent possible, while not damaging sensitive resources protected by laws and regulations. New recreation facilities would be developed to attract visitors to the area. Except where prohibited by law, policy, or regulation, the Planning Area would be open to OHV and mechanized vehicle use. SRPs would be issued to emphasize commercial, competitive, and organized group recreation activities.

Objective 2. Maintain and promote the cultural, economic, ecological, and social health of the Steens Mountain area.

Management Common to All Alternatives

The Steens Act requires that management of the CMPA accomplish the following:

1) Provide for predictable and sustainable levels of commodity outputs.
2) Meet subsistence needs of tribes and tribal communities to the greatest extent practicable.
3) Provide natural resource amenities on public lands that promote local communities as places to live, work, or visit (e.g., water quality, scenic views, recreation sites, wildlife viewing, hunting, and fishing).
4) Protect special designated areas with unique natural resource values for the enjoyment of future generations (e.g., habitats of endangered species).

5) Target local economies for government business activities associated with public land management to the extent permitted by the existing authorities (procurement and contracting can be tracked through BLM records to evaluate whether local versus nonlocal government spending changes over time).

These requirements meet both objectives for Social and Economic Values.

The Steens Act dictates that no mechanized or motorized vehicles can be operated off designated roads. Outside of the Steens Mountain Wilderness, the CMPA is designated as limited to designated routes for OHV and mechanized vehicle use.

Alternative A

Under this alternative, current management mandated by the Steens Act would continue. Livestock grazing use would continue to be authorized in the CMPA consistent with the existing land use plan, the Steens Act, the S&Gs (USDI 1997a), and applicable activity plans. Minerals and land authorizations would be managed as outlined in existing land use plans and the Steens Act. Therefore, subject to valid existing rights, no mineral exploration or development would be permitted anywhere in the CMPA except at salable minerals sites identified as open for road maintenance use by the Steens Act.

Pursuant to the Steens Act, a TP for the CMPA is being written in conjunction with the development of this RMP. No new roads are to be constructed in the CMPA but routes may be modified or relocated to minimize resource impacts. Existing and new SRPs would continue to be issued. Existing recreation sites would be maintained and improved.

Alternative B

This alternative emphasizes natural process and limits commodity production to the extent required by the Steens Act. Nonconsumptive uses would be emphasized in the CMPA, with the exception that grazing would not be authorized anywhere within the planning area. Existing rangeland projects that do not function to promote resource values or assist in meeting management objectives would be removed, and project sites would be rehabilitated.

In the entire Planning Area, no locatable, leasable or salable mineral exploration or development and no renewable energy authorizations would be permitted.

Transportation is the same as for Alternative A. Only the existing recreation sites would be maintained. Many currently allowed activities would be limited or prohibited. Only the existing long-term CMPA SRPs would be authorized. No new SRPS would be issued.

Alternative C

Under this alternative, provisions of the Steens Act would continue to be enacted while emphasizing protection of the natural values of the CMPA. Nonconsumptive uses would be emphasized in the CMPA while providing for sustainable livestock grazing consistent with the Steens Act, and that also meet allotment management (natural resource) objectives and the S&Gs (USDI 1997a).

Consistent with the Steens Act, no locatable or leasable mineral exploration or development would be allowed in the CMPA. Salable minerals sites identified in the Steens Act would be open for exploration and development for road maintenance use. The CMPA would be designated as a renewable energy authorization exclusion area.

Lands within the CMPA may be disposed of only by exchange that furthers the purpose and objectives of the Steens Act. All ACECs, WSAs, parcels with wilderness characteristics, WSRs, the Steens Mountain Wilderness, and the CMPA would be designated as ROW and realty use authorization exclusion areas, except those authorizations necessary to provide reasonable access to nonpublic lands and interests in land.

Transportation is the same as for Alternative A. Only the existing recreation sites would be maintained. Dispersed recreation would be emphasized. An SRP allocation system would be developed for the CMPA.

Proposed RMP

This alternative emphasizes sustainable economic operations while protecting the ecological, social, and cultural integrity of the CMPA. Management actions would provide for and promote sustainable livestock grazing in the CMPA that is consistent with the Steens Act and that meets allotment management (natural resource) objectives and the S&Gs (USDI 1997a). Revision of AMPs would be based on evaluations and rangeland health assessments, which would determine allowable AUMs and plant community management.

Consistent with the Steens Act, no locatable or leasable mineral exploration or development would be allowed in the CMPA. Salable minerals sites identified in the Steens Act would be open for exploration and development for road maintenance use.

Transportation is the same as for Alternative A. The existing recreation sites would be maintained. New facilities or actions in the CMPA would be considered in a comprehensive recreation plan to be developed after the RMP is completed. SRPs would be issued to meet the demand. An SRP allocation system could be developed for the CMPA. Sustainable recreational activities would be promoted.

Traditional access to public lands by the Burns Paiute Tribe would be conserved, protected and promoted.

Alternative E

Under this alternative, commodity production would be provided to the maximum extent allowable under the Steens Act. Grazing opportunities would be maximized in the CMPA consistent with the Steens Act, and to the extent that is possible while meeting the S&Gs (USDI 1997a).

Consistent with the Steens Act, no locatable or leasable mineral exploration or development would be allowed in the CMPA. Salable minerals sites identified in the Steens Act would be open for exploration and development for road maintenance use.

Transportation is the same as for Alternative A. New recreation facilities would be developed to attract visitors to the area. SRPs would be issued to emphasize commercial, competitive, and organized group recreation activities.

2.12.2 Monitoring

See Appendix Q.

2.13 Energy and Minerals

For renewable energy permitting, see Lands and Realty at Section 2.17. The primary form of authorization for wind and solar energy development is a ROW or other realty use authorization.

In the RMP process, BLM administered lands are recommended for locatable mineral withdrawal, leasable mineral leasing categories, and are closed to salable minerals activities across management alternatives depending on resource values that conflict with exploration and development of mineral resources in a culturally and environmentally sound manner. The authority for mineral withdrawal rests with the Secretary of the Interior. Congressional notification is required for non-military withdrawals exceeding 5,000 acres. It is USDI policy (DM603 1976) that withdrawals of land shall be kept to a minimum; therefore, under the Proposed RMP the resource identified for withdrawal are kept to a minimum.

Part of the Planning Area is already Congressionally withdrawn. This includes BLM administered land within the Mineral Withdrawal Area, the Steens Mountain Wilderness and WSRs. Split estate land with nonfederal surface estate and federal mineral estate is not analyzed across the management alternatives because the nonfederal surface is not public land subject to the planning and management requirements of the FLPMA. Split estate land with federal surface and nonfederal minerals is not analyzed for mineral withdrawal because the minerals are nonfederal.

Energy and minerals uses in WSAs are not analyzed in the Proposed RMP/FEIS. WSAs are open to mining claim location but are subject to the WSA IMP, including the nonimpairment criteria. Those criteria close WSAs to locatable mineral activities under a notice or plan of operations and to leasable and salable minerals activities unless they are grandfathered.

Consistent with the Steens Act, this Proposed RMP/FEIS analyzes 467,831 acres of BLM administered land for locatable and leasable minerals and 468,344 acres of BLM administered land for salable minerals. Table 2.13.1 summarizes the acres recommended closed (withdrawn) and open for locatable, leasable and salable minerals activities across the management alternatives. Table 2.13.2 shows mineral leasing stipulations and their exceptions, modifications, and waivers. Table 2.13.3 shows a summary comparison of acreages by resource values recommended closed across the management alternatives.

Table 2.13.1: Acres of Mineral Restrictions Within Areas of High Mineral Potential, by Alternative[1]

	Alternative A	Alternative B	Alternative C	Proposed RMP	Alternative E
LOCATABLE MINERALS					
Total available BLM administered acres in the Planning Area[2]	467,831	467,831	467,831	467,831	467,831
Total Closed acres in the Planning Area[3]	0	467,831	254,859	20,367	0
Total Open acres in the Planning Area	467,831	0	212,972	447,464	467,831
Total available BLM administered acres with high potential for hot springs gold and mercury	32,055	32,055	32,055	32,055	32,055
Closed	0	32,055	24,911	8,005	0
Open	32,055	0	7,144	24,050	32,055
Total available BLM administered acres with high potential for uranium	0	0	0	0	0
Total available BLM administered acres with high potential for vein gold	0	0	0	0	0
Total available BLM administered acres with high potential for porphyry copper, gold and molybdenum	1,313	1,313	1,313	1,313	1,313
Closed	0	1,313	1,294	10	0
Open	1,313	0	19	1,303	1,313
Total available BLM administered acres with high potential for diatomite	1	1	1	1	1
Closed	0	1	1	1	0
Open	1	0	0	0	1
LEASABLE MINERALS					
Total available BLM administered acres in the Planning Area	467,831	467,831	467,831	467,831	467,831
Total Closed acres in the Planning Area	0	467,831	254,859	0	0
Total Open with NSO in the Planning Area	0	0	0	9,355	0
Total Open with Special Stipulations in the Planning Area	0	0	0	241,683	0
Total Open with Standard Stipulations in the Planning Area	467,831	0	212,972	216,793	467,831
Total available BLM administered acres in the Planning Area with high potential for oil and gas resources	0	0	0	0	0
Total available BLM administered acres in the Planning Area with high potential for geothermal resources	332	332	332	332	332
Closed	0	332	289	0	0
Open with NSO	0	0	0	0	0

	Alternative A	Alternative B	Alternative C	Proposed RMP	Alternative E
Open with Special Stipulations	0	0	0	281	0
Open with Standard Lease Stipulations	332	0	43	51	332
Total available BLM administered acres in the Planning Area with high potential for sodium or potassium mineral resources	0	0	0	0	0
SALABLE MINERALS					
Total available BLM administered acres in the Planning Area[4]	468,344	468,344	468,344	468,344	468,344
Closed acres in the Planning Area	0	468,344	255,137	22,057	0
Open acres in the Planning Area	468,344	0	213,207	446,287	468,344

[1] These acreages are for areas of Public Land only; surface and mineral estates are both under BLM administration:
Total Planning Area = 1,649,470 acres
Mineral Withdrawal Area (includes some WSAs, all WSRs and all Steens Mountain Wilderness) = 748,118 acres
All other WSAs (outside of the Mineral Withdrawal Area) = 433,521 acres
Not Available due to Congressional withdrawal and the WSA IMP, including the nonimpairment criteria (Mineral Withdrawal Area, WSAs, WSRs, and the Steens Mountain Wilderness) = 1,181,639 acres

[2] Total available BLM administered acres in the Planning Area: 1,649,470 acres - 1,181,639 acres = 467,831 acres

[3] Total Closed acres in the Planning Area means acres recommended for withdrawal from locatable mining laws and closed to leasing and salable minerals activities through the RMP process.

[4] Total available BLM administered acres in the Planning Area for salable minerals includes 513 acres within the Mineral Withdrawal Area identified as open for road maintenance use by the Steens Act.

2.13.1 Goal 1 - Provide opportunities for the exploration and development of locatable minerals in a culturally- and environmentally-sound manner.

2.13.1.1 Management Framework

The General Mining Law of 1872 gives the public the basic right to explore and locate mining claims on public land. Section 102 of the FLPMA directs that the public land be managed in a manner that recognizes the nation's need for domestic sources of minerals and other resources. BLM regulations for locatable minerals management on Public Land are at 43 CFR 3802 for Wilderness and WSAs; 43 CFR 3809 for public land; and 43 CFR 3715 for mining-related use and occupancy. The Mining and Minerals Policy Act of 1970 declares that it is the continuing policy of the federal government to foster and encourage private enterprise in the development of domestic mineral resources. BLM mineral policy (1984) states that public lands shall remain open and available for mineral exploration and development unless withdrawal or other administrative action is clearly justified in the national interest.

2.13.1.2 Management Direction by Alternative

Objective. Identify land with federal mineral estate available to locatable mineral exploration and development.

Alternative A

Management of locatable mineral exploration and development would continue on lands currently open to locatable mineral activity consistent with laws, regulations, and policy, and no additional withdrawals would be proposed. Under the Andrews MFP, no mineral withdrawals were proposed. Since the MFP was written, some land was withdrawn from locatable mineral exploration and development by Congressional action and subject to nonimpairment criteria of the WSA IMP.

Approximately 467,831 acres would be open to locatable mineral exploration and development under a notice or plan of operations and no acres would be closed (Table 2.13.1).

Alternative B

The federal mineral estate in the entire Planning Area would be recommended for withdrawal (closed) to locatable mineral entry, subject to valid existing rights. Since the withdrawal would exceed 5,000 acres, Congressional notification

would be required. No acres would be open to locatable mineral exploration and development under a notice or plan of operations and approximately 467,831 acres would be closed (Table 2.13.1).

Alternative C

This alternative emphasizes protection of natural values. The following areas would be recommended for withdrawal from mineral exploration and development: all ACECs; existing BLM recreation and administrative sites; potential BLM recreation sites when development is approved; National Register eligible or listed cultural sites; significant paleontological localities; big game winter range; areas containing special status species and their habitats (which include federally-listed species and their designated critical habitat); and within 0.6 mile of sage-grouse leks. Under this alternative, approximately 212,972 acres would be open to locatable mineral exploration and development under a notice or plan of operations and 254,859 acres would be closed (Table 2.13.1).

Under this alternative, Long Draw ACEC, Pueblo Foothills ACEC, East Fork Trout Creek ACEC, Picket Rim ACEC and Tum Tum Lake ACEC (see Table 2.21.2) would be recommended for withdrawal. See Appendix K for relevant and important values in specific ACECs and Section 3.13.1 for more information on minerals management in ACECs and WSAs.

Proposed RMP

Areas recommended for withdrawal from locatable mineral exploration and development are existing BLM recreation and administrative sites; potential BLM recreation sites when development is approved; National Register listed cultural sites; significant paleontological localities; areas containing federally listed species and their designated critical habitat; and within 0.6 mile of sage-grouse leks. Approximately 447,464 acres would be open to locatable mineral exploration and development under a notice or plan of operations and 20,367 acres would be closed (Table 2.13.1 and Map 2.13.1).

Under this alternative, Tum Tum Lake ACEC is the only ACEC located outside of the Mineral Withdrawal Area and outside of WSAs that would be open to locatable mineral exploration and development under a notice or plan of operations (see Table 2.21.2). See Appendix K for relevant and important values in Tum Tum Lake ACEC and Section 3.13.1 for more information on minerals management in ACECs and WSAs.

Alternative E

No new areas would be recommended for withdrawal from locatable mineral exploration and development so that the maximum amount of land would be available. This is similar to Alternative A. Approximately 467,831 acres outside of the Mineral Withdrawal Area would be open to locatable mineral exploration and development (Table 2.13.1).

2.13.2 Goal 2 - Provide opportunities for the leasing and development of oil and gas, geothermal, and solid leasable mineral resources in a culturally- and environmentally-sound manner.

2.13.2.1 Management Framework

The continuing policy of the federal government is to foster and encourage private enterprise in the development of domestic mineral resources, as declared in the Mineral Leasing Act of 1920, as amended; the Geothermal Steam Act of 1970, as amended; and the Mining and Minerals Policy Act of 1970. Section 102 of the FLPMA directs that the public land be managed in a manner that recognizes the nation's need for domestic sources of mineral and other resources. The BLM regulations for leasable minerals management are at 43 CFR 3100 for oil and gas resources, 43 CFR 3200 for geothermal resources, and 43 CFR 3500 for solid mineral leasing. BLM mineral policy (1984) states that public lands shall remain open and available for mineral exploration and development unless withdrawn or unless other administrative action is clearly justified in the national interest.

The leasing category of each area with federal mineral estate is determined by resources present on the surface and identification of the least restrictive leasing category that would protect those resources. Leasing and development decisions also apply to geophysical exploration. From most restrictive to least restrictive, the leasing categories that must be identified for areas within the Planning Area are as follows: (1) closed to leasing or no leasing, (2) open with NSO, (3) open with seasonal or other special stipulations or both, and (4) open with standard stipulations (BLM Land Use Planning Handbook H-1601-1). Table 2.13.1 shows acres that would be closed (recommended for withdrawal as a

Table 2.13.2: Mineral Leasing Management

Resource of Concern	Applicable Closed Area	Alternative	Acres	Description
Closed to Leasing (nondiscretionary closures)				
Mineral Withdrawal Area	See leasing maps	A,B,C,PRMP, E	748,118	Includes some WSAs, all WSRs and all Steens Mountain Wilderness
WSAs outside of the Mineral Withdrawal Area	See leasing maps	A,B,C,PRMP, E	433,521	
Closed to Leasing (discretionary closures)				
ACEC values	Tum Tum Lake ACEC, Picket Rim ACEC	A B C PRMP E	0 All is closed 5,633 0 0	See Table 2.21.1 for relevant and important values in these ACECs. No leasing is allowed within the specific ACEC (Tum Tum Lake or Picket Rim) unless the values for which the ACEC was designated no longer exist and the ACEC designation is removed through an amendment to this plan. In Alternative C proactive protection of natural values is emphasized and considered a better benefit to the public than leasable mineral exploration and development.
Existing recreation and administrative sites and approved potential recreation sites	Fields Admin Site, other sites when approved	A B C PRMP E	0 All is closed 5 0 0	Sites are valuable for investments in structures, one-of-a-kind location, and steady use for recreation or administration. No leasing is allowed within these sites unless the investment in the facility or site is compensated, the site can be relocated to an acceptable location, and the location is revised in an amendment to this plan. In Alternative C proactive protection of natural values is emphasized and considered a better benefit to the public than leasable mineral exploration and development.
National Register eligible or listed cultural sites	Unnamed at request of Burns Paiute Tribe, other sites when eligible or listed	A B C PRMP E	0 All is closed 200 0 0	No leasing is allowed within these specific sites unless the values for which they are eligible or listed no longer exist, designation is removed after consultation with tribes, and the site areas are revised in an RMP amendment. In Alternative C proactive protection of natural values is emphasized and considered a better benefit to the public than leasable mineral exploration and development.

Resource of Concern	Applicable Closed Area	Alternative	Acres	Description
Significant paleontological localities	Unnamed at request of BLM archaeologist	A B C PRMP E	0 All is closed 9,352 0 0	These sites contain mammal fossils or other rare fossils. No leasing is allowed unless research determines that the locality area has changed in size and the BLM archaeologist revises the locality outline in BLM records and in an amendment to this RMP. In Alternative C proactive protection of natural values is emphasized and considered a better benefit to the public than leasable mineral exploration and development.
Big game winter range (elk, mule deer, pronghorn antelope, and big horn sheep range)	Sites shown on Map 3.6.1	A B C PRMP E	0 All is closed 245,213 0 0	Human disturbances can be detrimental to big game that are already under normal thermal and dietary stresses, and can contribute to fetal losses in pregnant does as well as mortality in adults. No leasing is allowed unless the areas of big game range change and range designation is removed through an amendment to this RMP. In Alternative C proactive protection of natural values is emphasized and considered a better benefit to the public than leasable mineral exploration and development.
Areas containing special status species and their habitat, including federally listed species and their critical habitat	Lahontan trout Special status plants Bighorn sheep range Raptor areas	A B C PRMP E	0 All is closed 41,398 0 0	Human disturbances can be detrimental to special status species and their habitat that are already under normal environmental stresses. No leasing is allowed unless the area no longer contains a special status species due to recovery or extinction, or the area is no longer its habitat, and the area is opened through an amendment to this RMP. In Alternative C proactive protection of natural values is emphasized and considered a better benefit to the public than leasable mineral exploration and development.
Within 0.6 mile of sage-grouse leks	Areas shown on Map 3.6.1	A B C PRMP E	0 All is closed 20,372 0 0	Human disturbances can be detrimental to sage-grouse breeding and nesting activities. No leasing is allowed within 0.6 mile of a sage-grouse lek unless an area is recognized in an RMP amendment as no longer in use as a sage-grouse lek. In Alternative C proactive protection of natural values is emphasized and considered a better benefit to the public than leasable mineral exploration and development.

Resource of Concern	Applicable Closed Area	Alternative	Acres	Description
Designated for NSO				
National Register listed cultural sites	Unnamed at request of Burns Paiute Tribe	A B C PRMP E	0 All is closed 0 0 0	Cultural values are rare if they are listed on the National Register. Standard stipulations would not provide sufficient protection if the site is extensive. There are currently no Natural Register listed cultural sites in the Planning Area although sites may be listed in the future. Exception: None Modification: The authorized officer may modify the size of the stipulation area if a listed area is increased or decreased due to research. Waiver: The authorized officer may waive the stipulation if the listed area is small or reduced in size so that area can be avoided under standard stipulations.
Significant paleontological localities	Unnamed at request of BLM archaeologist	A B C PRMP E	0 All is closed 0 9,352 0	Significant paleontological localities have mammal fossils or other rare fossils. Standard stipulations do not provide sufficient protection if the site is extensive. Exception: None Modification: The authorized officer may modify the size of a stipulation area if a significant paleontological locality area is increased or decreased due to research. Waiver: The authorized officer may waive the stipulation if the locality is small or reduced in size so that the area can be avoided under standard stipulations.
Designated for seasonal or other special stipulations or both				
Big game winter range (elk, mule deer, pronghorn antelope, and big horn sheep range	Sites shown on Map 3.6.1	A B C PRMP E	0 All is closed 0 245,213 0	Big game tolerance to exploration and development activities varies by species and is influenced by the intensity, duration and timing of human disturbance. Winter season disturbances can be particularly detrimental to big game that are already under normal thermal and dietary stresses. When added to winter environmental stress, human activity can result in fetal losses in pregnant does as well as mortality in adults. In areas with big game range, no leasing activities would be allowed from December 1 - April 1 of each year. Exception: The authorized officer may grant an exception if site-specific environmental analysis indicates that an action would not interfere with habitat function or compromise animal condition. Modification: The authorized officer may modify the area and

Resource of Concern	Applicable Closed Area	Alternative	Acres	Description
				timeframes of the stipulation if monitoring indicates that current animal use patterns are inconsistent with areas and dates established for animal occupation. Waiver: This stipulation may be waived by the authorized officer if monitoring determines that all or specific portions of the Planning Area no longer serve as big game winter range.
Areas containing federally listed species and their designated critical habitat	Lahontan trout, other sites when listed	A B C PRMP E	0 All is closed 0 12.7 0	Surface disturbing activities on all mineral leases are limited to existing roads until field surveys of the proposed area of disturbance is completed. These field surveys must be conducted at an appropriate time of year to enable the identification of federally listed species and their designated critical habitat. If federally listed species or their designated critical habitat are found or known to be in the area, the authorized officer may determine to not allow or to modify activities as needed. Exception: None Modification: The authorized officer may modify the size of the stipulation area if conference or consultation changes the area of designated critical habitat. Waiver: This stipulation may be waived by the authorized officer when the species is recovered or extinct, or when the habitat is no longer considered critical.
Within 0.6 mile of sage-grouse leks	Areas shown on Map 3.6.1	A B C PRMP E	0 All is closed 0 20,372 0	Sage-grouse breeding and nesting activity could be disrupted by lease activities during the strutting season. NSO is allowed within 0.6 mile of sage-grouse leks between March 1 - June 1 of each year. Exception: None Modification: The authorized officer may modify the size of the stipulation area or timing if monitoring indicates that current animal use patterns are inconsistent with areas previously considered established as sage-grouse leks. Waiver: This stipulation may be waived by the authorized officer if monitoring determines that all or specific portions of the Planning Area no longer serve as sage-grouse leks.

Maps showing areas in the various leasing categories are Map 2.13.2 and supplemental maps available from the Burns DO.
Leasing and development decisions also apply to geophysical exploration.
Under Alternative B the entire Planning Area is recommended for withdrawal (closed).
Changes requiring an RMP plan amendment will have a 30-day public review.
Acreages of some resources overlap with acreages of other resources (an area may have both special status plant species and big game winter range, for example) and so the acreage shows up under each resource; in the leasing maps and in Table 2.13.1 the overlap acreage is not shown or counted twice.

Table 2.13.3: Summary Comparison of Alternatives in Acres

Mineral Category and Resource	Acreage				
	Alternative A	Alternative B	Alternative C	Proposed RMP	Alternative E
Leasable Minerals Closed					
ACECs	0	All is closed	5,633	0	0
Existing recreation and administrative sites and approved potential recreation sites	0	All is closed	5	0	0
National Register eligible or listed cultural sites	0	All is closed	200	0	0
Significant paleontological localities	0	All is closed	9,352	0	0
Big game winter range (elk, mule deer, and pronghorn antelope) and yearlong big game range (California bighorn sheep)	0	All is closed	245,213	0	0
Areas containing special status species and their habitat, including federally listed species and their critical habitat	0	All is closed	41,398	0	0
Within 0.6 mile of sage-grouse leks	0	All is closed	20,372	0	0
NSO					
National Register listed cultural sites	0	All is closed	0	0	0
Significant paleontological localities	0	All is closed	0	9,352	0
Seasonal or other special stipulations or both. Big game winter range (elk, mule deer, and pronghorn antelope) and yearlong big game range (California bighorn sheep)	0	All is closed	0	245,213	0
Areas containing federally listed species and their designated critical habitat	0	All is closed	0	12.7	0
Within 0.6 mile of sage-grouse leks	0	All is closed	0	20,372	0

Mineral Category and Resource	Acreage				
	Alternative A	Alternative B	Alternative C	Proposed RMP	Alternative E
Locatable Minerals					
Closed					
ACECs	0	All is closed	8,856	0	0
Existing recreation and administrative sites and approved potential recreation sites	0	All is closed	5	5	0
National Register eligible cultural sites	0	All is closed	200	0	0
National Register listed cultural sites	0	All is closed	0	0	0
Significant paleontological localities	0	All is closed	9,352	9,352	0
Big game winter range	0	All is closed	245,213	0	0
Areas containing special status species and their habitat, including federally listed species and their designated critical habitat	0	All is closed	41,398	0	0
Areas containing federally listed species and their designated critical habitat	0	All is closed	12.7	12.7	0
Within 0.6 mile of sage-grouse leks	0	All is closed	20,372	20,372	0
Salable Minerals					
Closed					
ACECs	0	All is closed	5,633	1,689	0
Existing recreation and administrative sites and approved potential recreation sites	0	All is closed	5	5	0
National Register eligible cultural sites	0	All is closed	200	0	0
National Register listed cultural sites	0	All is closed	0	0	0
Significant paleontological localities	0	All is closed	9,352	9,352	0
Areas containing special status species and their habitat, including federally listed species and the designated critical habitat	0	All is closed	41,398	0	0
Areas containing federally listed species and their designated critical habitat	0	All is closed	12.7	12.7	0
Within 0.6 mile of sage-grouse leks	0	All is closed	20,372	20,372	0

Acreages of some resources overlap with acreages of other resources (an area may have both special status plant species and big game winter range, for example) and so the acreage shows up under each resource; in the minerals maps and in Table 2.13.1 the overlap acreage is not shown or counted twice. discretionary action), open with NSO, open with seasonal or other special stipulations or both, and open with standard stipulations under each management alternative. Table 2.13.2 shows areas closed to leasing that are nondiscretionary, areas closed to leasing that are discretionary, and stipulations that would be attached to leases in areas open to leasing under each management alternative.

2.13.2.2 Management Direction by Alternative

Objective. Identify leasing categories for the land.

Alternative A

Under the Andrews MFP, no leasable energy and mineral withdrawals were proposed. Later, some land was closed to leasable mineral exploration and development by Congressional action and through the WSA IMP. Consistent with the Andrews MFP, Steens Act, and WSA IMP, no new areas would be closed to leasing under this alternative and approximately 467,831 acres would be open to leasing under standard leasing stipulations until publicly reviewed environmental analysis prior to leasing indicates otherwise (Table 2.13.1). Areas of NSO would be identified prior to leasing in a publicly reviewed environmental analysis in order to protect those areas where natural values would be impaired by surface disturbance. Areas would be designated for seasonal or other special stipulations or both in a publicly reviewed environmental analysis prior to leasing in order to protect areas where natural values would be impaired by seasonal or other special leasing activities. No new lease sales are planned until after completion of the Final RMP/ROD.

Alternative B

The federal mineral estate in the entire Planning Area would be recommended for withdrawal (closed) to leasable energy and mineral exploration and development. Approximately 467,831 acres beyond those already closed by Congressional action and WSA IMP would be closed to energy and mineral leasing (Table 2.13.1).

Alternative C

This alternative emphasizes protection of natural values. Areas that would be recommended for withdrawal (closed) to leasable energy and mineral exploration and development include all ACECs; existing BLM recreation and administrative sites; potential BLM recreation sites when development is approved; National Register eligible or listed cultural sites; significant paleontological localities; big game winter range; areas containing special status species and their habitat (which include areas containing federally-listed species and their designated critical habitat); and within 0.6 mile of sage-grouse leks.

Approximately 254,859 acres would be closed to leasable energy and mineral exploration and development, in addition to those areas already closed by Congressional action and the WSA IMP. No acres would be subject to NSO or seasonal or other special stipulations. Approximately 212,972 acres would be open to leasing under standard leasing stipulations (Table 2.13.1).

ACECs in the Planning Area are within the Mineral Withdrawal Area and are already withdrawn from leasable energy and mineral exploration and development or are in WSAs and subject to no leasing under the WSA IMP, with the exception of Picket Rim ACEC and Tum Tum Lake ACEC. See Section 3.13.1 for more information on minerals management in ACECs and WSAs. See Appendix K for relevant and important values in Picket Rim ACEC and Tum Tum Lake ACEC.

Proposed RMP

No new areas would be closed to leasing. Areas of NSO would include National Register listed cultural sites and significant paleontological localities. Areas of seasonal or special stipulations would include big game winter range, areas containing federally listed species and their designated critical habitat, and within 0.6 mile of sage-grouse leks.

No acres would be closed to leasable energy and mineral exploration and development beyond those areas already closed by Congressional action and WSA IMP. Approximately 9,355 acres would be subject to NSO stipulations.

Approximately 241,683 acres would be subject to seasonal or other special stipulations or both. Approximately 216,793 acres would be open to leasing under standard leasing stipulations (Table 2.13.1 and Map 2.13.2).

Most of the ACECs in the Planning Area are within the Mineral Withdrawal Area and are already withdrawn from leasable energy and mineral exploration and development or are in WSAs and subject to no leasing under the WSA IMP. Under this alternative, Tum Tum Lake ACEC is the only ACEC located outside of the Mineral Withdrawal Area and outside of WSAs that would be open to leasing, and it would be open under standard lease stipulations except where it contains values listed for NSO or seasonal or other special stipulations under this alternative. Map 2.13.2 shows that the Tum Tum Lake ACEC area is open with seasonal or other special stipulations, and that is because it is within deer winter range. See Section 3.13 for more information on minerals management in ACECs and WSAs. See Appendix K for relevant and important values in Tum Tum Lake ACEC.

Alternative E

No new areas would be closed to leasing under this alternative. All areas would be available for surface occupancy except as restricted by laws and regulations. No seasonal or other special stipulations would be applied except as required by laws and regulations.

No acres would be closed to leasable energy and mineral exploration beyond those areas closed by Congressional action and WSA IMP. No acres would be subject to NSO stipulations. No acres would be subject to seasonal or other special stipulations. Approximately 467,831 acres would be open to leasing under standard leasing stipulations (Table 2.13.1).

2.13.3 Goal 3 - Provide opportunities for the production of salable minerals by local, state, and federal agencies and the public in a culturally- and environmentally-sound manner.

2.13.3.1 Management Framework

The Materials Act of 1947, as amended, authorized the disposal of mineral materials such as sand and gravel. Section 102 of the FLPMA directs that public land would be managed in a manner that recognizes the nation's need for minerals and other resources. BLM regulations for salable minerals management on federal mineral estate are at 43 CFR 3600. The Mining and Minerals Policy Act of 1970 declares that the continuing policy of the federal government is to foster and encourage private enterprise in the development of domestic mineral resources. BLM mineral policy (1984) states that public land shall remain open and available for mineral exploration and development unless withdrawal or other administrative action is clearly justified in the national interest. The BLM Mineral Materials Manual states that it is BLM policy to dispose of mineral materials provided that adequate measures are taken to protect the environment and damage to public health and safety is minimized.

Development of salable minerals on open BLM administered land and determination of site-specific mitigation measures are discretionary decisions that are made on a case-by-case basis subject to the judgement and final decision of the BLM authorized officer (Andrews Field Manager).

2.13.3.2 Management Direction by Alternative

Objective. Permit development of mineral materials sources on a case-by-case basis in areas where development does not conflict with other resource values.

Alternative A

Salable minerals removal would be permitted throughout the Planning Area on a case-by-case basis except where it is already closed by Congressional action and the WSA IMP. Salable mineral materials would be removed from existing sources, and from new sources identified in areas open to salable minerals. Approximately 468,344 acres would be open to salable minerals development (Table 2.13.1).

Alternative B

The federal mineral estate in the entire Planning Area would be closed to salable minerals development. Approximately 468,344 acres beyond those already closed by Congressional action and the WSA IMP would be closed to salable

minerals, except where required by law or where essential to protect human safety such as road construction under critical or emergency conditions (Table 2.13.1).

Alternative C

Permit salable minerals development throughout the Planning Area on a case-by-case basis except on land already closed by Congressional action or the WSA IMP; in any ACECs; existing BLM administrative and recreation sites; potential BLM recreation sites; National Register eligible or listed cultural sites; significant paleontological localities; areas containing special status species and their habitat (which include areas containing federally-listed species and their designated critical habitat); and within 0.6 mile of sage-grouse leks.

Under this alternative, which emphasizes protection of natural values, approximately 213,207 acres would be open to salable minerals development and 255,137 acres would be closed (Table 2.13.1).

Most of the ACECs in the Planning Area are within the Mineral Withdrawal Area and are already withdrawn from salable minerals development or are in WSAs and closed to salable minerals activities under the WSA IMP. Under this alternative, Picket Rim ACEC and Tum Tum Lake ACEC would be closed to salable minerals development. See Section 3.13 for more information on minerals management in ACECs and WSAs.

Proposed RMP

Salable minerals development would be permitted throughout the Planning Area on a case-by-case basis except on land already closed by Congressional action and the WSA IMP; in any ACECs; existing BLM administrative and recreation sites; potential BLM recreation sites; National Register listed cultural sites; significant paleontological localities; areas containing federally listed species and their designated critical habitat; and within 0.6 mile of sage-grouse leks.

Under this alternative, approximately 446,287 acres would be open to salable minerals and 22,057 acres would be closed (Table 2.13.1and Map 2.13.3).

ACECs in the Planning Area are within the Mineral Withdrawal Area and are already withdrawn from salable minerals development or are in WSAs and closed to salable minerals activities under the WSA IMP with the exception of Tum Tum Lake ACEC. Under this alternative, Tum Tum Lake ACEC would be closed to salable minerals development. See Section 3.13.1 for more information on minerals management in ACECs and WSAs.

Alternative E

Salable minerals disposal under this alternative would be similar to Alternative A except that no new areas would be closed to salable minerals other than those already closed by Congressional action and WSA IMP. Approximately 468,344 acres would be open to salable minerals development and no acres would be closed (Table 2.13.1).

2.13.4 Monitoring

See Appendix Q.

2.14 Wild Horses and Burros

2.14.1 Goal – Manage and maintain healthy wild horse herds in established HMAs at AMLs to maintain a thriving natural ecological balance between wild horse populations, wildlife, livestock, vegetation resources, and other resource values. Enhance and perpetuate the special or rare and unique characteristics that distinguish the respective herds.

2.14.1.1 Management Framework

The Wild Free-Roaming Horses and Burros Act of 1971, as amended, requires the BLM to protect and manage wild horses in areas where they were found at the time this act was passed, and in a manner designed to achieve and maintain a thriving ecological balance in keeping with the public land multiple use concept. BLM policy regulations direct that wild horses shall be managed as self-sustaining populations of healthy animals. The physical traits of members of various herds are historic characteristics and are desirable to retain and maintain.

2.14.1.2 Management Direction by Alternatives

Objective 1. Designate/Retain/Adjust Herd Management Areas.

Alternative A

The existing HMAs would be retained (see Table 2.14.1).

Alternatives B and C

The existing HMAs would be retained, except for the following modifications: the Alvord-Tule Springs HMA (Burns District) would be combined with the Coyote Lake HMA (Vale District) and managed under the guidelines and decisions of the SEORMP (USDI 2002); the Kiger HMA would be reduced in acreage and its boundary changed to reflect the legislated Steens land exchanges; the South Steens HMA would be reduced in acreage and its boundary changed to reflect the legislated Steens land exchanges and the removal of the Ankle Creek Basin portion of the "No Livestock Grazing Area" (see and Table 2.14.1).

Proposed RMP

The existing HMAs would be retained, except for the following modifications: the Alvord-Tule Springs HMA (Burns District) would be combined with the Coyote Lake HMA (Vale District) and managed under the guidelines and decisions of the SEORMP (USDI 2002); the Kiger HMA would be reduced in acreage and its boundary changed to reflect the legislated Steens land exchanges; the South Steens HMA would be reduced in acreage and its boundary changed to reflect the legislated Steens land exchanges (see Map 2.14.1and Table 2.14.1).

Alternative E

The existing HMAs would be retained, except for the following modifications; the Alvord-Tule Springs HMA (Burns District) would be combined with the Coyote Lake HMA (Vale District) and managed under the guidelines and decisions of the SEORMP (USDI 2002); the Kiger HMA would be reduced in acreage and its boundary changed to reflect the legislated Steens land exchanges; the net size of the South Steens HMA would be increased and its boundary changed to reflect the addition of a portion of the No livestock Grazing Area known as the Dry Creek and Big Springs Pastures of the Fish Creek-Big Indian Allotment (#06003), the addition of that part of the South Steens Herd Area that includes Serrano Point Allotment (#6019), Carlson Creek Allotment (#6027), and Bone Creek and Miners Field pastures in the Alvord Peak Allotment (#6038), and the loss of public land acreage due to the legislated Steens land exchanges (see Table 2.14.1).

Objective 2. Designate/Retain/Adjust Herd Areas in inactive status.

Alternative A

Retain all of two Herd Areas and a portion of a third Herd Area in inactive status (see Table 2.14.2).

Alternatives B and C

All of two Herd Areas in inactive status would be retained. A portion of the Kiger Herd Area would be designated inactive to reflect the loss of public land resulting from the Steens land exchanges. The inactive portion of the South Steens Herd Area would be increased in size to reflect the addition of the Ankle Creek Basin Portion of the No Livestock Grazing Area and the changes in land ownership resulting from the Steens land exchanges (see Table 2.14.2).

Proposed RMP

All of two Herd Areas in inactive status would be retained. A portion of the Kiger Herd Area would be designated inactive to reflect the loss of public land resulting from the Steens land exchanges. The inactive portion of the South Steens Herd Area would be increased in size to reflect the changes in land ownership resulting from the Steens land exchanges (see Map 2.14.1 and Table 2.14.2).

Alternative E

All of two Herd Areas in inactive status would be retained. A portion of the Kiger Herd Area would be designated inactive to reflect the loss of public land resulting from the Steens land exchanges. The inactive portion of the South Steens Herd Area would be decreased in size to reflect the increase of the South Steens HMA to include the Serrano Point Allotment (#6019), Carlson Creek Allotment (#6027), and Bone Creek and Miners Field pastures in the Alvord Peak Allotment (#6038) as well as to reflect the change in land ownership resulting from the legislated Steens land exchange (see Table 2.14.2).

Objective 3. Maintain/Adjust AMLs and yearlong forage allocations for each HMA.

Alternative A

The current AMLs and wild horse forage allocations would be maintained in all HMAs (see Table 3.14.1).

Proposed RMP and Alternatives B, C, and E

The current AMLs and wild horse forage allocations would be maintained in all HMAs (See Table 3.14.1). Permanent increases or decreases in AML and forage allocations would be considered if the analysis of monitoring data indicates changes in long-term forage availability.

Objective 4. Maintain a thriving natural ecological balance within HMAs.

Alternative A

Wild horses would be periodically gathered and removed based on rangeland monitoring studies, climatic conditions, census data, and the occurrence of catastrophic events such as wildland fire and drought. Wild horse numbers would be reduced to the low end of the AML range when gathering is conducted.

HMA perimeter fences would be maintained. Any wild horses that stray outside HMA boundaries would be removed or returned to the HMA. Gates in interior pasture division fences would be managed and modified, if necessary, to maximize horse access to the HMA.

Table 2.14.1: Wild Horse Herd Management Area Acres by Alternative

Total Acres of Public Lands					
HMA	**Alternative A**	**Alternative B**	**Alternative C**	**Proposed RMP**	**Alternative E**
Alvord-Tule Springs-Coyote Lake	343,201	556,981	556,981	556,981	556,981
Heath Creek/ Sheepshead	62,427	198,843	198,843	198,843	198,843
Kiger	38,359	26,873	26,873	26,873	26,873
Riddle Mountain	28,346	28,346	28,346	28,346	28,346
South Steens	127,838	102,343	102,343	126,732	182,485
Total	**600,171**	**913,387**	**913,387**	**937,775**	**993,528**

Table 2.14.2: Wild Horse Herd Area Acres in Inactive Status by Alternatives

Total Acres of Public Lands					
Herd Area	**Alternative A**	**Alternative B**	**Alternative C**	**Proposed RMP**	**Alternative E**
Kiger	0	157	157	157	157
Pueblo-Lone Mountain	233,084	233,084	233,084	233,084	233,084
South Catlow	42,078	42,078	42,078	42,078	42,078
South Steens	58,947	84,444	84,444	60,055	15,983
Total	**334,109**	**359,763**	**359,763**	**335,374**	**291,302**

Proposed RMP and Alternatives B, C, and E

Wild horse numbers would be managed through gathering, removal, and other approved methods of population control. The initiation of gathering or other methods of population control would be based on census data, herd health, rangeland health, and productivity, as determined by rangeland monitoring studies, as well as climatic condition, and the occurrence of catastrophic events such as wildland fire and drought. Wild horse numbers would normally be reduced to the low end of the AML range when gatherings are conducted.

Perimeter fences would be maintained. Any wild horses that stray outside HMA boundaries would be removed or returned to the HMA. Gates in interior pasture division fences would be managed and modified, if necessary, to maximize horse access to the HMA.

Objective 5. Maintain/Improve year-round water sources to sustain wild horse herds.

Alternative A

Water sources that are critical to wild horses would be maintained.

Alternatives B and C

Management would maintain water sources that are critical to wild horses; develop additional water sources in areas where greater animal distribution would benefit natural processes and values and where water is lacking during periods of drought; and acquire legal access to private water sources that are critical to wild horses.

Proposed RMP

Management would maintain water sources that are critical to wild horses; develop additional water sources to improve animal distribution and provide more stable water sources during periods of drought; and seek cooperative management agreements for access to or acquire legal access to private water sources that are critical to wild horses.

Alternative E

Management would maintain water sources that are critical to wild horses and develop additional water sources to improve animal distribution and provide water during periods of drought.

Objective 6. Maintain herd viability, genetic diversity, and the genetic and physical characteristics that distinguish individual herds.

Alternative A

A 50:50 male/female sex ratio and a diverse age structure would be maintained. New animals would occasionally be introduced to small herds to maintain genetic diversity.

Wild horses returned to the HMA after a gather and those introduced from other HMAs would possess characteristics representative of the herd's conformation, size, unique markings, and color.

Proposed RMP and Alternatives B, C, and E

A diverse age structure and sex ratios ranging from 40 to 50 percent female and 50 to 60 percent male would be maintained. Wild horses returned to the HMA after a gather would possess representative characteristics of the herd's conformation, size, color, and unique markings. New animals from other HMAs would be introduced when needed to increase the diversity of the genome or maintain the herds' characteristics.

2.14.2 Monitoring

See Appendix Q.

2.15 Grazing Management

2.15.1 Goal - Manage for a sustained level of livestock grazing while maintaining healthy public land resources.

2.15.1.1 Management Framework

The Taylor Grazing Act of 1934 provides the basic legislative authority for livestock grazing on public lands, with provisions for protection of the lands from degradation and for orderly use and improvement of public rangelands. The Taylor Grazing Act established a system for the allotment of grazing privileges to livestock operators based on grazing capacity and use priority, and for the delineation of allotment boundaries. It also established standards for rangeland improvements and implemented grazing fees. Approximately 142 million acres of land in the western United States were placed under the jurisdiction of the Grazing Service, which became the BLM in 1946. The FLPMA and PRIA mandate the management of public land for multiple use and sustained yield. Specifically, the regulations implementing these acts call for rangeland management strategies that provide forage for economic use as well as for the maintenance or restoration of watershed function, nutrient cycling, water quality, and habitat quality for special status species and native plants and animals. These management strategies have been supported and implemented by the development of national policies and the S&Gs. The five specific applicable Standards are described in Chapter 3, Section 3.15.2, and in Appendix G.

2.15.1.2 Management Direction by Alternative

Objective 1. Provide for a sustained level of livestock grazing in the AMU and the CMPA, while meeting resource objectives and requirements for the S&Gs.

Management Common to All Alternatives Except Alternative B

No livestock grazing would occur on public lands within the Congressionally designated No Livestock Grazing Area.

Where livestock grazing is found to limit achievement of standards and multiple use objectives, management changes would be required in order to meet habitat and other resource objectives. The intent of grazing management is to maintain sufficient herbaceous material to provide adequate soil and watershed protection, to provide forage and cover for wildlife and wild horses, and to meet other resource objectives. Wherever existing grazing management practices on public land are determined to be contributing to nonattainment of standards and other resource objectives, appropriate actions would be implemented.

Areas burned by wildland or prescribed fire would be rested for a minimum of two growing seasons before being reopened to grazing, and then only when monitoring data support resumption of grazing. Rest for less than two growing seasons may be justified on a case-by-case basis, based upon resource data and plant community requirements.

Alternative A

Livestock grazing use would continue to be authorized in the AMU and in the CMPA outside of the No Livestock Grazing Area, consistent with the existing land use plan, PL106-399, the S&Gs (USDI 1997a), and applicable activity plans.

The utilization level as measured at the end of the growing season is managed on a pasture average basis to not exceed 60 percent on nonnative seedings and 50 percent on native herbaceous forage plants, except where lower use levels may be necessary to prevent detrimental effects on habitat quality for sage-grouse.

Additional forage, periodically available as the result of favorable growing conditions, would be made available to qualified applicants through temporary nonrenewable (TNR) grazing authorizations as consistent with management objectives for existing land use plans and applicable activity plans.

Alternative B

Livestock grazing would be eliminated from all public lands in the Planning Area.

Alternative C

Nonconsumptive uses would be emphasized in the Planning Area while providing for minimal sustainable livestock grazing that meets allotment management (natural resource) objectives, and the S&Gs (USDI 1997a).

Unless specifically needed as a vegetation management tool, the utilization level as measured at the end of the growing season would not exceed 50 percent on nonnative seedings and 40 percent on native herbaceous forage plants, on a pasture average basis.

Additional forage production, available during years of favorable growing conditions, would not be made available to livestock through TNR authorizations. The additional forage would be retained on site for values other than livestock production.

Proposed RMP

Management actions would provide for sustainable livestock grazing in the Planning Area that meets allotment management (natural resource) objectives, and the S&Gs (USDI 1997a). Revision of AMPs would be based on evaluations and rangeland health assessments, which would determine allowable AUMs and plant community management.

Unless specifically needed as a vegetation management tool, the utilization level as measured at the end of the growing season would not exceed 60 percent on nonnative seedings and 50 percent on native herbaceous forage plants, on a pasture average basis, except where lower use levels may be necessary to prevent detrimental effects on habitat quality for sage-grouse.

Unless grazing is specifically needed as a vegetation management tool within the Planning Area, the following specific areas totaling 8,971 public land acres would be excluded from livestock grazing: Mud Creek Exclosure, Getty Spring Exclosure, Mickey Basin RNA/ACEC Exclosure, Mickey Hot Spring Proposed ACEC Exclosure, Alvord Slough Exclosure, Borax Lake ACEC Exclosure, Tum Tum Lake RNA/ACEC Exclosure, Mann Lake Recreation Area, Burke Spring Exclosure, Pueblo Slough Exclosure, Lily Lake Exclosure, Fish Lake Campground Exclosure, and Jackman Park Campground Exclosure. Grazing would be excluded from the Highway 205 Pasture of the LaVoy Tables Allotment, but trailing would be allowed. See Map 2.15.1.

TNR grazing use may be authorized to make additional forage available to livestock operators in years of favorable growing conditions, consistent with meeting resource objectives. Resource objectives may include reducing competition between undesirable annual species and desirable perennial species or reducing the quantity of standing, dead herbaceous material in nonnative seedings.

Alternative E

To the extent possible grazing opportunities would be maximized in the Planning Area while meeting the S&Gs (USDI 1997a).

Unless specifically needed as a vegetation management tool, the utilization level as measured at the end of the growing season would not exceed 60 percent on herbaceous plants in both uplands and nonnative seedings, on a pasture average basis, except where lower use levels may be necessary to prevent detrimental effects on habitat quality for sage-grouse.

Optimize authorization of TNR grazing use of additional production in years of favorable growing conditions, consistent with meeting resource objectives.

Objective 2. Implement administrative solutions and rangeland projects to provide proper management for livestock grazing while meeting resource objectives and requirements for S&Gs (USDI 1997a).

Alternative A

Interim and long-term grazing management and stocking levels would continue to be adjusted in accordance with results of monitoring studies, allotment evaluations, and rangeland health assessments. Accepted livestock management practices would continue to be implemented (e.g. adjustment of the timing, duration, frequency of grazing, and periodic rest or deferment). These practices would continue to be supplemented by administrative actions (e.g. season of use changes, stocking level adjustments, exclusionary pastures or rangeland projects) to accomplish natural resource management objectives.

New rangeland improvement projects could be implemented to open under-utilized areas to grazing and relieve the grazing pressure on other areas. Existing projects would be maintained if they continue to support livestock grazing or other purposes. Projects that do not function to support grazing would be abandoned and the sites rehabilitated.

Alternative B

Since no livestock grazing would be authorized, no new rangeland improvement projects in support of livestock grazing would be planned or implemented. All existing rangeland projects that exclusively supported livestock grazing would be abandoned and removed, or rehabilitated.

Alternative C

Administrative actions (e.g. season of use changes, stocking level adjustments, exclusion of livestock from specific areas) would be emphasized to accomplish natural resource management objectives. Rangeland projects or accepted livestock management practices would be implemented when administrative actions alone would not accomplish natural resource objectives. Rangeland projects that do not function to enhance resource values or assist in meeting management objectives would be removed, and project sites would be rehabilitated.

Proposed RMP

Interim and long-term grazing management and stocking levels would be adjusted in accordance with results of monitoring studies, allotment evaluations, and rangeland health assessments. Accepted livestock management practices (e.g. adjustment of the timing, duration, frequency of grazing, or periodic rest or deferment) would be implemented. These would be supplemented by administrative actions (e.g. season of use changes, stocking level adjustments, exclusionary pastures) or rangeland projects to accomplish natural resource management objectives.

New rangeland improvement projects could be implemented within the AMU to open under-utilized areas to grazing and relieve the grazing pressure on other areas. Within the CMPA, new projects must be consistent with the purpose and objectives of the CMPA. Existing projects within the Planning Area would be maintained if they support livestock grazing or other uses. Existing projects that do not function to support grazing or other uses within the AMU would be abandoned and the sites rehabilitated. Existing projects within the CMPA that do not function to support grazing, other uses, or promote the purpose or the objectives of the CMPA would be modified or abandoned and the sites rehabilitated.

Alternative E

Rangeland projects and accepted livestock practices would be emphasized as the preferred solution to meet natural resource management objectives. Administrative actions would be applied when structural developments or accepted livestock management practices would not accomplish natural resource management objectives.

New rangeland improvement projects could be implemented to open under-utilized areas to grazing and relieve the grazing pressure on other areas. Existing projects would be maintained if they continue to support livestock grazing. Projects that do not function to support grazing would be abandoned and the sites rehabilitated.

2.15.2 Monitoring

See Appendix Q.

2.16 Wildland Fire Management

2.16.1 Goal 1 - Provide an appropriate management response to all wildland fires emphasizing firefighter and public safety.

2.16.1.1 Management Framework

Firefighter and public safety are the highest priority during all wildland fire incidents. Once life safety has been secured, protection of private property and natural and cultural resources becomes the priority in suppression actions.

The Federal Wildland Fire Management Policy and Program Review (USDA/USDI, 1995) states that fire is a critical natural process and that it must be reintroduced into the ecosystem on a landscape scale. In many areas, this should occur at a higher frequency (shorter return interval) than has been the case over the past 50 or more years. Wildland fire evaluations and management decisions are based upon approved fire management and activity level plans that are or would be tiered to current and future RMPs. The Policy emphasizes that for all natural (i.e., lightning-caused) ignitions, the manager should be able to choose from the full spectrum of management actions from prompt and full suppression to allowing a wildland fire to burn freely and function in its natural ecological role. Wildland fire management strategies and suppression activities should minimize damage to long-term ecosystem function and emphasize the protection, restoration, or maintenance of key habitat types.

A Fire Management Plan (FMP) would be developed for the Burns District, including the Planning Area. Wildland Urban Interface (WUI) areas would be identified in the FMP. Fire suppression actions within the Planning Area would follow current agency policy. Firefighter and public safety are the first priority in all fire management actions. All naturally ignited wildland fires would be evaluated to determine whether they are appropriate for wildland fire use to achieve resource benefits. Fire suppression actions, including the use of heavy equipment and aerially delivered retardant, would follow current agency policies and procedures.

2.16.1.2 Management Direction by Alternative

Objective 1. Implement appropriate fire suppression actions in the WUI and areas identified as possessing significant values that could be significantly altered by unplanned wildland fire. Pursue cooperative management agreements with private landowners to cooperatively manage wildland fire.

Management Common to All Alternatives

All wildland fires would be suppressed using appropriate management actions. An FMP would be developed for the Burns District, including the Planning Area.

Alternative A

Under current management, WUI areas have not been identified in the Burns District.

The Proposed RMP and Alternatives B, C and E

WUI areas around the communities of Andrews, Burns, Crane, Diamond, Drewsey, Fields, Frenchglen, Lawen, Princeton, Riley, Wagontire, and other areas within the Burns Interagency Fire Zone where there is a concentration of structures that may modify fire suppression objectives, would be identified in the FMP.

Objective 2. Implement the appropriate management actions upon discovery of wildland fires in areas outside of the designated WUI or areas that possess significant values that could be impaired by uncontrolled wildland fire. Pursue cooperative management agreements with private landowners to cooperatively manage wildland fire.

Alternative A

All wildland fires would continue to be suppressed using appropriate fire management methods.

Alternative B

All wildland fires that threaten human life, private property, or areas that possess significant resource value would be suppressed using appropriate fire management methods. Wildland fires would be evaluated to determine whether they are appropriate for wildland fire use for resource benefits. Factors that would affect the decision to suppress or manage for resource benefits would include, but not be limited to; threats to human life, availability of resources to manage the fire, and number of fires burning locally, regionally and nationally. The appropriate suppression action would be implemented on all wildland fires that are not suitable for wildland fire use.

Alternative C

Same as Alternative B.

Proposed RMP

All wildland fires that threaten human life, private property, or areas that possess significant resource or economic value would be suppressed using appropriate fire management methods. Wildland fires that do not threaten human life or private property would be evaluated for the potential of wildland fire use for resource benefits. Factors that would affect the decision to suppress or manage for resource benefits would include, but not be limited to; threats to human life, availability of resources to manage the fire, and number of fires burning locally, regionally and nationally.

Alternative E

Same as Alternative A.

2.16.2 Goal 2 - Restore and maintain the integrity of ecosystems consistent with appropriate fire regimes and land uses.

2.16.2.1 Management Framework

Fire is recognized as an ecological process. However, past management actions have intentionally and unintentionally altered the role of fire in the Planning Area. Changes to the role of fire have resulted fuel loads outside the historic range of variability and has increased the risk and probability of large, catastrophic wildland fires. Naturally ignited wildland fires may not occur in appropriate locations or timing to achieve desired ecosystem conditions; therefore, prescribed fire and mechanical treatments may be used to reduce hazardous fuels and restore ecosystems.

Unplanned wildland fires may also burn with greater intensity than historically. The severity of these fires may result in altered biological and, in some instances, physical conditions. Plants that have adapted to periodic burning over many generations may be severely damaged, or killed by the high intensity fire. Soils may also be physically altered by the high intensity fires. The risk of soil erosion may also be uncharacteristically increased following high intensity fires that severely damage the understory vegetation. Management actions may be necessary following high intensity fires to stabilize the site and rehabilitate area. The primary goal of Emergency Stabilization and Rehabilitation, after protecting human life and private property, is to protect the site from degradation. The BLM's Emergency Fire Rehabilitation Handbook (H-1742-1) outlines the process for implementing emergency fire rehabilitation projects following wildland fires. Emergency fire rehabilitation funds may be used for the following purposes:

- to protect life, property, and soil, water, and vegetation resources;
- to prevent unacceptable on-site or off-site damage;
- to facilitate meeting land use plan objectives and complying with applicable laws; and
- to reduce the invasion and establishment of undesirable or invasive plant species.

2.16.2.2 Management Direction by Alternative

Objective 1. Implement management actions across the Planning Area that maintain or return plant communities to the historic fire regime, except where changes to the biophysical environment have progressed to the point that a return to historic conditions is impractical. In areas where the biophysical environment has changed significantly and a return to historic conditions is not possible or ecologically desirable, the appropriate fire regime would be determined based upon current conditions. Management actions would be implemented to establish the appropriate fire regime.

Management Common to all Alternatives

MRDG would be followed prior to fuels treatment within the Wilderness or WSA.

Alternative A

Mechanical treatments and prescribed fire or both would continue to be used to reduce hazardous fuel accumulations and for the restoration of ecosystems across the Planning Area.

Alternative B

WUI and other areas with resource values that are suitable for fuels reduction treatment would be identified. Mechanical treatments and prescribed fire or both would be used to reduce fuel loading in areas where the fire regime has been altered. Naturally ignited fires will be evaluated for resource benefits.

Alternative C

Same as Alternative B.

Proposed RMP

WUI and other areas with resource values that are suitable for fuels reduction treatment would be identified. Mechanical treatments and prescribed fire or both would be used to reduce fuel loading in areas where the fire regime has been altered. Naturally ignited fires would be evaluated for resource benefits. The BLM would assist local government in developing new markets for byproducts from fuels reduction treatments.

Alternative E

WUI and other areas with resource values that are suitable for fuels reduction treatment would be identified. Mechanical treatments and prescribed fire or both would be used to reduce fuel loading in areas where the fire regime has been altered. The BLM would assist local government in developing new markets for byproducts from fuels reduction treatments.

Objective 2. Assess burned areas for appropriate biological and physical rehabilitation activities.

Management Common to all Alternatives

Stabilization and rehabilitation activities will follow current BLM regulations and guidelines (Departmental Manual 620 DM 3). Selection of stabilization and rehabilitation methods will occur after site specific analysis and follow the Interagency Burned Area Stabilization and Rehabilitation Handbook. MRDG will be followed prior to stabilization and rehabilitation activities within the Wilderness or WSA.

Alternative A

All burned areas would continue to be evaluated for rehabilitation actions. A combination of mechanized and nonmechanized equipment would continue to be used to rehabilitate areas altered by fire suppression activities. Burned areas would be evaluated for the necessity of seeding. Species considered for revegetation following wildland fire would include native and introduced varieties adapted to local systems.

Alternative B

All burned areas would be evaluated for rehabilitation actions. A combination of mechanized and nonmechanized equipment would be used to rehabilitate areas altered by fire suppression activities. A mixture of native plant species would be used to rehabilitate burned areas where natural recovery is observed or expected to be limited.

Alternative C

All burned areas would be evaluated for rehabilitation actions. A combination of mechanized and nonmechanized equipment would be used to rehabilitate areas altered by fire suppression activities. A mixture of native plant species would be used to rehabilitate burned areas where natural recovery is observed or expected to be limited.

Proposed RMP

All burned areas would be evaluated for rehabilitation actions. A combination of mechanized and nonmechanized equipment would be used to rehabilitate areas altered by fire suppression activities. A mixture of native and introduced plant species would be considered for stabilization and rehabilitation projects based on an analysis of site specific conditions and species availability.

Alternative E

All burned areas would be evaluated for rehabilitation actions. A combination of mechanized and nonmechanized equipment would be used to rehabilitate areas altered by fire suppression activities. A mixture of native and introduced plant species would be used to provide maximum economic production.

2.16.3 Goal 3 - Identify areas that qualify for suitable fuels reduction treatments to protect urban interface areas, resource developments, and other resource values.

2.16.3.1 Management Framework

Although the desirability of increasing fire frequencies in many areas is well established and is described above, current fuel loads are sufficiently high that wildland fires or prescribed burns may result in severe fires that are harmful to soil conditions and other habitat values. In such areas, mechanical reduction in fuel quantity or alteration of the fuels' character may be needed to reduce prescribed or wildland fire risks.

2.16.3.2 Management Direction by Alternative

Objective. Develop a management strategy that specifically identifies the WUIs, resource values, and resource developments that need to be considered for fuels reduction planning throughout the Planning Area. Pursue cooperative management agreements with private landowners and other state and federal land management agencies to cooperatively manage vegetation and fuels within the WUI.

Alternative A

There is currently no management direction concerning WUI areas or areas within the Burns Interagency Fire Zone possessing significant resource values.

Proposed RMP and Alternatives B, C, and E

WUIs areas around the communities of Andrews, Burns, Crane, Diamond, Drewsey, Fields, Frenchglen, Lawen, Princeton, Riley, Wagontire, and other areas would be identified in the FMP according to the current WUI definition. Areas within the Burns Interagency Fire Zone that possess significant resource values would be identified.

2.16.4 Monitoring

See Appendix Q.

2.17 Lands and Realty

2.17.1 Goal - Provide lands, interests in land, and authorizations for public and private uses while maintaining and improving resource values and public land administration.

2.17.1.1 Management Framework

Section 102 of the FLPMA requires that public land be retained in federal ownership unless disposal of a particular parcel would serve the national interest. Acquisition and disposal of land are necessary to consolidate ownership patterns to provide for more efficient land management and administration for both public and private land owners. Retention and acquisition of land containing important resource values would provide for long-term protection and management of those values.

ROWs and other land uses including wind, solar, biomass, and other forms of renewable energy development are recognized as valid uses of the public lands and are authorized pursuant to sections 302 and 501 of the FLPMA.

The BLM has new policy guidance on military activities and both renewable and nonrenewable sources of energy. Many of these types of public land uses are typically authorized by ROWs or other realty use authorizations. The policies provide consistent guidance on timely processing of applications for these uses and recognize that military and energy uses are legitimate uses of public lands, are authorized by law, and are encouraged in acceptable areas on public lands.

Section 503 of the FLPMA provides for the designation of ROW corridors and encourages utilization of ROWs in common to minimize environmental effects and the proliferation of separate ROWs. BLM policy, as described in BLM Manual 2801.13B1, is to encourage prospective applicants to locate their proposals within corridors. Designation of avoidance and exclusion areas would provide early notice to potential applicants when they are planning ROW, realty use, and renewable energy projects. Only facilities and uses that are consistent with the specially designated avoidance areas would be permitted. Designation of exclusion zones would provide protection of lands and resources that have values incompatible with ROW, realty, and renewable energy uses.

The primary form of authorization for wind and solar projects would be a ROW or other realty use authorization. Although off-lease infrastructure such as roads, pipelines, and powerlines would be permitted by realty authorizations, the primary authority for geothermal development is the Geothermal Steam Act of 1970. Management actions and the effects of geothermal leasing may be found in the Energy and Minerals section of this document.

Both hazardous and nonhazardous waste disposal are prohibited on public lands to limit the United States' potential liability associated with the disposal of wastes. Private lands are generally available for private waste disposal. If a bonafide public need for new waste disposal sites arises, land could be made available by sale or exchange. Currently, no authorized waste disposal sites are located on public lands in the Planning Area.

Unauthorized uses of public lands result in financial loss to the United States and damage to the public land and its resources. Section 102(a)(9) of the FLPMA establishes the policy of the United States to collect fair market value for use of the public lands. Unless uses are authorized, no compensation is received. Further, Section 303(g) of the FLPMA states that "use, occupancy, or development of any portion of the public lands contrary to any regulation of the Secretary or other responsible authority, or contrary to any order issued pursuant to any such regulation, is unlawful and prohibited."

Due to the generally intermingled nature of public and private lands in some parts of the Planning Area, the need for acquisition of legal public and administrative access is required to continue effective administration and public use of these lands. This need becomes more acute as public use of these lands increases and as land owners become more aware of the value of public and private land for recreation and other purposes. Land tenure adjustment actions (exchanges or fee purchases) can be a valuable tool for access acquisitions. However, without careful review, lands actions, particularly exchanges, can result in lost access. Other tools can also be utilized, such as constructing new roads around lands where access is restricted and acquisition cost is excessive, or where such acquisition is not feasible.

Section 204 of the FLPMA gives the Secretary of the Interior the authority to make, modify, extend, or revoke withdrawals, and mandates review of withdrawals.

Interior Departmental Policy (DM 603) further requires the following:

- All withdrawals shall be kept to a minimum, consistent with the demonstrated needs of the agency requesting the withdrawals.
- Lands shall be available for other public uses to the fullest extent possible, consistent with the purposes of the withdrawal.
- A current and continuing review of existing withdrawals shall be instituted.

2.17.1.2 Management Direction by Alternative

Objective 1. Retain, consolidate, acquire land or interest in land with high public resource values for effective administration and improvement of resource management. Make available for disposal public land meeting the disposal criteria contained in Section 203(a) of the FLPMA.

Management Common to All Alternatives

Planning Area
Land tenure would be based on three general zones (see Table 2.17.1): (1) Generally, Zones 1, 1A and 1B are lands identified for retention in public ownership and includes high resource value lands such as wilderness, WSAs, WSRs and ACECs. Depending on the alternative, some exceptions would be allowable in Zones 1 and 1B to allow for limited disposal of public lands in exchange for lands containing significant public resource values; for public purposes; to resolve trespass situations, or other needs. Nonpublic lands in Zones 1, 1A and 1B would be given a higher priority for acquisition than other zones; (2) Zones 2 and 2A include BLM administered lands outside of Zone 1 areas and have been identified generally for retention and consolidation of ownership, but may be considered for limited disposal by exchange or other methods. Nonpublic lands in Zones 2 and 2A generally would not receive high priority for acquisition, depending upon the Alternative; and (3) Zone 3 lands generally have low or unknown resource values and meet the disposal criteria of section 203 of the FLPMA. They are potentially suitable for disposal by a variety of means. Nonpublic lands in Zone 3 would receive the lowest or no priority for acquisition.

The Land Tenure Zones are applicable to the surface estate, as well as the mineral estate or other partial interests of the United States.

Disposal of land is not imminent based solely upon its placement in a land tenure disposal zone. In addition to conforming with the appropriate land tenure zone established by the land use plan, lands transactions require additional interdisciplinary screening, public input, site specific environmental review, and required findings and decisions before a project can be implemented. For example, exchanges and other disposals require a specific finding that the public interest will be well served by making the exchange. The Steens Act additionally requires that all exchanges of land within the CMPA must further the purpose and objectives specified in Section 102 of the Act. See Appendix J for a complete explanation of land tenure.

All lands identified for any form of disposal in this land use plan, including leases and conveyances under the Recreation & Public Purpose (R&PP) Act, the Desert Land Act, State Indemnity Selections, or other applicable authority are hereby classified for such disposal under Section 7 of the Taylor Grazing Act (42 U.S.C. 315f) and 43 CFR 2400.

Acquisition opportunities within or adjacent to special management areas would be considered higher priority than acquisition of nonpublic lands elsewhere in the Planning Area. Acquired lands within wilderness, WSAs, ACECs, WSRs or those that have unique or fragile resources would be managed the same as the surrounding designation. Lands acquired without special management goals would be managed in the same manner as comparable surrounding public lands.

All forms of acquisition would be with willing land owners except as provided for in Section 205(a) of the FLPMA. This exception provides for use of eminent domain only to secure access to public lands and only to the minimum corridor necessary to achieve this purpose. With this exception, the BLM does not have condemnation authority in the Planning Area.

Table 2.17.1: Land Tenure

	Alternative A	Alternative B	Alternative C	PRMP	Alternative E
Zone 1 Acres - Planning Area	1,533,505	1,649,470	1,202,317	876,615	705,072
AMU	1,149,161	1,221,314	1,202,317	876,615	705,072
CMPA	384,344	428,156	0	0	0
Zone 1A Acres - Planning Area	0	0	171,019	172,191	171,019
AMU	0	0	0	0	0
CMPA	0	0	171,019	172,191	171,019
Zone 1B Acres - Planning Area	0	0	257,136	255,964	257,136
AMU	0	0	0	0	0
CMPA	0	0	257,136	255,964	257,136
Zone 2 Acres - Planning Area	108,219	0	15,158	340,323	503,948
AMU	66,376	0	15,158	340,323	503,948
CMPA	41,843	0	0	0	0
Zone 2A Acres - Planning Area	0	0	0	1,319	0
AMU	0	0	0	1,319	0
CMPA	0	0	0	0	0
Zone 3 Acres - Planning Area	7,745	0	3,837	3,055	12,296
AMU	5,777	0	3,837	3,055	12,296
CMPA	1,968	0	0	0	0

Alternative A

Planning Area
Land tenure adjustments would be consistent with existing land use planning with emphasis on acquiring land with high public resource values such as lands within ACECs or WSAs, T&E species habitat, or riparian/wetland areas, etc.

Under this alternative, Zone 1 lands include WSAs; ACECs; important wildlife, range, and recreational values; and well blocked areas of public land. Zone 2 lands have generally fragmented ownership patterns or are suspected of having relatively lower resource values. Zone 3 lands are those that have been found to be difficult and uneconomical to manage, are not suitable for management by another federal department or agency, and have relatively low resource values.

Specifically, public lands in Zone 1 would be retained. Public lands in Zone 2 may be exchanged for higher resource value lands in Zone 1 or 2. Zone 2 lands would not be sold. Zone 3 lands may be exchanged to acquire higher resource value lands in Zones 1or 2 or may be sold if exchange is unlikely. Lands may be acquired in any zone on a case-by-case basis by exchange, donation, or purchase, consistent with existing land use planning, regulation, and law.

Alternative B

Planning Area
All public lands in the Planning Area would be identified for retention (Zone 1) to protect resources from commodity producing activities that could occur if the lands were conveyed into nonpublic ownership. No lands would be identified for disposal by any means; thus, no Zone 2 or 3 would be designated. Since no disposal is authorized, all acquisition of land anywhere in the Planning Area would be by donation or purchase with emphasis on acquiring lands with natural values and eliminating commodity production. Land may be acquired by exchange only where the public lands involved in the exchange are located outside the Andrews RA.

Alternative C

AMU
Under this alternative, Zone 1 lands are those lands outside the CMPA that contain WSAs, parcels with wilderness characteristics, SRMAs, ACECs, HMAs, special status species habitat, significant cultural/historical sites, Class I and Class II VRM areas, important wildlife, range, and recreational values, and well blocked areas of public land. Zone 2 lands have generally fragmented ownership patterns and are suspected of having relatively low resource values. Zone 3 lands are those that have been found to be difficult and uneconomical to manage, are not suitable for management by another federal department or agency, and have relatively low resource values.

Public land holdings in Zone 1 are retention/acquisition zones and would be retained and increased, with emphasis on acquiring land with natural or cultural values. Zone 1 lands may not be disposed of under any circumstances. Public lands in Zones 2 and 3 may be exchanged for nonpublic lands containing important natural values in Zones 1, 1A, or 1B. Disposal of lands by exchange in Zones 2 and 3 may also be utilized in some cases to resolve agricultural or occupancy trespass. If exchange is unlikely, Zone 3 lands may also be made available for disposal by state indemnity selection, R&PP Act lease or sale, public sale, or other authorized method.

Nonpublic lands in Zone 1 containing important natural or cultural values may be acquired by exchange, purchase, or donation with the goal of ultimately achieving full fee interest in this zone. Nonpublic lands containing important natural or cultural values in Zones 2 and 3 may be acquired only by purchase or donation.

In Zone 1 where fee acquisition is not possible, special emphasis would be placed upon acquiring conservation easements for nondevelopment /conservation purposes to protect natural or cultural values.

CMPA
Zone 1A consists solely of lands within the Steens Mountain Wilderness. Zone 1B lands are all lands within the CMPA that are not designated wilderness.

Public land holdings in Zone 1A and 1B are retention/acquisition zones and would be retained and increased, with emphasis on acquiring land with natural or cultural values. Zone 1A lands may not be disposed of under any circumstances. Zone 1B lands may be disposed of only by exchange that furthers the purpose and objectives specified in Section 102 of the Steens Act.

Nonpublic lands in Zones 1A, and 1B containing important natural or cultural values may be acquired by exchange, purchase, or donation with the goal of ultimately achieving full fee interest in these zones.

In Zones 1A, and 1B where fee acquisition is not possible, special emphasis would be placed upon entering into conservation management agreements, acquiring conservation easements, and providing incentive payments for nondevelopment /conservation purposes to protect natural or cultural values.

Proposed RMP

AMU
Under this alternative, Zone 1 lands are those lands outside the CMPA that contain WSAs, SRMAs, ACECs, HMAs, important cultural/historical sites, and important wildlife, range, and recreational values. Zone 2 lands have generally fragmented ownership patterns or are well blocked public lands that are suspected of having less important resource values. Zone 2A lands are potentially suitable for community expansion and are adjacent to the rural communities of Frenchglen, Fields, and Denio. Zone 3 lands are those that have been found to be difficult and uneconomical to manage, are not suitable for management by another federal department or agency, and have relatively low resource values.

Public land holdings in Zone 1 as shown on Map 2.17.1 would be retained and consolidated, with emphasis on acquiring land with high public resource values. Zone 1 lands may be disposed of only by exchange for nonpublic lands meeting one of the following criteria: a) The nonpublic lands must be within an ACEC, the CMPA, WSA, Special Recreation Management Area (SRMA), or proposed or designated WSR; or b) The nonpublic lands must contain a critical access need as identified in an approved BLM land use plan, riparian or wetland values, habitat for listed T&E species, or cultural/historical resources listed on the National Register of Historic Places. Public lands in Zone 2 may be disposed of by exchange for nonpublic lands containing important public resource values in Zone 1, 1A or 1B or by R&PP sale.

Lands in Zone 2A may be disposed of for community expansion purposes only by exchange for nonpublic lands in Zone 1A or by R&PP sale. R&PP sales in Zone 2A may not exceed ten acres per transaction.

Approximately 3,055 acres of public land in Zone 3 as identified on Map 2.17.1 would be made available for disposal by state indemnity selection, private or state exchange, R&PP Act lease or sale, public sale, or other authorized method, as applicable. Small acreages in Zones 1 and 2 may also be sold to resolve long-term, inadvertent agricultural or occupancy trespass or to correct a survey hiatus.

Nonpublic lands in Zone 1 may be acquired by exchange, purchase, donation, or other authorized method. Acquisition of nonpublic lands in Zone 2 would be limited to those lands containing the following resource values or necessarily included in an acquisition of Zone 1, 1A, and 1B lands: a) The nonpublic lands must be within an ACEC, the CMPA, WSA, SRMA or proposed or designated WSR; or b) The nonpublic lands must contain a critical access need as identified in an approved BLM land use plan, riparian or wetland values, habitat for listed T&E species, or cultural/historical resources listed on the National Register of Historic Places. Nonpublic lands in Zone 3 may not be acquired unless necessarily included in an acquisition of Zone 1, 1A, and 1B lands.

CMPA
Zone 1A consists solely of lands within the Steens Mountain Wilderness and the Riddle Brothers Ranch National Historic District. Zone 1B lands are all lands within the CMPA that are not designated wilderness or within the Riddle Brothers Ranch National Historic District.

Public land holdings in Zones 1A and 1B as shown on Map 2.17.1 would be retained and increased, with emphasis on acquiring land with high public resource values. Zone 1A lands may not be disposed of under any circumstances. Zone 1B lands may be disposed of only by exchange that furthers the purpose and objectives specified in Section 102 of the Steens Act.

Nonpublic lands in Zones 1A and 1B may be acquired by exchange, purchase, donation, or other authorized method. Only in Zone 1A would there be a goal of ultimately achieving full fee title in the zone.

Where fee acquisition is not possible in Zones 1A and 1B, special emphasis would be placed upon entering into conservation management agreements, acquiring conservation easements, and providing incentive payments for nondevelopment/conservation purposes to protect and manage lands with important public values.

Alternative E

AMU
Under this alternative, Zone 1 lands are those lands outside the CMPA that contain WSAs, ACECs, and lands that by law or policy must be retained. Zone 2 lands have generally fragmented ownership patterns or are well blocked public lands that are suspected of having relatively low resource values. Zone 3 lands are those that have been found to be difficult and uneconomical to manage, are not suitable for management by another federal department or agency, and have relatively low resource values.

Public land holdings in Zone 1 would be maintained in their approximate current acreage by retaining public lands and acquiring nonpublic lands with commodity producing values. Zones 1 and 2 lands may be disposed of by exchange that facilitates commodity production or by R&PP sale. Approximately 12,296 acres of public land in Zone 3 would be made available for disposal by state indemnity selection, private or state exchange, R&PP Act lease or sale, public sale, or other authorized method, as applicable. Regardless of zone, additional lands may be conveyed by any method to resolve agricultural or occupancy trespass.

Acquisition efforts would place emphasis on securing land that contains commodity producing values or that facilitates commodity production. Acquisition of land would only be authorized in Zone 1 and only by exchange. No lands would be acquired in Zones 2 or 3. There would be no acquisition by purchase or donation in any Zone under this alternative.

CMPA
Zone 1A consists solely of lands within the Steens Mountain Wilderness. Zone 1B lands are all lands within the CMPA that are not designated wilderness.

Public land holdings in Zones 1A and 1B would be maintained in their approximate current acreage by retaining public lands and acquiring nonpublic lands with commodity producing values. Zone 1A lands may not be disposed of under any circumstances. Zone 1B lands may be disposed of only by exchange that furthers the purpose and objectives specified in Section 102 of the Steens Act and that facilitates commodity production.

Acquisition efforts would place emphasis on securing land that contains commodity producing values or that facilitates commodity production. Acquisition of land would be authorized in Zones 1A and 1B only by exchange. There would be no acquisition by purchase or donation in any zone under this alternative.

Objective 2. Meet public, private and federal agency needs for realty related land use authorizations and land withdrawals including those authorizations necessary for wind, solar, biomass, and other forms of renewable energy development.

Management Common to All Alternatives

Planning Area
Applications for ROWs, realty, and renewable energy authorizations such as ROWs, leases, and permits would be processed in a timely manner, in compliance with the NEPA process. In accordance with current policy, land-use authorizations may not be issued for any use that would involve disposal or long-term storage of materials that could contaminate the land (e.g., landfills, hazardous waste disposal sites, etc.).

Valid existing rights that are not currently noted on the BLM's land status records will be adjudicated, acknowledged, and noted in accordance with applicable law.

Withdrawal review continuations, modifications, and revocations would continue in the future, as the need arises.

AMU
Generally, there is no regulatory width that dictates ROW corridors. Variation in designated width may occur within the range of alternatives.

Table 2.17.2: ROW, Realty, and Renewable Energy Use Authorizations

	Alternative A	Alternative B	Alternative C	Proposed RMP	Alternative E
ROW Corridor Miles	339	0	246	246	354
AMU	339	0	246	246	354
CMPA	0	0	0	0	0
Avoidance Area Acres	17,834	0	189,044	748,549	678,743
AMU	0	0	189,044	611,771	560,180
CMPA	17,834	0	0	136,778	118,563
Exclusion Area Acres	14,812	1,649,470	1,045,910	171,268	171,268
AMU	0	1,221,314	617,754	0	0
CMPA	14,812	428,156	428,156	171,268	171,268
Total Exclusion/Avoidance Acres	**32,646**	**1,649,470**	**1,234,954**	**919,817**	**850,011**
AMU	**0**	**1,221,314**	**806,798**	**611,771**	**560,180**
CMPA	**32,646**	**428,156**	**428,156**	**308,046**	**289,831**

Alternative A

Planning Area
Special designations, planning decisions, and other factors may constrain or exclude ROWs or other realty land use authorizations in the Planning Area. Subject to these constraints and the avoidance/exclusion zones noted below, the entire Planning Area would be available on a case-by-case basis to ROWs and other land uses including energy development, communications sites, and military uses.

Withdrawal and land classification actions would also be managed on a case-by-case basis. No attempt would be made to clarify management responsibilities or adjust boundary alignments with the Malheur NWR. There would be no additional new BLM withdrawals proposed under this alternative. Requests by other agencies for new withdrawals would be considered on a case by case basis.

AMU
Existing corridor designations would continue (see Table 2.17.2). Nominal corridor width would be 2,000 feet wide. New ROW facilities would be located within corridors on a case-by-case basis and designed to minimize impairment to special designated areas.

There would be no ROW, realty, and renewable energy exclusion or avoidance areas in the AMU.

Any application by a qualified entity to lease and reopen the Fields airstrip would be considered on a case-by-case basis utilizing the NEPA process.

No attempt would be made to consolidate existing parallel utility ROW facilities through crucial wildlife habitat.

CMPA
The Stonehouse WSA, would be designated as an exclusion zone, and the Kiger HMA, designated an avoidance area continuing the designations established by the Three Rivers RMP.

Alternative B

Planning Area
The entire Planning Area would be considered a ROW, realty use, and renewable energy exclusion zone except for those authorizations necessary to provide reasonable access to nonpublic lands and interest in land. Existing corridors would be eliminated and no new corridors would be designated. No authorizations or withdrawals necessary for energy development, communications uses, or for military activities would be considered. Although valid existing rights would be honored, existing authorizations including those within corridors would be terminated and facilities removed from public land where possible and when opportunities arise. Until such time as facilities can be removed, existing parallel utility ROW facilities through crucial wildlife habitat would be consolidated.

The portion of the Planning Area not already withdrawn by the Steens mineral withdrawal would be recommended for withdrawal to protect the lands from mining, energy and mineral development, military activities, and other commodity production. Favorable consideration would be given to the BLM and other agency requests for renewals, continuations, or new withdrawals for protection of resource values. Conversely, both the BLM and other agency withdrawals, which support commodity producing activities would be relinquished and terminated.

With special emphasis on excluding commodity production MOUs would be developed with the USFWS, or withdrawals and restorations would be considered to clarify management responsibilities along the boundary of the Malheur NWR.

AMU
Any proposal or application to lease and reopen the Fields airstrip would be rejected. The existing communications uses at Buckskin Mountain would be terminated and facilities removed from public land if the opportunity arises.

Alternative C

Planning Area
All ACECs, WSAs, parcels with wilderness characteristics, WSRs, SRMAs, the Steens Mountain Wilderness, and the CMPA would be designated as ROW, realty use, and renewable energy exclusion areas, except those authorizations necessary to provide reasonable access to nonpublic lands and interests in land. All lands within 0.6 miles of sage-grouse leks, deer and elk winter range, and bighorn sheep habitat would be designated as ROW, realty use, and renewable energy avoidance areas. With the exception of small scale linear distribution facilities no new communications uses would be authorized in the Planning Area. Except as noted above, applications for ROW, realty use, and renewable energy in the remainder of the Planning Area, including those for energy development and military uses, would be processed in a timely manner on a case-by-case basis in accordance with the NEPA and other applicable law.

Other federal agency requests for new withdrawals would be recommended for approval only if they would limit commodity production and protect natural values. Withdrawal and classification continuations, modifications, revocations and terminations would be recommended, as necessary. Other agencies would be encouraged to relinquish withdrawals that provide for commodity uses, while favorable consideration would be given to continuations of other agency protective withdrawals. Those withdrawal and classification reviews not scheduled or known would be considered on a case-by-case basis with emphasis on protecting natural values. MOUs would be developed with the USFWS, or withdrawals and restorations would be considered to clarify management responsibilities along the boundary of the Malheur NWR, with special emphasis on providing protection of natural values.

AMU
Approximately 246 miles of public land would be designated as ROW corridors. The designated corridors would include all existing trans-district electrical transmission lines identified by the Western Regional Corridor Study, federal and state highways, and the Fields-Denio and Catlow Valley County Roads. Nominal corridor width would be 1,000 feet on each side of centerline of existing facilities, except where the alignment forms the boundary of a special designated area. Here the width would be 2,000 feet on the side opposite that boundary. Where the specified corridor width is constrained on both sides by special designated areas, the corridor width would be the area between the boundaries of the special designated areas. All ROWs for electrical transmission lines greater than 69 kV, all mainline communications facilities, and all pipelines greater than ten inches in diameter would be required to locate in the designated corridors.

The existing communications uses at Buckskin Mountain would continue until they are obsolete, at which time they may be terminated, the facilities removed, and the lands restored. An application by a qualified entity to lease and reopen the Fields airstrip may be approved, but any proposal to convey the land out of federal ownership under the Airport and Airway Improvement Act will be rejected.

The feasibility of consolidating existing parallel utility ROW facilities through crucial wildlife habitat would be evaluated. Where deemed feasible, consolidation of facilities would be implemented for critical areas.

Approximately 254,859 acres as identified in Table 2.13.1 and Map 2.13.1would be recommended for withdrawal from the public land and mining laws. In addition, the existing withdrawal at the BLM's Fields Administrative Site would be recommended for renewal and expansion to 40 acres (NE1/4NE1/4, Sec. 23, T.38S., R.34E.) to include all existing facilities and adjacent undeveloped lands within the fenced confines of the site.

CMPA
The CMPA would be designated as a ROW, realty use, and renewable energy exclusion area, except for those authorizations necessary to provide reasonable access to nonpublic lands and interests in land.

Proposed RMP

Planning Area
Except as noted below, applications for ROW, realty use, and renewable energy authorizations in the Planning Area, including those for energy development and military uses, would be processed in a timely manner on a case-by-case basis in accordance with the NEPA and other applicable laws.

Other federal agency requests for new withdrawals or existing withdrawal relinquishments and modifications would be considered on a case-by-case basis. Withdrawal and classification continuations, modifications, revocations, and terminations would be recommended, as necessary, with special emphasis given to reviewing, revoking, and terminating all overlapping and duplicative withdrawals and classifications within the CMPA and Steens Act mineral withdrawal area. Those withdrawal and classification reviews not scheduled or known would be considered on a case-by-case basis.

MOUs would be developed with the USFWS, or withdrawals and restorations would be considered to clarify management responsibilities along the boundary of the Malheur NWR.

AMU
Corridor designations would be the same as Alternative C. All large scale facilities, as specified in Alternative C, would be encouraged to locate in the designated corridors.

All WSAs, SRMAs, and ACECs would be designated as ROW, realty use, and renewable energy avoidance areas.

Buckskin Mountain would be designated as a communication site and additional communications uses could be allowed at the site. An existing road closure to the top of the mountain would be continued in order to minimize effects to bighorn sheep. Upon designation of the site, a site management plan would be developed to facilitate efficient and timely development of compatible communications uses. Communications lease applications for new locations would be considered on a case-by-case basis, and site management plans would be developed concurrent with processing applications.

An application by a qualified entity to lease and reopen the Fields airstrip may be approved. Once the airstrip is fully developed and operational under the terms of the lease and an application is filed by a qualified entity, the lands may be conveyed under the Airport and Airway Improvement Act or other authorized method.

The feasibility of consolidating existing parallel utility ROW facilities through crucial wildlife habitat would be evaluated. Where deemed feasible, consolidation of facilities would be implemented for critical areas.

As identified in Table 2.13.1 and Map 2.13.1, 20,367 acres would be recommended for withdrawal from the public land and mining laws. In addition, the existing withdrawal of five acres at the BLM Fields Administrative Site would be recommended for renewal and expansion to ten acres in the NENE 1/4, Sec. 23, T.38S., R.34E. to include all existing facilities. In the interim, a ROW reservation would be approved to protect the additional acreage.

CMPA
All WSRs and the Steens Mountain Wilderness would be designated as ROW, realty use, and renewable energy exclusion areas, except for those authorizations necessary to provide reasonable access to nonpublic lands and interests in land. In addition to the above exception, low effect commercial activities such as filming permits may be considered on a case-by-case basis in the WSR portion of the Riddle Brothers Ranch National Historic District. All WSAs and ACECs would be designated as ROWs, realty use, and renewable energy avoidance areas.

Alternative E

Planning Area
Except as noted below, applications for ROW, realty use, and renewable energy authorizations in the Planning Area, including those for energy development and military uses, would be processed in a timely manner on a case-by-case basis in accordance with the NEPA and other applicable laws. Leases, permits and other authorizations would be considered and encouraged for agricultural, occupancy, filming, and other commodity-producing land uses. No new protective withdrawals would be considered for public land.

New withdrawal requests by other federal agencies would be recommended for approval only if they emphasize commodity production. Agencies would be encouraged to relinquish protective withdrawals, with favorable consideration given to continuations of other agency withdrawals that facilitate commodity uses. Withdrawal and classification continuations, modifications, revocations, and terminations would be recommended, as necessary, with special emphasis given to reviewing, revoking, and terminating all protective withdrawals and classifications. Those withdrawal and classification reviews not scheduled or known would be considered on a case-by-case basis with consideration given to reviewing, revoking, and terminating all protective withdrawals and classifications to facilitate commodity production.

MOUs would be developed with the USFWS or withdrawals and restorations would be considered to clarify management responsibilities along the boundary of the Malheur NWR, with emphasis on facilitating commodity production.

AMU
Approximately 354 miles on public land would be designated as ROW corridors. The designated corridors would include all corridors identified by the Western Regional Corridor Study, all county roads, and all federal and state highways. Additional routes would be considered where proposals arise. Nominal corridor width would be 2,500 feet on each side of centerline of existing facilities, except where the alignment forms the boundary of a special designated area. Here the width would be 5,000 feet on the side opposite that boundary. All large scale facilities, as specified in Alternative C, would be encouraged to locate in the designated corridors. Approximately 560,180 acres of public land including all WSAs and ACECs would be designated as ROW, realty use, and renewable energy authorization avoidance areas.

Buckskin Mountain would be designated a communications site and allow for additional communications uses at the site. Site management plans would be developed at Buckskin Mountain and at any new communications sites only when a need or conflict between users arise. An application by a qualified entity to lease and reopen the Fields airstrip may be

approved. Once the airstrip is fully developed and operational under the terms of the lease and an application is filed by a qualified entity, the lands may be conveyed under the Airport and Airway Improvement Act or other authorized method.

The feasibility of consolidating existing parallel utility ROW facilities through crucial wildlife habitat would be evaluated, but no action would be taken to consolidate the facilities.

Although the existing five acre withdrawal at the BLM's Fields Administrative Site in the NENE 1/4, Sec. 23, T.38S., R.34E. would be recommended for renewal, no expansion of the withdrawal would be recommended. To provide a minimal level of protection for facilities outside the existing withdrawal, a ROW reservation would be approved.

CMPA
All WSRs and the Steens Mountain Wilderness would be designated as ROW, realty use, and renewable energy exclusion areas, except for those authorizations necessary to provide reasonable access to nonpublic lands and interests in land. In addition to the above exception, low effect commercial activities such as filming permits may be considered on a case-by-case basis in the WSR portion of the Riddle Brothers Ranch National Historic District.

Objective 3. Acquire legal public or administrative access to public land.

Alternative A

Planning Area
Legal public or administrative access, including conservation and scenic easements, would be acquired on a case-by-case basis as the need arises. Emphasis would be placed on providing access for BLM administrative facilities and program-related activities. All land tenure actions would be reviewed for their effect on access.

Construction of new roads to accommodate a reroute around private lands may be considered where easement acquisition is not feasible or desirable, subject to the limitations expressed in the Steens Act and consistent with the TP.

Alternative B

Planning Area
Legal public or administrative access, including conservation and scenic easements, would be acquired with emphasis on controlling public access for protection of sensitive resource values. Land tenure actions would be designed such that they do not facilitate public access to these areas.

Construction of new roads around private lands would not be considered as an alternative for access easement acquisition. Roads that provide public access to lands containing sensitive resource values would be closed.

Alternative C

Planning Area
Access and easement acquisition management would be the same as Alternative B, except that closed roads would be actively reclaimed.

Proposed RMP

Planning Area
Legal public or administrative access, including conservation and scenic easements, would be acquired where public demand or an administrative need exists, including any rights necessary to control and minimize access to areas containing sensitive resource values. Emphasis would be placed on providing access to areas containing high public values and the protection of natural values. Land tenure transactions would be designed to maintain and improve public access. Potential public access easements are identified on Map 2.18.2.

Where easement acquisition for access is not feasible or desirable, but a critical access need has been identified, new roads would be constructed to accommodate a reroute around nonpublic lands, subject to the limitations expressed in the Steens Act and consistent with the TP.

Alternative E

Planning Area
Legal public or administrative access would be acquired, with emphasis on providing access to facilitate commodity production. No conservation or scenic easements would be considered.

To facilitate commodity production, new roads would be constructed to accommodate a reroute around private lands where easement acquisition is not feasible or desirable, subject to the limitations expressed in the Steens Act and consistent with the TP. Land tenure transactions would be designed to maintain and improve public access.

Objective 4. Eliminate unauthorized use of public lands.

Management Common to All Alternatives

Planning Area
Realty related unauthorized uses on public land would be detected, confirmed, and abated on all lands.

Alternative A

Planning Area
Unauthorized use of public land would be detected, confirmed, and abated, either by formal authorization or termination, on a case-by-case basis. Active restoration of lands damaged by unauthorized use would be implemented. Agricultural or occupancy trespass would be terminated or may be authorized by long-term lease, sale, or exchange, consistent with the land tenure zones.

Alternative B

Planning Area
All unauthorized use of public lands, including agricultural and occupancy uses, would be detected, confirmed, and terminated. All facilities and structures would be removed and natural restoration of lands damaged by unauthorized use would be allowed. No authorizations would be considered to allow the use to continue.

Alternative C

Planning Area
Consistent with the land tenure zones all unauthorized use of public lands would be detected, confirmed, and terminated except occupancy and agricultural uses that may be authorized by land exchange for nonpublic lands containing important natural values. Short-term permits may be utilized to authorize occupancy or agricultural trespass until an exchange can be effected. Active restoration would be implemented on lands damaged by unauthorized use.

CMPA
Consistent with the land tenure zones and the purpose and objectives of the Steens Act, all unauthorized use of public lands would be detected, confirmed, and terminated except occupancy and agricultural uses that may be authorized by land exchange for nonpublic lands containing important natural values.

Proposed RMP

Planning Area
Unauthorized use of public land would be detected, confirmed, and abated, either by formal authorization or termination, on a case-by-case basis. Active restoration of lands damaged by unauthorized use would be implemented.

AMU
Agricultural or occupancy trespass would be terminated or may be authorized by long-term lease, sale, or exchange, consistent with the land tenure zones where the lease, sale, or exchange would serve other important public objectives in addition to resolving the trespass. Regardless of the zone, long-term inadvertent agricultural or occupancy trespass may be authorized or survey hiatus corrected by sale of the minimum feasible acreage necessary to abate the unauthorized use. Such authorization or correction would be subject to the disposal criteria of the FLPMA, other

applicable laws, and the approved land use plan. Short-term permits may be utilized to authorize occupancy or agricultural trespass until a lease, sale, or exchange could be effected. Active restoration would be implemented of lands damaged by unauthorized use.

CMPA
Agricultural or occupancy trespass would be terminated or may be authorized by exchange that furthers the purpose and objectives specified in Section 102 of the Steens Act; is consistent with the land tenure zones; and, where the exchange would serve other important public objectives in addition to resolving the trespass. Short-term permits may be utilized to authorize occupancy or agricultural trespass until an exchange could be effected.

Alternative E

Planning Area
All unauthorized use of public lands would be detected, confirmed, and authorized. All agricultural or occupancy trespass would be authorized by long-term lease, sale, or exchange, regardless of the land tenure zone.

AMU
All agricultural or occupancy trespass would be authorized by long-term lease, sale, or exchange, regardless of the land tenure zone.

CMPA
All agricultural or occupancy trespass would be authorized by exchange that furthers the purpose and objectives specified in Section 102 of the Steens Act.

2.17.2 Monitoring

See Appendix Q.

2.18 Transportation and Roads

2.18.1 Goal - Provide travel routes to and through BLM managed lands as appropriate to meet resource objectives while providing for private and public access needs.

2.18.1.1 Management Framework

A major element of a TP is the management and protection of the basic resources of water, soils, fish, wildlife, and vegetation while providing a route system that accommodates public, private, and administrative access needs. Numerous federal laws and internal regulations give the BLM the authority and guidance to develop and manage transportation systems. For a list of authorities see the Draft Washington and Eastern Oregon Transportation Management Plan. Section 112 of the Steens Act prohibits off road motorized travel within the CMPA and also identifies exceptions to the off-road vehicle travel prohibition. Criteria for the exceptions are attached to Appendix M. Section 112 also calls for the development of a comprehensive TP for the CMPA. This section of the Proposed RMP/FEIS meets this legislative requirement. Routes specifically addressed by name in the following alternatives will need no further analysis. An EA based on specific field inventories and need determinations of all other routes within the CMPA will complete the comprehensive requirements and be completed by December 31, 2005. The remainder of the Planning Area would continue under present transportation direction until an updated TP is developed by fall, 2008. In the interim, the open roads and ways shown on Maps 2.18.1 and 2.18.2 represent the routes historically available for motorized use and that shall remain available for such use unless changed through the development of the updated TPs mentioned above.

2.18.1.2 Management Direction by Alternative

Objective. Manage roads and ways within the CMPA consistent with the Route Management Categories and Maintenance Levels identified for each alternative.

Management Common to All Alternatives

Routes within this TP are either roads or ways. Ways are routes within WSAs that can be repaired in accordance with the WSA IMP. Ways fall under one or more of the Route Management Categories, depending upon their particular

purpose and need. Roads also fall under one or more Route Management Categories and their condition varies based substantially on their assigned Maintenance Level. The roads and ways currently shown on Map 2.18.3 represent the current BLM recognized motorized routes within the CMPA. Management actions within this TP pertain only to the currently mapped routes. Other routes are known to exist; however, the exact location and uses of most of these routes are not currently known. Once these unmapped routes are inventoried, an EA would be conducted to determine whether they should be added to the transportation system, converted to hiking trails, or closed and rehabilitated. Currently mapped routes may also be reevaluated through an EA process and closed, rerouted or upgraded if needed to meet resource objectives or provide for public safety. Public input to the EA(s) would be sought.

The Steens Act closed about 104 miles of motorized routes upon designation of the Steens Mountain Wilderness. These routes would remain closed across all the alternatives. This TP and subsequent EAs may also prescribe other routes for closure within the CMPA as needed to meet resource objectives or to protect persons and property. Examples of routes that may be closed include those with redundancy of purpose or those causing environmental damage. Route closures will vary by alternative. Closed routes will be signed or otherwise physically obstructed as necessary to accomplish permanent closure. Some routes closed to the public may still need to be used by private landowners to access private land or by livestock operators to administer their grazing permits. Use of these routes will be specifically authorized by the BLM after a careful analysis determines reasonable access needs.

Route Management Categories describe the primary purposes and uses for the routes. Many routes fall under more than one management category. Most use by private landowners, grazing operators, and the public occurs on Common Use Routes and is provided under casual use; therefore, it does not require a formal use authorization. Maintenance levels outline the degree of maintenance to be performed, dependent on funding levels. Maintenance of routes with limited or no public access may be the responsibility of the landowner. Private landowner maintenance of routes on BLM administered land would be authorized as needed and supervised by the BLM. Route maintenance is generally prioritized, based on safety concerns and degree of use. Inadequate funding may preclude the BLM from maintaining routes at levels assigned in this TP. Route Management Categories and Maintenance Levels are monitored and may be modified if needs and conditions change. Minimal use of traffic control signs will continue along the Steens Loop Road as needed to mitigate safety concerns. Other routes within the CMPA will not generally be signed except to address specific needs.

Route Management Categories

Common Use Routes: Routes that are open to the public but may be closed, or have seasonal use restrictions during certain sensitive periods to protect resource values such as road conditions. These include routes on BLM managed lands and private lands where public access easements have been acquired.

Cooperative Managed Routes: Routes across private, state, BLM administered, or other agency lands that are cooperatively administered and maintained. Routes may have specified levels of public use, season of use, and type of use. Administration and maintenance may be facilitated through a cooperative agreement.

Service/Permit Use Routes: Routes used only for administration, facility service, property maintenance, or those associated with an authorized permit. Motorized public use is not allowed.

Private Property Access Routes: Routes across public land used to access private property. Motorized use allowed only for private property interests and BLM administration.

Private Routes: Routes across private lands that are not open for use by the public.

Note: Access descriptions within the above Route Management Categories may be subordinate to other rights, agreements, or privileges as provided by law, policy, or other legal instrument.

Maintenance Levels

Level 1: This level is assigned to roads where maintenance is limited to protecting adjacent lands and resource values. These roads are no longer needed and are closed to traffic. The objective is to remove these roads from the transportation system. At a minimum, drainage and runoff patterns will be maintained as needed to protect adjacent lands. Grading, brushing, or slide removal will not be performed unless roadbed drainage is being adversely affected or is causing erosion. Closure and traffic restrictive devices will be maintained.

Level 2: This level is assigned to roads open seasonally or year round. Uses may include commercial, recreation, private property access, and administration purposes. Typically, these roads are passable by high clearance vehicles and are maintained, as needed, depending on funding levels. Seasonal closures or other restrictions may be needed to meet resource objectives or due to snow levels or other weather conditions. At a minimum, drainage structures will be inspected within a three-year period and maintained as needed. Grading will be conducted as necessary to correct drainage problems. Brushing will be conducted as needed. Slides may be left in place, provided they do not adversely affect drainage.

Level 3: This level is assigned to roads open seasonally or year round. Uses may include commercial, recreation, private property access and administrative purposes. Typically, these roads are natural or aggregate surfaced, but may include bituminous surface roads. These roads have a defined cross section with drainage structures such as rolling dips, culverts or ditches. They may normally be negotiated by passenger cars driving cautiously. User comfort and convenience are not considered a high priority. At a minimum, drainage structures will be inspected annually and maintained as needed. Grading will be conducted to provide a reasonable level of riding comfort at prudent speeds for the road conditions. Brushing will be conducted as needed to improve sight distance. Slides adversely affecting drainage will receive high priority for removal and other slides will be removed on a scheduled basis.

Level 4: This level is assigned to roads open seasonally or year round. Uses include commercial, recreation, private property access, and administrative purposes. Typically, these roads are single or double lane and have an aggregate or bituminous surface. This maintenance level provides access for passenger cars traveling at prudent speeds. At a minimum, the entire roadway will be maintained at least annually, although a preventive maintenance program may be established. Major problems will be repaired as discovered.

Level 5: This level is assigned to roads open seasonally or year round that carry the highest traffic volume of the transportation system. Uses include commercial, recreation, private property access, and administrative purposes. Typically, these roads are single or double lane and have an aggregate or bituminous surface. This maintenance level provides access for passenger cars traveling at prudent speeds. The entire roadway will be maintained at least annually and a preventive maintenance program will be established. Problems will be repaired as discovered.

Ways within WSAs are not maintained other than by the passage of vehicles, with certain exceptions. Exceptions are limited to the minimum mechanical maintenance necessary to provide access as follows: 1) for emergencies such as suppression activities associated with wildland fire or search and rescue; 2) to grandfathered grazing uses and facilities as defined by the WSA IMP; 3) to sites where reclamation or stabilization is needed to protect or improve the land's wilderness values; and 4) to private inholdings. In these exceptions, maintenance would occur using the "minimum tool concept" described in the WSA IMP. An EA is required to analyze maintenance alternatives except in the case of emergencies.

BMPs for the construction, maintenance, and general management of the transportation system are listed in Appendices F and M. These BMPs are consistent across all alternatives.

Easements across nonfederal lands, both public and administrative, will be sought as needed to meet resource objectives.

Management criteria specific to the Proposed RMP/FEIS are also displayed in Appendix M.

Alternative A

Retain the current road use maintenance levels and seasonal restrictions for the existing road system (Map 2.18.1) within the CMPA, subject to implementation of the Steens Act.

Existing management directions currently identified for the CMPA include the following:

- Keep the entire Steens Loop Road open at a Maintenance Level 5. This includes the use of bentonite clay as needed.
- Use the existing gate and permit system to close the Steens Loop Road to public motorized use from approximately November 15 to May 15 each year except to access the snow line on the North Steens Loop Road for winter recreation by permit.
- Decommission prelegislative closed routes leading from the Steens Loop Road as needed.

- Continue to seek voluntary public access easements across private lands to benefit recreation opportunities.
- Continue permitted motorized access along the Riddle Brothers Ranch segment of the Cold Springs Road.

Alternative B

Under this alternative, the transportation system would be managed to meet resource goals and objectives consistent with maximizing natural processes. Route closures outside of wilderness or WSAs would also prohibit mechanized use.

Management directions under Alternative B include the following:

- Close the upper portion of the Steens Loop Road from the Kiger Overlook access road to the wilderness boundary approximately one mile west of Blitzen Crossing. Approximately 18 miles of the Steens Loop Road would be closed to motorized and mechanized use. Maintain the open portion of the Steens Loop Road at Level 3.
- In addition to the Steens Loop Road, close all roads currently bounded on both sides by wilderness. Closed roads include Fish Creek, Cold Springs, Grove Creek, Indian Creek, Bone Creek, Big Alvord Creek, Newton Cabin, and Three Springs. Approximately 31 miles of roads would be closed to motorized and mechanized use.
- Close all cherrystem roads and ways associated with WSAs. Approximately 107 miles of WSA routes would be closed to motorized and mechanized use.
- Assign Maintenance Level 2 to all remaining open roads within the CMPA. Consider seasonal closures as needed to reduce damage to road surfaces, protect resources, or provide for public safety.
- Use the existing gate system to close the Steens Loop Road to public motorized use from approximately November 15 to May 15 each year. Open gates as snow and road conditions allow. Seasonally close all other routes within the CMPA from February 1 to May 15.
- Install a gate on the Moon Hill Road near the Diamond Grain Camp Road to protect road surfaces and improve natural values.
- Develop Cooperative Road Management Agreements or acquire voluntary easements from private landowners and other entities that improve natural values.

Alternative C

Under this alternative, the transportation system would be managed to meet resource goals and objectives consistent with emphasizing the protection of natural values. Route closures outside of wilderness or WSAs would be for motorized vehicles only; therefore, mechanized use (e.g., mountain bikes) would be allowed.

Management directions under Alternative C include the following:

- Close the Rooster Comb portion of the Steens Loop Road to motorized use. Approximately three miles of the road would be affected.
- Continue to allow mechanized and other nonmotorized forms of access. Maintain the open portion of the Steens Loop Road at Level 4.
- Close the Cold Springs Road west of Nye Cabin.
- Close the Fish Creek Road where it is currently bounded on both sides by wilderness.
- Close other specific routes as shown on Approximately seven miles of routes would be closed.
- Assign Maintenance Level 2 to all remaining open roads within the CMPA. Consider seasonal closures as needed to reduce damage to road surfaces, protect resources, or provide for public safety.
- Use the existing gate and permit system to close the Steens Loop Road to public motorized use from approximately November 15 to May 15 each year except to access the snow line on the North Steens Loop Road for nonmotorized forms of winter recreation.
- Install a gate to seasonally close the Moon Hill Road near the Diamond Grain Camp Road to protect road surfaces and improve natural values.
- Develop Cooperative Road Management Agreements or acquire voluntary easements from private land owners and other entities to improve natural values.

Proposed RMP

Under this alternative, the transportation management system would be managed to meet resource goals and objectives that strike a balance between cultural, economic, ecological, and social values in a manner that encourages cooperative management practices.

Management directions under the Proposed RMP, include the following:

- Keep the entire Steens Loop Road, including the routes to the overlooks, open to motorized use at Maintenance Level 5 except the Rooster Comb section, which would be upgraded to Maintenance Level 3.
- Keep the Fish Creek, Cold Springs, Grove Creek, Big Alvord Creek, Newton Cabin, Indian Creek and Three Springs routes open where bounded on both sides by the Steens Mountain Wilderness.
- Include the Bone Creek Road in the transportation route inventory EA to determine specific management options related to facilitating private land management and protecting wilderness characteristics.
- Keep open all cherry stem roads and ways associated with WSAs except as shown on Maps 2.18.3 and 2.19.1.
- Retain Maintenance Level 3 as currently prescribed for the Moon Hill Road system.
- Close specific routes as shown on Map 2.19.1 and 2.18.3. Approximately six miles of routes would be closed.
- Assign a Maintenance Level 3 to the Kiger Wild Horse Overlook Road; the Witzel/Yriarte access road; the road to Riddle Brothers Ranch; the Virginia Valley Road to its junction with the private land in Section 9, Township 30 South, Range 35 East; the Kiger Ridge Road between Fred Otley's driveway and its junction with the private land in Section 16, Township 32 South, Range 33 East; and a portion of the Fence Creek Roads.
- Assign Maintenance Level 4 to the road into Fred Otley's ranch.
- Use the existing gate and permit system to close the Steens Loop Road to public motorized use from approximately November 15 to May 15 each year except to access the snow line on the North Steens Loop Road for motorized and nonmotorized forms of winter recreation.
- Assign Maintenance Level 2 to all remaining open roads within the CMPA unless otherwise prescribed under a Cooperative Management Agreement. Consider seasonal closures and road upgrades as needed to reduce damage to road surfaces, protect resources, or provide for public safety.
- Install a gate to seasonally close the Moon Hill Road near the Diamond Grain Camp Road from February 1 to May 15 each year to protect road surfaces and improve natural values. Install an additional gate on the Moon Hill Road near the base of Moon Hill to protect higher elevation road surfaces. Closure of the Moon Hill gate would correspond with the closure of the lower gate on the North Steens Loop Road.
- Develop Cooperative Road Management Agreements or acquire voluntary easements with private land owners and other entities to provide recreation opportunities, improve natural values, or otherwise improve access.
- Allow motorized access to existing dispersed campsites from open routes unless precluded by special designation or other resource concerns.
- Allow the parking of motorized vehicles within 100 feet of centerline along many of the open routes unless precluded by special designation or other resource concerns.
- Limit motorized traffic and vehicle parking to existing disturbed areas adjacent to the Steens Loop Road and the overlook roads from Jackman Park to the Rooster Comb.
- Allow permitted motorized access along the Riddle Brothers Ranch segment of the Cold Springs Road.

Alternative E

Under this alternative, the transportation management system would be managed to meet resource goals and objectives that emphasize commodity production and public uses.

Management directions under Alternative E include:

- Keep the entire Steens Loop Road open to motorized use at Maintenance Level 5 except the Rooster Comb section, which would be upgraded to Maintenance Level 3.
- Expand the seasonal winter permit access on the Steens Loop Road by allowing winter long motorized public access to the snow line on the North Steens Loop Road and by allowing winter long motorized access to the South Steens Campground on the South Steens Loop Road. Expanded access on the South Steens Loop Road would be dependent on upgrading the road as necessary to prevent road damage during wet periods. Plowing of snow would be limited, so access would also be dependent on snow and road conditions.
- Retain Maintenance Level 3 as currently prescribed for the Moon Hill Road system.

- All motorized routes within the CMPA would remain open. Consider seasonal closures and road upgrades as needed to reduce damage to road surfaces.
- Assign Maintenance Level 2 to all remaining open roads within the CMPA unless otherwise prescribed under a Cooperative Management Agreement.
- Develop Cooperative Road Management Agreements or acquire voluntary easements with private land owners and other entities to provide recreation opportunities, or otherwise improve access.
- Allow motorized access to dispersed campsites from routes shown on Map 2.18.1, unless precluded by special designation or other resource concerns.
- Allow the parking of motorized vehicles within 100 feet of centerline along many of the open routes shown on Map 2.18.1 unless precluded by special designation or other resource concerns.

2.18.2 Monitoring

See Appendix Q.

2.19 Off-Highway Vehicles

2.19.1 Goal - Manage motorized (OHV) and mechanized (nonmotorized) vehicle use to protect resource values, promote public safety, provide OHV and mechanized vehicle use opportunities where appropriate and allowable, and minimize conflicts among various users.

2.19.1.1 Management Framework

The BLM manages OHV use under the FLPMA and Executive Order 11644 (as amended by Executive Order 11989). Federal regulations (43 CFR Part 8340) and BLM planning guidance require the BLM to designate all BLM administered land as either open, limited, or closed, in regard to off-road (now commonly termed "off-highway") vehicle use. These designations are to help meet public demand for OHV and mechanized vehicle activities, protect natural resources, promote public safety, and minimize conflicts among users. The National Strategy for Motorized OHV Use on Public Lands and the National Mountain Bicycling Strategic Action Plan provide further guidance.

2.19.1.2 Management Direction by Alternative

Objective. Manage OHV and mechanized vehicle use in conformance with OHV designations.

Management Common to All Alternatives

The Steens Mountain Wilderness would be designated as closed to OHV and mechanized vehicle use. If not otherwise restricted, the remainder of the CMPA, outside the Steens Mountain Wilderness and including the WSAs, would be designated as limited to designated roads and ways. Only those roads and ways identified in the CMPA TP would be available for OHV and mechanized vehicle use.

All management actions for those portions of ACECs within WSAs would be governed by the WSA IMP until such time as Congress makes a determination regarding wilderness designation. The OHV and mechanized vehicle designations for WSAs would remain in effect until Congressional release of the WSAs, or until such time that actual or unforeseeable use levels may cause the nonimpairment criteria to be violated, in which case more restrictive designations may be made. Every effort will be made to maintain or create OHV and mechanized vehicle designations that will prevent impairment of wilderness values. Areas released from WSA status and not designated as wilderness would be evaluated and an appropriate OHV and mechanized vehicle designation proposed. Maintenance of an existing OHV and mechanized vehicle designation or change to a new designation would be based on laws, regulations, and policies in place at that time.

The limitations to OHV and mechanized vehicle use proposed under these alternatives do not apply to official use; any fire, military, emergency, or law enforcement vehicle when used for emergency purposes; any combat or combat support vehicle when used for national defense purposes; and any vehicle whose use is expressly authorized under a permit, lease, license, or contract.

Within the CMPA, all alternatives must abide by the Steens Act, specifically Section 112(b):

(1) PROHIBITION. – The use of motorized or mechanized vehicles on Federal lands included in the Cooperative Management and Protection Area –

(A) is prohibited off road; and

(B) is limited to such roads and trails as may be designated for their use as part of the management plan.

(2) EXCEPTIONS. – Paragraph (1) does not prohibit the use of motorized or mechanized vehicles on Federal lands included in the Cooperative Management and Protection Area if the Secretary determines that such use-

(A) is needed for administrative purposes or to respond to an emergency; or

(B) is appropriate for the construction or maintenance of agricultural facilities, fish and wildlife management, or ecological restoration projects, except in areas designated as wilderness or managed under the provisions of section 603(c) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1782).

The terms OHV, mechanized vehicle, road, and way are defined in the Glossary.

Outside of wilderness, access into seasonal closure areas by ranchers and private landowners would be authorized by the Field Manager for legitimate access or business purposes if weather and road conditions permit motorized vehicle travel on designated routes.

In the legend on DRMP/DEIS Maps 2.10 through 2.13 the phrase "Limited Seasonally/Closed" is used. At the scale of the maps, the road corridors that are bounded on one or both sides by the Steens Mountain Wilderness are not visible. These include, but are not limited to, the Steens Loop, Fish Creek, Cold Springs, Newton Cabin, and Indian Creek Roads. The Limited Seasonally designation refers to these road corridors. Rather than trying to show each of these road corridors individually as Limited Seasonally, the entire wilderness and the road corridors are labeled as "Limited Seasonally/Closed". However, motorized winter recreation would be allowed by winter recreation permit or SRP on those roads that are identified for such use in the comprehensive recreation plan. Until the comprehensive recreation plan is completed, winter use of the seasonally closed roads would continue in compliance with the 1993 Andrews Plan Amendment for Recreation Access Surrounding the Steens Mountain Loop Road and current winter recreation policy.

All roads in the AMU "limited" designation areas would be inventoried and a TP prepared after the RMP is completed. See the Transportation and Roads section for additional information.

Alternative A

Planning Area
OHV and mechanized vehicle use would be managed in accordance with the existing open, limited, and closed OHV designations in Table 2.19.1. OHV and mechanized vehicle organized events would be allowed when consistent with the protection of resource values and OHV and mechanized vehicle designations. In addition, the existing OHV designations for ACECs/RNAs would continue (Table 2.21.2). All OHV and mechanized vehicle use in WSAs is limited to existing, designated roads and ways. All WSA cherrystem roads and those ways identified in the WSA inventory would be available for use.

CMPA
CMPA OHV designations are shown in Table 2.19.2. The Fish Creek Road, Cold Springs Road, Newton Cabin Road, Bone Creek Road, Indian Creek Road, Weston Basin Road, and Big Alvord Creek Road would remain open. The existing seasonal closure in the Steens would continue. See DRMP/DEIS Map 2.9.

AMU
AMU OHV designations are shown in Table 2.19.3. The Alvord Desert playa would remain open to OHV and mechanized vehicle use. Snow would be allowed to block access to the Trout Creek Mountains and Arizona Creek/Stergen Meadows areas.

Alternative B

Planning Area
Areas designated as closed to OHV and mechanized vehicle use would be maximized. All other areas would be designated as limited to designated roads with a minimum number of roads identified (Table 2.19.1 and DRMP/DEIS Map 2.10). All WSAs, including roads between WSAs, cherrystem roads, and ways, would be designated as closed to OHV and mechanized vehicle use. Organized OHV or mechanized vehicle events would not be allowed. Table 2.21.2 specifies the OHV and mechanized vehicle designations for the ACECs/RNAs.

CMPA
The following roads bounded by the Steens Mountain Wilderness would be designated as closed to all motorized and mechanized vehicle use: Fish Creek, Cold Springs, Steens Loop Road from the Kiger Overlook Road to west of Blitzen Crossing, Newton Cabin, Bone Creek, Indian Creek, Weston Basin Road, Dingle Creek Road, and Big Alvord Creek. The entire CMPA would be closed seasonally. A gate would be installed on the Moon Hill Road at the Diamond Grain Camp Road.

AMU
The Catlow Valley parcels, the Borax Lake area, and the Alvord Desert playa would be designated as closed to all OHV and mechanized vehicle use, while the remainder of the AMU would be designated as limited to designated routes. In addition, the Trout Creek Mountains and Arizona Creek/Stergen Meadows areas would be closed seasonally to OHV and mechanized vehicle use. Two gates would be installed on the Trout Creek Mountains Road. Gates would also be installed on the Ten Cent Meadows and Starr Ridge Roads.

Table 2.19.1: OHV Designation Acreages by Alternative in the Planning Area (Public Land Acres Only)

Designation	Alternative A (acres)	Alternative B (acres)	Alternative C (acres)	Proposed RMP (acres)	Alternative E (acres)
Open	675,914	0	0	25,285	683,968
Limited to Existing	123,455	0	0	0	535,666
Limited to Designated	680,017	795,706	1,476,034	1,451,685	257,454
Closed	170,084	853,764	173,436	172,500	172,382
TOTAL	**1,649,470**	**1,649,470**	**1,649,470**	**1,649,470**	**1,649,470**
Seasonal Closure	93,444	518,993	382,165	394,737	234,780

Table 2.19.2: OHV Designation Acreages by Alternative in the CMPA (Public Land Acres Only)

Designation	Alternative A (acres)	Alternative B (acres)	Alternative C (acres)	Proposed RMP (acres)	Alternative E (acres)
Open	0	0	0	0	0
Limited to Existing	120,310	0	0	0	0
Limited to Designated	137,762	136,983	256,849	256,853	256,853
Closed	170,084	291,173	171,307	171,303	171,303
TOTAL	**428,156**	**428,156**	**428,156**	**428,156**	**428,156**
Seasonal Closure	89,388	428,157	279,963	300,704	231,584

Alternative C

Planning Area
OHV and mechanized vehicle use would be minimized in accordance with the limited to designated routes and closed OHV designations (Table 2.19.1 and DRMP/DEIS Map 2.11). Emphasis would be on the protection of natural values. Organized OHV or mechanized vehicle events would be allowed only on designated roads within areas designated as limited. Table 2.21.2 specifies the OHV designations for the ACECs/RNAs. All WSA cherrystem roads and those ways identified in the WSA inventory would be available for use. Four parcels found to have wilderness characteristics would be designated as limited to designated roads for OHV and mechanized vehicle use.

Table 2.19.3: OHV Designation Acreages by Alternative in the AMU (Public Land Acres Only)

Designation	Alternative A (acres)	Alternative B (acres)	Alternative C (acres)	Proposed RMP (acres)	Alternative E (acres)
Open	675,914	0	0	25,285	683,968
Limited to Existing	3,145	0	0	0	535,666
Limited to Designated	542,255	658,723	1,219,185	1,194,832	601
Closed	0	562,591	2,129	1,197	1,079
TOTAL	**1,221,314**	**1,221,314**	**1,221,314**	**1,221,314**	**1,221,314**
Seasonal Closure	4,056	90,836	102,202	94,033	3,196

CMPA
The following roads bounded by the Steens Mountain Wilderness would be designated as closed to all motorized use: the Rooster Comb section of the Steens Loop Road, Fish Creek, Cold Springs from west of Nye Cabin to Riddle Bothers Ranch, and Bone Creek from the Carlson Creek intersection to the top of Whiskey Hill. The core of the CMPA would be closed seasonally with an additional gate installed on Moon Hill Road at the Diamond Grain Camp Road. The existing seasonal closure would be expanded to include all public lands affected by gate closures.

AMU
The Catlow Valley parcels and the Alvord Desert playa would be designated as closed to all OHV and mechanized vehicle use. The remainder of the AMU, including the WSAs, would be designated as limited to designated roads and ways for all OHV and mechanized vehicle use. In addition, the Trout Creek Mountains and Arizona Creek/Stergen Meadows areas would be closed seasonally to OHV and mechanized vehicle use. Two gates would be installed on the Trout Creek Mountains Road. Gates would also be installed on the Ten Cent Meadows and Starr Ridge Roads.

Proposed RMP

Planning Area
OHV and mechanized vehicle use would be cooperatively managed in accordance with OHV designations in Table 2.19.1 and Map 2.19.1. The BLM would seek cooperative agreements with OHV and mechanized vehicle clubs and other users. OHV and mechanized vehicle organized events would be allowed, when consistent with the protection of resource values and OHV and mechanized vehicle designations. The OHV and mechanized vehicle designations for ACECs/RNAs would be as specified in Table 2.21.2. All WSA cherrystem roads and those ways identified in the WSA inventory would be available for use.

CMPA
The Fish Creek Road, Cold Springs Road, Newton Cabin Road, Bone Creek Road, Indian Creek Road, and Big Alvord Creek Road would remain open. The core of the CMPA would be closed seasonally with an additional gate installed on Moon Hill Road approximately ten miles south of the Diamond Grain Camp Road. This gate would be closed when the Page Springs gate is closed. A second gate would be installed at the Diamond Grain Camp Road and would be closed from February 1 through May 15 of each year. The existing seasonal closure would be expanded to include all public lands affected by gate closures.

AMU
All WSAs would be designated as limited to designated roads and ways for OHV and mechanized vehicle use. The Catlow Valley parcels would be designated as closed to all OHV and mechanized vehicle use. The Alvord Desert playa would be designated as open to all OHV and mechanized vehicle use. The remainder of the AMU would be designated as limited to designated routes for all OHV and mechanized vehicle use. In addition, the Trout Creek Mountains and Arizona Creek/Stergen Meadows areas would be closed seasonally. Two gates would be installed on the Trout Creek Mountains Road. Gates would also be installed on the Ten Cent Meadows and Starr Ridge Roads.

Alternative E

Planning Area
OHV and mechanized vehicle opportunities would be maximized, except in areas designated closed or limited, in compliance with existing laws, regulations, and policies (Table 2.19.1 and DRMP/DEIS Map 2.13). Opportunities for organized OHV and mechanized vehicle events would be increased. OHV and mechanized vehicle designations for the ACECs/RNAs would be as specified in Table 2.21.2. All WSA cherrystem roads and those ways identified in the WSA inventory would be available for use.

CMPA
The Fish Creek Road, Cold Springs Road, Newton Cabin Road, Bone Creek Road, Indian Creek Road, and Big Alvord Creek Road would remain open. The upper Steens Mountain area would be closed seasonally. Motor vehicles would be allowed to the 5,600-foot elevation level on the North Steens Loop Road and to South Steens Campground on the South Steens Loop Road without winter recreation permits, when road conditions are suitable. A gate would be installed on the North Steens Loop Road at about the 5,600-foot elevation level.

AMU
All WSAs would be designated as limited to existing roads and ways for OHV and mechanized vehicle use. The Catlow Valley parcels would be designated as closed to all OHV and mechanized vehicle use. The Borax Lake area would be designated as limited to designated roads and ways for OHV and mechanized vehicle use. The Alvord Desert playa and the remainder of the AMU would be designated as open for OHV and mechanized vehicle use. Snow would be allowed to block access to the Trout Creek Mountains and Arizona Creek/Stergen Meadows areas.

2.19.2 Monitoring

See Appendix Q.

2.20 Recreation

2.20.1 Goal - Provide developed and undeveloped recreation opportunities, while protecting resources, to manage the increasing demand for resource dependent recreation activities.

2.20.1.1 Management Framework

The FLPMA provides for recreation use of public land as an integral part of multiple use management. Dispersed, unstructured activities typify the recreational uses occurring throughout the majority of the Planning Area. Policy guidelines in BLM Manual 8300 direct the BLM to designate special units known as Special Recreation Management Areas (SRMAs). Management within these SRMAs focuses on providing recreation opportunities that would not otherwise be available to the public, reducing conflicts among users, minimizing damage to resources, and reducing visitor health and safety problems. Major investments in recreation facilities and visitor assistance are appropriate in SRMAs when required to meet management objectives.

Public lands in a RA not designated as SRMAs become an Extensive Recreation Management Area (ERMA). Management direction within an ERMA focuses on actions to facilitate recreation opportunities by providing basic information and access. Visitors to an ERMA are expected to rely heavily on their own equipment, knowledge, and skills while participating in recreation activities.

In accordance with the FLPMA, the "BLM's Recreation 2000 Plan and Update" sets recreation policy on the national level. The policy emphasizes resource dependent recreation opportunities that typify the vast western landscape; striving

to meet the social and economic needs of present and future generations; providing for the health and safety of the visitor; and accomplishing these goals within the constraints of achieving and maintaining healthy ecosystems.

2.20.1.2 Management Direction by Alternative

Objective 1. Establish and manage recreation areas where the presence of high quality natural resources and the current or potential demand warrants intensive management practices to protect areas for their scientific, educational, or recreational values while accommodating anticipated increases in use for recreation activities in specific areas.

Management Common to All Alternatives

Throughout the Planning Area, occupancy and use for recreational camping is limited to 14 days in one location.

All lands not designated as SRMA(s) would become an ERMA.

Alternative A

The CMPA would be managed as an undesignated SRMA (see Map 2.20.1). The Steens Mountain Recreation Lands designation would be maintained.

Alternative B

Recreation management would be kept to a minimal level. SRMAs would not be designated. Congressionally and administratively designated areas (CMPA, WSRs, Steens Mountain Wilderness, WSAs, etc.) would be subject to a minimum level of management. The Steens Mountain Recreation Lands designation would be removed.

Alternative C

The CMPA, 94,897 acres in the Pueblo Mountains, and 92,927 acres in the Trout Creek Mountains would be designated as SRMAs (see DRMP/DEIS Map 2.15). The Trout Creek Mountains and Pueblo Mountains SRMAs would be managed with an emphasis on undeveloped, dispersed recreation opportunities and protection of natural values, while providing an associated level of support facilities. The Steens Mountain Recreation Lands designation would be removed.

Proposed RMP

The CMPA, 94,897 acres in the Pueblo Mountains, and 92,927 acres in the Trout Creek Mountains would be designated as SRMAs (see Map 2.21.1). The Pueblo Mountains and the Trout Creek Mountains SRMAs would be managed to provide quality recreation opportunities while protecting resource values. The Steens Mountain Recreation Lands designation would be removed.

Alternative E

The CMPA, 94,897 acres in the Pueblo Mountains, and 92,927 acres in the Trout Creek Mountains would be designated as SRMAs (see DRMP/DEIS Map 2.14). The Pueblo Mountains and the Trout Creek Mountains SRMAs would be managed to improve tourism and recreation opportunities. The Steens Mountain Recreation Lands designation would be removed.

Objective 2. Manage recreation facilities to protect natural resources and to meet user needs.

Management Common to All Alternatives

Management and maintenance of existing developed recreation sites would continue.

Maintenance of and repairs to existing facilities and design of any new facilities would incorporate Americans with Disabilities Act standards.

Alternative A

Planning Area
Expansion of existing developed recreation sites would be considered and tourism opportunities would be provided.

CMPA
The Mann Lake Recreation Site would be maintained in its present condition. Existing horse trailhead facilities at South Steens Campground would be maintained. Toilet(s) would not be installed along the North Steens Loop Road. A group camping area would not be developed nor would facilities for winter recreation. Lily Lake would continue to be managed as a dispersed recreation site. Trail access would not be provided to the Fir Grove.

AMU
New campgrounds would not be developed nor would toilets be installed at Pike Creek or Frog Spring. Trailhead parking would be provided near the mouth of Wildhorse Canyon.

Alternative B

Planning Area
Undeveloped recreation sites would be minimally managed. If natural processes are being jeopardized, undeveloped sites would be rehabilitated or closed.

CMPA
The Mann Lake Recreation Site would be maintained in its present condition. Existing horse trailhead facilities at South Steens Campground would be maintained. Toilet(s) would not be installed along the North Steens Loop Road. A group camping area would not be developed, nor would facilities for winter recreation. Lily Lake would be designated as a day use area. Trail access would not be provided to the Fir Grove.

AMU
New campgrounds would not be developed nor would toilets be installed at Pike Creek or Frog Spring. A staging area would not be provided adjacent to the Penland Road.

Alternative C

Planning Area
Recreation management would focus on dispersed activities, while assuring the protection of natural and cultural values. Recreation developments would be allowed only for the protection and interpretation of cultural and natural values and to provide for public health and safety. If resource values are affected beyond acceptable levels, undeveloped site(s) would be rehabilitated or closed.

CMPA
The Mann Lake Recreation Site would be maintained in its present condition. Existing horse trailhead facilities at South Steens Campground would be maintained. One toilet would be installed and maintained along the North Steens Loop Road in the Fish Lake area. A group camping area would be developed within the confines of an existing campground. A nonmotorized winter recreation staging area would be developed along the North Steens Loop Road. Lily Lake would be designated as a day use area and interpretive signs would be installed. The route to the Fir Grove would be minimally maintained to protect natural values and provide for public safety.

AMU
New campgrounds would not be developed. Toilets would be installed at Pike Creek and Frog Spring. A staging area would be provided adjacent to the Penland Road.

Proposed RMP

Planning Area
Management of existing recreation sites, areas, and their associated improvements would continue and site expansion would be allowed. If demand warrants, new recreation sites and areas would be developed to protect cultural and natural values and provide for public health and safety. Tourism opportunities would be allowed if consistent with other resource objectives.

CMPA
Any facilities or actions to accommodate or manage the existing or anticipated recreation use would be addressed and analyzed in a comprehensive recreation plan that would be prepared after the RMP is completed. Facilities or actions that would be addressed for this management objective include Mann Lake Recreation Site, South Steens Loop Road trailhead facility and connector trails, Lily Lake, North Steens Loop Road toilet, winter use staging area, cross-country ski trail system (when there is demonstrated public interest), and a possible Fir Grove Trail. Decisions on other potential projects would be considered as part of the comprehensive recreation plan. Actions or facilities needed to protect public health and safety and to maintain existing facilities, as well as cooperative actions with private landowners or cooperative facilities on private lands, could be assessed and implemented prior to completion of the comprehensive recreation plan.

AMU
Any proposed facilities would be further analyzed in site specific recreation project plans. Possible project plans could be written for the Frog Springs area, Pike Creek, and the Penland Road.

Alternative E

Planning Area
Tourism opportunities would be increased through the expansion of existing developed and undeveloped recreation sites. New developed recreation sites and areas would be established to meet increased recreation demand.

CMPA
The Mann Lake Recreation Site would be upgraded to a full service campground. A trailhead facility (parking, hitching rail, loading ramp, information) for horse users would be developed near the South Steens Campground. Trails connecting the new trailhead to existing trails would be designed and constructed. Toilets would be installed and maintained at the three overlooks at the top of the Steens Loop Road. In cooperation with private land owners, a group camping area would be developed east of Fish Lake. A winter use staging area would be developed along the North Steens Loop Road. A system of cross-country ski trails and a nonmotorized winter play area would be developed at the west end of the WJMA. Lily Lake would be managed as a dispersed recreation site and a toilet would be installed. A small trailhead would be developed adjacent to the North Steens Loop Road and the route to the Fir Grove would be marked and minimally maintained.

AMU
A developed campground would be constructed in the Frog Spring area. A toilet would be installed and maintained at Pike Creek, in cooperation with the private land owner. A staging area with information, a toilet, and horse support facilities would be provided adjacent to the Penland Road.

Objective 3. Outside of the intensive use areas and developed recreation sites, manage the remainder of the Planning Area for dispersed recreation.

Management Common to All Alternatives

Maintenance of and repairs to existing facilities and design of any new facilities would incorporate Americans with Disabilities Act standards.

Alternative A

Planning Area
Management of existing undeveloped recreation sites would continue. Public safety and resource protection would be provided. Dispersed tourism opportunities would be developed.

CMPA
Trails would not be developed outside of the Steens Mountain Wilderness.

Alternative B

Planning Area
Existing undeveloped recreation sites would be minimally managed and natural processes would be protected. If natural processes are being jeopardized, site(s) would be rehabilitated or closed.

CMPA
Trails would not be developed outside of the Steens Mountain Wilderness.

Alternative C

Planning Area
Existing undeveloped recreation sites would be minimally managed. Recreation management would focus on dispersed activities while protecting natural and cultural values and providing for public health and safety. If resource values are affected beyond acceptable levels, site(s) or would be rehabilitated or closed.

CMPA
Outside of the Steens Mountain Wilderness, trails would be developed where necessary to protect natural values.

Proposed RMP

Planning Area
Natural and cultural values would be protected while providing for public safety. Dispersed recreation opportunities, that are consistent with other resource objectives, would be developed.

CMPA
Any additional facilities or actions to accommodate or manage the existing or anticipated recreation use would be addressed and analyzed in a comprehensive recreation plan that would be prepared after the RMP is completed. Facilities or actions that would be addressed for this management objective include trails outside of the Steens Mountain Wilderness when there is demonstrated public interest. Decisions on other potential projects would be considered as part of the comprehensive recreation plan.

Alternative E

Planning Area
Tourism opportunities would be increased through management of undeveloped recreation sites and by providing additional opportunities for dispersed recreation.

CMPA
Outside of the Steens Mountain Wilderness, trails would be developed to provide additional hiking and nonmotorized recreation opportunities.

Objective 4. Manage visitor use in the Planning Area to protect natural resources and to provide a variety of recreation opportunities.

Management Common to All Alternatives

Maintenance of and repairs to existing facilities and design of any new facilities would incorporate Americans with Disabilities Act standards.

The current access management to the Riddle Brothers Ranch would be continued.

Alternative A

Planning Area
Visitor use would be managed for unlimited recreation opportunities. Group size would not be limited for any recreation activity.

CMPA
Camping locations would not be restricted. Parking on the Rooster Comb section of the South Steens Loop Road would not be restricted. Snowmobile use would be limited as follows: Snowmobiles are allowed on the North Steens Loop Road from the 5,600-foot level to the Kiger Overlook. An authorized guide must accompany snowmobilers to the Nye Place and along the Dingle Creek road. Nonmotorized boating on the mainstem Donner und Blitzen River would only be

allowed when the lowest gate on the South Steens Loop Road is open. Visitor use at the overlooks would not be restricted. Permits would not be required to visit the CMPA.

AMU
Camping would be allowed anywhere, including all AMU ACECs/RNAs and Mickey Hot Springs. Dispersed users would be allowed to use whatever method of solid human waste disposal they prefer. Routes for mechanized vehicles (i.e., mountain bikes) would not be developed.

Alternative B

Planning Area
Visitor use would be managed for minimum recreation opportunities through closures, regulations, or other means, to maximize natural processes. Group size would be limited for all activities in order to allow natural processes to be unimpaired.

CMPA
The following areas would be closed to camping: all RNAs, the Steens Loop Road above the Jackman Park and South Steens Campgrounds, the Wildhorse Overlook Road, all overlooks, Wildhorse Lake basin, and all areas above timberline within view of the Steens Loop Road. Camping would be allowed only in developed campgrounds (outside the Steens Mountain Wilderness). All snowmobile use in the CMPA would be eliminated. The existing permit system for nonmotorized winter recreation would be continued. Nonmotorized boating on the mainstem Donner und Blitzen River would not be allowed. Visitor use at the overlooks would be restricted to designated trails, and the interpretive signs would be moved to the parking lots. Permits would be required for all CMPA users.

AMU
Mickey Hot Springs would be closed to camping. Dispersed users would be required to pack out all solid human waste. Routes for mechanized vehicles (i.e., mountain bikes) would not be developed.

Alternative C

Planning Area
Visitor use would be managed to protect natural values. Group size would be limited.

CMPA
The following areas would be closed to camping: all RNAs, the Steens Loop Road above the Jackman Park and South Steens Campgrounds, the Wildhorse Overlook Road, all overlooks, and Wildhorse Lake basin. Camping would be allowed only in developed campgrounds and designated dispersed sites (outside the Steens Mountain Wilderness). All snowmobile use associated with the North Steens Loop Road would be eliminated. The existing permit system for nonmotorized winter recreation would be continued. Nonmotorized boating on the mainstem Donner und Blitzen River would be allowed only when the lowest gate on the South Steens Loop Road is open and only if it does not affect the WSR Outstandingly Remarkable Values (ORVs). Visitor use at overlooks would be restricted to designated trails, and the interpretive signs would be moved to the parking lots. Permits would be required for all Steens Loop Road users.

AMU
All AMU RNAs and Mickey Hot Springs would be closed to camping. Toilets would be installed and maintained at Pike Creek and Frog Spring. Dispersed users would be encouraged to pack out all solid human waste. Routes for mechanized vehicles (i.e., mountain bikes) would not be developed.

Proposed RMP

Planning Area
Visitor use would be managed in a manner that encourages economic growth and cooperative management practices for recreation opportunities that are consistent with other resource objectives. Group size limits would be evaluated on a case-by-case basis.

CMPA
Close the Kiger Gorge, East Rim, and Wildhorse Overlook parking areas to camping and overnight use. The Rooster Comb would be closed to parking or stopping, except at designated locations; a small pullout would be developed at the

east end of the Rooster Comb. Visitors would be encouraged to stay on designated trails at the overlooks and the interpretive signs would be moved to the parking lots. Any additional facilities or actions to accommodate or manage the existing or anticipated recreation use would be addressed in a comprehensive recreation plan that would be prepared after the RMP is completed. Facilities or actions that would be addressed and analyzed for this management objective include motorized and nonmotorized winter recreation, dispersed camping, nonmotorized boating on the mainstem Donner und Blitzen River, Blitzen Crossing day-use designation, and permits to visit the CMPA. Decisions on other potential projects would be considered as part of the comprehensive recreation plan.

AMU
All AMU RNAs and Mickey Hot Springs would be closed to camping. Any proposed facilities or actions would be further analyzed in site specific recreation project plans. Possible project plans could be written for the Frog Springs area, Pike Creek, other dispersed campsites, and mountain bike trails. Dispersed users would be encouraged to pack out all solid human waste.

Alternative E

Planning Area
Visitor use would be managed to maximize recreation opportunities that are consistent with other resource objectives. Group size would not be limited for any recreation activity.

CMPA
Camping would be allowed anywhere, unless otherwise restricted. The Rooster Comb would be closed to parking or stopping, except at designated overlooks; a small pullout would be developed at the east end of the Rooster Comb. Snowmobile use would be allowed on all designated roads. The existing permit system for winter recreation would be continued. A river access system similar to the existing winter use permit system would be implemented, with the number of users not limited. Visitor use at the overlooks would not be restricted. The interpretive signs would be moved to the parking lots. Permits would not be required to visit the CMPA.

AMU
Mickey Hot Springs would be closed to camping. Toilets would be installed and maintained at Pike Creek, Frog Spring, and other dispersed campsites throughout the AMU. Other dispersed users would be encouraged to pack out all solid human waste. Routes for mechanized vehicles (i.e., mountain bikes) would be developed as demand warrants.

Objective 5. Provide information and educational opportunities to public land visitors.

Alternative A

Information (i.e., maps and brochures) and education opportunities would be provided to improve visitors' experiences. The current informational and directional sign installation and maintenance program would continue.

Alternative B

Information (i.e., maps and brochures) and education opportunities would be provided to improve visitors' experiences. New sign placement would be minimized. Existing signs would be maintained and replaced only as needed for public health and safety or resource protection.

Alternative C

Information (i.e., maps and brochures) and education opportunities would be provided to improve visitors' experiences. New sign placement would be minimized. Existing signs would be maintained and replaced and new signs installed only as needed for public health and safety or resource protection.

Proposed RMP

Information (i.e., maps and brochures) and education opportunities would be provided to improve visitors' experiences. In the CMPA, existing signs would be maintained and replaced and new signs installed only as needed for public health and safety or resource protection. In the AMU, signs would be installed, maintained, and replaced as needed.

Alternative E

Extensive information and education opportunities would be provided to increase tourism activities. Signs would be installed, maintained, and replaced to maximize public safety and confidence.

Objective 6. Manage commercial, competitive, educational, and organized group recreation activities.

Alternative A

CMPA
SRPs for commercial, competitive, and organized group activities would be issued on a case-by-case basis.

AMU
SRPs for commercial, competitive, and organized group activities would be issued on a case-by-case basis. SRPs for organized group and commercial use of the Alvord Desert playa could be issued if the wilderness values of the Alvord Desert WSA would not be impaired.

Alternative B

CMPA
Existing, long-term SRPs would be managed and renewed in conformance with existing laws and regulations. No new SRPs would be issued.

AMU
Existing SRPs would be cancelled and new SRPs would not be issued. SRPs would not be issued for the Alvord Desert playa.

Alternative C

CMPA
SRPs would be issued as needed to meet the demand for permits, while protecting cultural and natural resource values and providing for public safety. Allocations, such as limits on party size, number of trips, or number of permittees, would be implemented.

AMU
SRPs would be issued as needed to meet the demand for permits, while protecting cultural and natural resource values and providing for public safety. If needed, allocations such as limits on party size, number of trips, or number of permittees, would be implemented. SRPs would not be issued for the Alvord Desert playa.

Proposed RMP

CMPA
Outside of the Steens Mountain Wilderness, SRPs would be issued as needed to meet the demand for permits, while protecting cultural and natural resource values and providing for public safety. If needed, allocations such as limits on party size, number of trips, or number of permittees, would be implemented.

AMU
SRPs would be issued as needed to meet the demand for permits, while protecting cultural and natural resource values and providing for public safety. If needed, allocations such as limits on party size, number of trips or number of permittees, would be implemented. SRPs for organized group and commercial use of the Alvord Desert playa could be issued if the wilderness values of the Alvord Desert WSA would not be impaired.

Alternative E

CMPA
Commercial, competitive, and organized group opportunities and activities would be emphasized through the issuance of SRPs.

AMU
Commercial, competitive, and organized group opportunities and activities would be emphasized through the issuance of SRPs. SRPs for organized group, commercial, and competitive use of the Alvord Desert playa could be issued if the wilderness values of the Alvord Desert WSA would not be impaired.

Objective 7. Manage Back Country Byways (BCBs) to protect the recognized values.

Alternative A

Planning Area
Existing BCBs would be managed in conformance with existing laws and regulations.

CMPA
Vehicle pullouts would not be constructed along the Steens Loop Road.

Alternative B

Planning Area
Current BCBs would be eliminated and new BCBs would not be designated. The Steens Mountain BCB designation would be removed because the Steens Loop Road would be closed from the Kiger Overlook turnoff to west of the Blitzen River.

CMPA
Vehicle pullouts would not be constructed along the Steens Loop Road.

Alternative C

Planning Area
Existing BCBs would be managed in conformance with existing laws and regulations.

CMPA
Vehicle pullouts would not be constructed along the Steens Loop Road.

Proposed RMP

Planning Area
Existing BCBs would be managed in conformance with existing laws and regulations. Interpretive management plans for existing BCBs would be developed and implemented. Additional byways or scenic tour routes that support cooperative management would be designated.

CMPA
Any additional facilities or actions to accommodate or manage the existing or anticipated recreation use would be addressed and analyzed in a comprehensive recreation plan that would be prepared after the RMP is completed. Facilities or actions that would be addressed for this management objective include vehicle pullouts. Decisions on other potential projects would be considered as part of the comprehensive recreation plan.

Alternative E

Planning Area
Existing BCBs would be managed in conformance with existing laws and regulations. Interpretive management plans for existing BCBs would be developed and implemented. Additional byways or scenic tour routes that support cooperative management would be designated. New BCBs would be designated to increase tourism potential and accommodate anticipated growth in driving for pleasure.

CMPA
Vehicle pullouts would be constructed at regular intervals along the Steens Loop Road.

Objective 8. Manage the Oregon High Desert National Recreation Trail to protect the recognized values and setting.

Alternative A

Management would continue under the current MOU with the Desert Trail Association. Trailhead facilities would not be developed.

Alternative B

The Desert Trail Association MOU would be cancelled and the trail corridor would be removed from maps. Trailhead facilities would not be developed.

Alternative C

Management would continue under the current MOU with the Desert Trail Association. Minimal trailhead facilities would be installed at Domingo Pass and Frog Spring.

Proposed RMP

Management would continue under the current MOU with the Desert Trail Association. Any proposed facilities would be further analyzed in site specific recreation project plans. Possible project plans could be written for minimal trailhead facilities at Domingo Pass, Frog Spring, near Denio, and Fields.

Alternative E

Management would continue under the current MOU with the Desert Trail Association. Complete trailhead facilities would be installed at Domingo Pass, near Denio, and at Frog Spring. In cooperation with the Fields Store, facilities at Fields would be installed.

2.20.2 Monitoring

See Appendix Q.

2.21 Areas of Critical Environmental Concern

2.21.1 Goal - Retain existing and designate new ACECs where relevance and importance criteria are met and special management is required to protect the identified values.

2.21.1.1 Management Framework

Section 202(c)(3) of the FLPMA mandates that priority be given to the designation and protection of ACECs. These areas are defined in section 103(a) as areas where special management attention is required to protect and prevent irreparable damage to important values, resources, systems or processes, or to protect life and safety from natural hazards.

Appendix K contains a description of each existing and proposed ACEC including the relevant and important values of each area. The ACEC designations and acreages for each Alternative are listed in Table 2.21.1. The ACECs to be designated in the Proposed RMP are shown on Map 2.21.1.

Specific management actions that differ for alternatives within each existing or proposed ACEC are discussed under the heading for that ACEC. Actions are not separated by management objective as with other sections in this chapter. The common management actions are those that would be conducted in the same manner where they are identified as part of an ACEC alternative. All of the management actions are outlined in Table 2.21.2, Management Prescriptions for Each ACEC by Alternative. The following are the management actions that would apply to more than one ACEC and to more than one Alternative.

Summary of ACEC Designation: Under Alternative A, no new ACECs would be designated and those existing, totaling 132,112 acres, would be retained. Under Alternatives B and E, all existing ACEC designations would be revoked and

one new ACEC, Mickey Hot Springs, would be designated for a total of 42 acres. Management under Alternative B for the areas where ACEC designations were revoked would be the same as applied across the Planning Area. Under Alternative C, all of the 15 existing ACECs would be retained, with additions and deletions, and six proposed ACECs would be designated, for a total of 143,426 acres. Under the Proposed RMP, 12 of the existing ACECs would be retained, with additions and deletions, while the designation of three of the existing ACECs (Alvord Peak, Pickett Rim and Steens Mountain) would be revoked. Five new ACECs would be designated for a total of 66,870 acres.

Research Natural Areas: RNAs are managed to preserve natural features and ecosystems in as natural a condition as possible, for research and educational purposes that relate to the Research Natural Area (RNA) values. All RNAs shall be designated ACECs and follow the ACEC designation guidance provided by the BLM Manual. Nine of the 15 existing ACECs in the Planning Area are RNA/ACECs.

Special Status Plant and Animal Species: Disturbances to all special status plant and animal populations would be avoided in all ACECs where they occur. General inventories, monitoring, and research would continue for special status plants. Conservation agreements would be written for listed plant species or those in danger of being listed.

Fire management in ACECs: Under the Proposed RMP and Alternatives A, C, and E, in all ACECs and RNAs, wildland fires would be managed according to appropriate management response; however, some ACECs would be analyzed for possible wildland fire use. Use of heavy equipment in ACECs, WSAs, and RNAs would be avoided and would require line officer approval. Use of retardant would be allowed within these areas for initial attack. Retardant use during an extended attack would be considered as a part of the wildland fire situation analysis, considering the resource values at risk. If used, heavy equipment would be restricted to existing roads and ways. Prescribed fires would be used in ACECs where they would preserve the desired characteristics of the ACEC and meet management objectives.

Weed management in ACECs: Noxious weeds would be aggressively controlled using integrated weed management methods such as biological control, site specific spraying, and grubbing by hand that are consistent with protection and promotion of relevant and important values. Any weed control measures proposed in WSAs within ACECs would be consistent with WSA IMP direction. Weed control measures proposed within wilderness or WSRs would be consistent with legislation covering those areas.

*WSA management in ACEC*s: All management actions for those portions of the ACEC within a WSA would be governed by the WSA IMP until such time as Congress makes a determination regarding wilderness designation for that WSA. Any WSAs, or portions thereof, designated as an ACEC and later released from WSA status would be managed according to the applicable management direction for that ACEC. Under some alternatives, the proposed ACEC management within WSAs may be more restrictive than the WSA IMP, such as closing an area to livestock grazing or limiting vehicle use to designated roads and ways rather than existing roads and ways. Nine proposed or existing ACECs overlap with existing WSAs.

Wilderness and WSRs in ACECs: All management actions for ACECs located within wilderness or WSRs would be governed by the Wilderness Act or the WSR Act as amended.

Nondestructive research: Nondestructive research is encouraged in all of the proposed and existing ACECs and is not limited only to those areas that have RNAs. Any research would need to be authorized by the BLM in writing and where necessary, subject to the permit process. It is assumed that the resultant data and information gathered would be shared with the BLM to help guide management of these areas.

Recreation: Recreational activities are not encouraged within ACECs unless the ACEC was designated with recreational use in mind. Commercial use, or use requiring a special permit, that occurs or is proposed within an ACEC would be evaluated on a case-by-case basis and would be permitted, modified, or prohibited as needed to protect the ACEC values. Camping would be prohibited in RNA/ACECs, except at specified RNAs under specific alternatives. Camping would be allowed in ACECs.

Minerals (Leasable, Locatable, Salable): According to 43 CFR 3809.11, an approved plan of operations is required prior to commencing any operation, other than casual use, involving locatable minerals in a designated ACEC, regardless of the size of the disturbed area.

2.21.1.2 Management Direction by Alternative

Objective. Retain and manage existing ACECs if they meet relevance and importance criteria and require special management or protection.

Alvord Desert ACEC

Alternative A

The existing ACEC designation and boundaries would be retained. The size would remain at 17,933 acres. Since the ACEC is entirely within the Alvord Desert WSA, the visual resources are managed as VRM Class I. The roads that run through the ACEC are maintained regularly due to important access considerations. Road maintenance is limited to the existing roadbed. OHV and mechanized vehicle use is limited to the designated roads and the small portion of playa lakebed within the ACEC. New ROWs or other realty use authorizations are avoided unless the activity is compatible with the purpose for which the area was designated.

Due to the implementation of the Steens Act, the ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The ACEC is located within the Alvord Grazing Allotment and is open to grazing from December to April. Since the ACEC was originally designated for protection of unique plant communities, collection of plant materials is allowed by permit only.

Alternative B

The ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would continue to be managed under the WSA IMP until Congress makes a decision regarding wilderness designation for the area.

Alternative C

The ACEC would be retained and an additional 3,682 acres added, making the total designation 21,615 acres. The road through the ACEC would be maintained as needed for access considerations. OHV and mechanized vehicle use would be limited to designated routes. The ACEC would be an exclusion area for new ROWs or other realty use authorizations except for access needs to nonpublic property.

The area within the ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Livestock grazing would continue under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or improved. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection of plant materials would be allowed by permit only.

Proposed RMP

The existing ACEC would be retained and an additional 3,682 acres added, making the total designation 21,615 acres. The road through the ACEC would be maintained as needed. Road maintenance would be limited to the existing roadbed. OHV and mechanized vehicle use would be limited to designated routes. New ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated. The ACEC would be managed as VRM Class I.

The area within the ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Livestock grazing would continue under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or improved. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection of plant materials would be allowed by permit only.

Table 2.21.1: Areas Of Critical Environmental Concern Acres by Alternative

	Located in Withdrawal Area	Located in CMPA	Located in AMU	Alternative A Acres	Alternative B Acres	Alternative C Acres	Proposed RMP Acres	Alternative E Acres
EXISTING ACEC								
Alvord Desert ACEC	Yes	No	Yes	17,933	0	21,615	21,615	0
Alvord Peak ACEC	Yes	Yes	No	14,040	0	14,040	0	0
Borax Lake ACEC	Yes	No	Yes	520	0	600	600	0
East Kiger Plateau RNA/ACEC	Yes	Yes	No	1,216	0	1,216	1,216	0
Kiger Mustang ACEC	Yes[2]	Yes[2]	No	31,725	0	31,725	31,725	0
Little Wildhorse Lake RNA/ACEC	Yes	Yes	No	241	0	241	241	0
Little Blitzen RNA/ACEC	Yes	Yes	No	2,530	0	2,255	2,255	0
Long Draw RNA/ACEC	No	No	Yes	441	0	441	441	0
Mickey Basin RNA/ACEC	Yes	No	Yes	560	0	560	560	0
Pickett Rim ACEC	No	No	Yes	3,941	0	3,941	0	0
Pueblo Foothills RNA/ACEC	No	No	Yes	2,503	0	2,424	2,424	0
Rooster Comb RNA/ACEC	Yes	Yes	No	716	0	683	683	0
South Fork Willow Creek RNA/ACEC	Yes	Yes	No	231	0	186	186	0
Steens Mountain ACEC	Yes	Yes	No	57,501	0	57,501	0	0
Tum Tum Lake RNA/ACEC	No	No	Yes	2,064	0	1,689	1,689	0
TOTAL EXISTING ACEC ACRES[1]				**136,162**	**0**	**139,117**	**63,635**	**0**
PROPOSED ACEC								
Big Alvord Creek RNA/ACEC	Yes	Yes	No	0	0	1,676	1,676	0
Catlow Redband Trout ACEC	Yes	Yes	No	0	0	6,800	0	0
East Fork Trout Creek RNA/ACEC	No	No	Yes	0	0	361	361	0
Fir Groves ACEC	Yes	Yes	No	0	0	477	477	0
Mickey Hot Springs ACEC	Yes	No	Yes	0	42	42	42	42
Serrano Point RNA/ACEC	Yes	No	Yes	0	0	679	679	0
TOTAL EXISTING & PROPOSED[1]				**136,162**	**42**	**149,152**	**66,870**	**42**
ACEC OVERLAP ACRES[3]				**4,050**	**0**	**5,726**	**0**	**0**
TOTAL ACEC ACRES				**132,112**	**42**	**143,426**	**66,870**	**42**

[1]The total ACEC acres include areas of overlap with each ACEC total accounted for.
[2]Part of the Kiger Mustang ACEC is in the Withdrawal Area and the CMPA (31,859 acres), and the rest is in the Three Rivers RA.
[3]To eliminate double counting acres, the ACEC overlap areas are accounted for and deducted.

Table 2.21.2: Management Prescriptions for Each ACEC by Alternative

							Wood/ Plant Collect		Minerals		
ACEC	**Alternative**	**Acres**	**ROWs**	**OHV**	**VRM**	**Grazing**		**Roads**	**Leasable**	**Locatable**	**Salable**
Alvord Desert	A	17,933	AV	Ld	I	O	L	L	NL	W	C
	B	-									
	C	21,615	E	Ld	I	O	L	L	NL	W	C
	PRMP	21,615	AV	Ld	I	O	L	L	NL	W	C
	E	-									
Alvord Peak	A	14,040	E	C	I	O	L	NA	NL	W	C
	B	-									
	C	14,040	E	C	I	O	L	NA	NL	W	C
	PRMP	-									
	E	-									
Borax Lake	A	520	O	Ld	III	O	O	L	NL	W	C
	B	-									
	C	600	E	C	II	O/C	L	NA	NL	W	C
	PRMP	600	AV	Ld	II	O/C	L	L	NL	W	C
	E										
Pickett Rim	A	3,941	O	Ld	II	O	O	L	O	O	O
	B	-									
	C	3,941	E	Ld	II	O	L	L	NL	W	C
	PRMP	-									
	E	-									
Steens Mountain	A	57,501	E/AV/O	C/Ld	I/II	O/C	L	L	NL	W	C
	B	-									
	C	57,501	E	C/Ld	I	O/C	L	L	NL	W	C
	PRMP	-									
	E	-									
Kiger Mustang	A	31,725	AV/E	O/Ld	I/IV	O	O	L	NL	W	C
	B	-									
	C	31,725	E	Ld	I/II	O	L	L	NL	W	C
	PRMP	31,725	AV	Ld	I/III	O	O	L	NL	W	C

ACEC	Alternative	Acres	ROWs	OHV	VRM	Grazing	Wood/ Plant Collect	Roads	Minerals		
									Leasable	Locatable	Salable
	E	-									
East Kiger Plateau RNA	A	1,216	AV/E	C	I	O/C	L	NA	NL	W	C
	B	-									
	C	1,216	E	C	I	C	L	NA	NL	W	C
	PRMP	1,216	AV/E	C	I	O/C	L	NA	NL	W	C
	E	-									
Little Blitzen RNA	A	2,530	E	C	I	C	L	L	NL	W	C
	B	-									
	C	2,255	E	C	I	C	L	NA	NL	W	C
	PRMP	2,255	E	C	I	C	L	NA	NL	W	C
	E	-									
Little Wildhorse Lake	A	241	E	C	I	C	L	NA	NL	W	C
	B	-									
	C	241	E	C	I	C	L	NA	NL	W	C
	PRMP	241	E	C	I	C	L	NA	NL	W	C
	E	-									
Long Draw RNA	A	441	AV	Ld	I	O	L	L	NL	O	C
	B	-									
	C	441	E	Ld	I	O	L	L	NL	W	C
	PRMP	441	AV	Ld	I	O	L	L	NL	O	C
	E	-									
Mickey Basin RNA	A	560	AV	Ld	I	O	L	L	NL	W	C
	B	-									
	C	560	E	Ld	I	O/C	L	L	NL	W	C
	PRMP	560	AV	Ld	I	O/C	L	L	NL	W	C
	E	-									
Pueblo Foothills RNA	A	2,503	AV	Ld	I	O	L	L	NL	O	C
	B	-									
	C	2,424	E	Ld	I	O	L	L	NL	W	C
	PRMP	2,424	AV	Ld	I	O	L	L	NL	O	C
	E	-									

							Wood/ Plant Collect		Minerals		
ACEC	**Alternative**	**Acres**	**ROWs**	**OHV**	**VRM**	**Grazing**		**Roads**	**Leasable**	**Locatable**	**Salable**
Rooster Comb RNA	A	716	E	C	I	C	L	L	NL	W	C
	B	-									
	C	683	E	C	I	C	L	NA	NL	W	C
	PRMP	683	E	C	I	C	L	NA	NL	W	C
	E	-									
South Fork Willow Cr RNA	A	231	E	C	I	C	L	L	NL	W	C
	B	-									
	C	186	E	C	I	C	L	NA	NL	W	C
	PRMP	186	E	C	I	C	L	NA	NL	W	C
	E	-									
Tum Tum Lake RNA	A	2,064	O	Ld	III	O	L	L	O	O	O
	B	-									
	C	1,689	E	Ld	II	C	L	L	NL	W	C
	PRMP	1,689	AV	Ld	II	C	L	L	O	O	C
	E										
East Fork Trout Cr RNA	A	-									
	B	-									
	C	361	E	Ld	I	C	L	L	NL	W	C
	PRMP	361	AV	Ld	I	O	L	L	NL	O	C
	E	-									
Mickey Hot Springs	A	-									
	B	42	E	C	I/II	C	O	NA	NL	W	C
	C	42	E	C	I/II	C	O	NA	NL	W	C
	PRMP	42	AV	C	I/II	C	O	NA	NL	W	C
	E	42	AV	C	I/II	C	O	NA	NL	W	C
Serrano Point RNA	A	-									
	B	-									
	C	679	E	Ld	II	C	L	L	NL	W	C
	PRMP	679	AV	Ld	II	O	L	L	NL	W	C
	E	-									

							Wood/ Plant Collect		Minerals		
ACEC	**Alternative**	**Acres**	**ROWs**	**OHV**	**VRM**	**Grazing**		**Roads**	**Leasable**	**Locatable**	**Salable**
Big Alvord Cr RNA	A	-									
	B	-									
	C	1,676	E	C	I	C	L	NA	NL	W	C
	PRMP	1,676	E	C	I	C	L	NA	NL	W	C
	E	-									
Fir Groves	A	-									
	B	-									
	C	477	E	Ld	II	C	L	L	NL	W	C
	PRMP	477	AV	Ld	II	O	L	L	NL	W	C
	E	-									
Catlow Redband Trout	A	-									
	B	-									
	C	6,800	E	C/Ld	I/II	O	L	NA	NL	W	C
	PRMP	-									
	E	-									

AV-Avoidance area for ROWs.
C - Closed to mineral material removal, OHV and mechanized vehicle use, or grazing.
E - Exclusion area for ROWs.

Ld - OHV and mechanized vehicle use limited to designated routes.
L - Limited; with limitations applicable to plant collection and road maintenance.
NL - No Lease; Not available for mineral leasing.
NA - Not applicable; no roads occur here so road maintenance does not apply.

O - Open; the activity is allowed in the area. In the case of locatable minerals within WSAs, the area is open to location of mining claims but is still subject to the WSA IMP nonimpairment criteria.
W - Withdrawn from mineral exploration and development.

Alt A - Present Management; No Action
Alt B - Exclude commodity production
Alt C - Emphasize natural values
PRMP - Balances commodity and natural values
Alt E - Emphasize commodity production

Alternative E

The ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would continue to be managed under the WSA IMP until Congress makes a decision regarding wilderness designation for the area.

Alvord Peak ACEC

Alternatives A and C

The existing ACEC designation and boundaries would be retained. The size of the ACEC would remain at 14,040 acres. Since the ACEC is entirely within the Steens Mountain Wilderness, the area would be managed as VRM Class I.

The roads through the ACEC are closed to OHV and mechanized vehicle use due to wilderness designation. Road maintenance is not an issue. The Alvord Peak ACEC is an exclusion area for new ROWs and other realty use authorizations unless access is needed to nonpublic property.

Due to the implementation of the Steens Act, the ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The ACEC is located within the Alvord Peak Grazing Allotment and is open to grazing from April to November. Grazing is under the control of existing permit stipulations and the approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or improved. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection or removal of plant materials is allowed by permit only.

Alternative B

The ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize natural processes. The area would continue to be managed under the provisions of the Wilderness Act.

Proposed RMP

The ACEC designation would be revoked. The area would continue to be managed under the provisions of the Wilderness Act.

Alternative E

The ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would continue to be managed under the provisions of the Wilderness Act.

Borax Lake ACEC

Alternative A

The existing ACEC designation and boundaries would be retained. The size would remain at 520 acres. The visual resources would continue to be managed as VRM Class III within the ACEC. OHV and mechanized vehicle use in the ACEC is limited to designated roads. The roads within the ACEC are maintained as needed for access. The area is open to new ROWs or other realty use authorizations.

Due to the implementation of the Steens Act, the ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Most of the ACEC is fenced, and that portion of the ACEC inside the fence is open to livestock grazing, but the area has not been grazed for several years. A total of 120 acres of the ACEC is outside the fence in the Tule Springs Grazing Allotment. This area is grazed in the winter by cattle and wild horses, but grazing animals rarely reach that part of the allotment containing the ACEC. The ACEC is open to collection of plant materials.

Alternative B

The ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. Management of the Borax Lake area would be the same as prescribed for the adjacent area.

Alternative C

The existing ACEC designation would be retained and 80 acres added, making the total designation 600 acres. The area would be closed to motorized and mechanized vehicle access. No new ROWs or other realty use authorizations would be allowed. The ACEC would be managed as VRM Class II.

The ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The area within the fenced exclosure would be closed to livestock grazing. Livestock grazing and wild horse use would continue on 120 acres of the ACEC outside the fenced exclosure. Livestock use would be managed under the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection or removal of plant materials is allowed by permit only.

Proposed RMP

The existing ACEC designation would be retained and 80 acres added, making the total designation 600 acres. Motorized and mechanized vehicle access through the ACEC would be limited/controlled through a cooperative management agreement among the BLM, TNC, USFWS, ODFW, and others. No cross-country travel would be permitted. ROWs and other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated. Actions would be pursued to acquire private inholdings from willing private land owners. The ACEC would be managed as VRM Class II.

The ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The area within the fenced exclosure would be closed to livestock grazing. Livestock grazing and wild horse use would continue on 120 acres of the ACEC outside the fenced exclosure. Livestock use would be managed under the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection or removal of plant materials is allowed by permit only.

Alternative E

The ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. Management of the Borax Lake area would be the same as prescribed for the adjacent area.

East Kiger Plateau RNA/ACEC

Alternative A

The existing RNA/ACEC designation and boundaries would be retained. The size would remain at 1,216 acres. Since the RNA/ACEC is almost entirely within the Steens Mountain Wilderness, visual resources would be managed as VRM Class I.

Since no roads are located in or around this RNA/ACEC, road maintenance is not an issue. The area is closed to OHV and mechanized vehicle use. The RNA/ACEC is an exclusion area for new ROW or realty use authorizations in the Wilderness Area. In the WSA, new ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated.

Due to the implementation of the Steens Act, the RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal.

All of the RNA/ACEC, except for 40 acres, is outside the No Livestock Grazing Area on Steens Mountain. The area is basically open to grazing but topographically excluded because of its location. Since the RNA/ACEC was originally designated for protection of unique plant communities, collection of plant materials would be allowed by permit only.

Alternative B

The RNA/ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would continue to be managed under the provisions of the Wilderness Act and the WSA IMP.

Alternative C

The existing RNA/ACEC designation and boundaries would be retained. The size would remain at 1,216 acres. Since the RNA/ACEC is almost entirely within the Steens Mountain Wilderness, visual resources would be managed as VRM Class I.

Since no roads are located in or around this RNA/ACEC, road maintenance is not an issue. The area would be closed to OHV and mechanized vehicle use. The entire RNA/ACEC would be an exclusion area for new ROWs or realty use authorizations.

Due to the implementation of the Steens Act, the RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal.

The RNA/ACEC would be closed to livestock grazing and the collection of plant materials would be allowed by permit only.

Proposed RMP

The existing RNA/ACEC designation and boundaries would be retained. The size of the RNA/ACEC would remain at 1,216 acres. Since the area is almost entirely within the Steens Mountain Wilderness, visual resources would be managed as VRM Class I.

No roads are located in or around this RNA/ACEC, so road maintenance is not an issue. The area would be closed to OHV and mechanized vehicle use. Within the Steens Mountain Wilderness portion of the RNA/ACEC, the area would be an exclusion area for new ROW and realty use authorizations. Within the WSA part of the RNA/ACEC, new ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated.

Due to the implementation of the Steens Act, the RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal.

All but 40 acres of the RNA/ACEC would be open to livestock grazing; however, topography limits access to the site for most livestock. The collection of plant materials would be allowed by permit only.

Alternative E

The RNA/ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would continue to be managed under the provisions of the Wilderness Act and the WSA IMP.

Kiger Mustang ACEC

Alternative A

The existing ACEC designation and boundaries would be retained. The size would remain at 31,725 acres. That part of the ACEC located within the Stonehouse WSA is managed as VRM Class I. The portion of the ACEC outside of the WSA is managed as VRM Class IV.

The roads that run through the ACEC are maintained regularly due to important access considerations. Road maintenance is limited to the existing roadbed. OHV and mechanized vehicle use is limited to designated roads and ways. New ROWs or other realty use authorizations would be avoided on non-WSA parcels unless the activity is compatible with the purpose for which the area was designated. New ROWs or other realty use authorizations would be excluded from the portions of the ACEC located within the WSA unless access is needed to nonpublic property.

Due to the implementation of the Steens Act, the ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal.

The Kiger Mustang ACEC is located within portions of the Burnt Flat, Smyth/Kiger, and Riddle Mountain Grazing Allotments and is open to livestock grazing from April until October. The area is open to the collection of plant materials.

Alternative B

The ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. That portion of the ACEC located within the WSA would continue to be managed under the WSA IMP until Congress makes a decision regarding wilderness designation for the area. The rest of the area would be managed as prescribed for similar adjacent areas.

Alternative C

The ACEC would be retained at 31,725 acres. Visual resources would be managed as VRM Class I in the WSA and VRM Class II outside the WSA. The roads through the ACEC would be maintained as needed for access considerations. Road maintenance would be limited to the existing roadbed. OHV and mechanized vehicle use would be limited to designated routes. The ACEC would be an exclusion area for new ROWs or other realty use authorizations except for access needs to nonpublic property.

The area within the ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Livestock grazing would continue under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection of plant materials would be allowed by permit only.

Proposed RMP

The existing ACEC would be retained at 31,725 acres. Roads through the ACEC would be maintained as needed using only the existing roadbed. OHV and mechanized vehicle use would be limited to designated routes. New ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated. Visual resources in the ACEC would be managed as VRM Class I in the WSA, and VRM Class III outside the WSA.

The area within the ACEC would be withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Livestock grazing would continue under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The area would be open to collection of plant materials.

Alternative E

The ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. That portion of the ACEC located within the WSA would continue to be managed under the WSA IMP until Congress makes a decision regarding wilderness designation for the area. The rest of the area would be managed as prescribed for similar adjacent areas.

Little Blitzen RNA/ACEC

Alternative A

The existing RNA/ACEC designation and boundaries would be retained. The size would remain at 2,530 acres. Since the RNA/ACEC is entirely within the Steens Mountain Wilderness, visual resources are managed as VRM Class I.

The Steens Loop Road runs through the RNA/ACEC and would be maintained regularly for access. That part of the RNA/ACEC away from the road is closed to OHV and mechanized vehicle use. The RNA/ACEC is an exclusion area for new ROWs or other realty use authorizations.

Due to the implementation of the Steens Act, the Little Blitzen RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The RNA/ACEC is located within the No Livestock Grazing Area on Steens Mountain and is closed to grazing. Since the RNA/ACEC was originally designated for protection of unique plant communities, collection of plant materials is allowed by permit only.

Alternative B

The RNA/ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would continue to be managed under the provisions of the Wilderness Act.

Alternative C

The RNA/ACEC would decrease in size because 275 acres would be dropped on the east and south sides of the Steens Loop Road. The size of the RNA/ACEC would become 2,255 acres. Visual resources would be managed as VRM Class I.

The change in the boundary of the RNA/ACEC excludes the Steens Loop Road from the RNA, so road maintenance would not be an issue. The area would be closed to OHV and mechanized vehicle use. The RNA/ACEC is an exclusion area for new ROWs or other realty use authorizations.

Due to the implementation of the Steens Act, the Little Blitzen RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The RNA/ACEC is located within the No Livestock Grazing Area on Steens Mountain and is closed to grazing. Since the RNA/ACEC was originally designated for protection of unique plant communities, collection of plant materials would be allowed by permit only.

Proposed RMP

The RNA/ACEC would be the same as Alternative C. Overnight camping would be allowed in historically used areas that are consistent with the purpose of the RNA and the Wilderness Plan objectives.

Alternative E

The RNA/ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would continue to be managed under the provisions of the Wilderness Act.

Little Wildhorse Lake RNA/ACEC

Proposed RMP and Alternatives A and C

The existing RNA/ACEC designation and boundaries would be retained. The size would remain at 241 acres. Since the RNA/ACEC is entirely within the Steens Mountain Wilderness, visual resources would be managed as VRM Class I.

Since no roads are located in this RNA/ACEC, road maintenance is not an issue. The area would be closed to OHV and mechanized vehicle use. The RNA/ACEC would be an exclusion area for new ROWs or other realty use authorizations.

Due to the implementation of the Steens Act, the Little Wildhorse Lake RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The RNA/ACEC is located within the No Livestock Grazing Area on Steens Mountain and is closed to grazing. Since the RNA/ACEC was originally designated for protection of unique plant communities, collection of plant materials would be allowed by permit only.

Alternative B

The RNA/ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would continue to be managed under the provisions of the Wilderness Act.

Alternative E

The RNA/ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would continue to be managed under the provisions of the Wilderness Act.

Long Draw RNA/ACEC

Alternative A

The existing RNA/ACEC designation and boundaries would be retained. The size would remain at 441 acres. Since the RNA/ACEC is entirely within the Hawk Mountain and Rincon WSAs, the visual resources are managed as VRM Class I.

The road that runs through the RNA/ACEC is maintained regularly due to important access considerations. Road maintenance is limited to the existing roadbed. OHV and mechanized vehicle use is limited to designated roads and ways. New ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated.

The Long Draw RNA/ACEC is open to locatable mineral entry but is subject to the WSA IMP, including the nonimpairment criteria. The area is closed to mineral leasing and salable mineral removal. The RNA/ACEC is located within the Pueblo-Lone Mountain Grazing Allotment and is open to grazing from December to April. Since the RNA/ACEC was originally designated for protection of unique plant communities, collection of plant materials is allowed by permit only.

Alternative B

The RNA/ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would continue to be managed as a WSA under the WSA IMP until Congress makes a decision regarding wilderness designation for the area.

Alternative C

The RNA/ACEC designation and boundaries would be retained. The size would remain at 441 acres. The road through the RNA/ACEC would be maintained as needed in the existing roadbed for access considerations. OHV and mechanized vehicle use would be limited to designated routes. The RNA/ACEC would be an exclusion area for new ROWs or other realty use authorizations except for access needs to nonpublic property. Visual resources would be managed as VRM Class I.

The area within the RNA/ACEC would be withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Livestock grazing would continue under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection of plant materials would be allowed by permit only.

Proposed RMP

The RNA/ACEC designation and boundaries would be retained. The size would remain at 441 acres. The road through the RNA/ACEC would be maintained as needed in the existing roadbed for access considerations. OHV and mechanized vehicle use would be limited to designated routes. In the RNA/ACEC, new ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated. Visual resources would be managed as VRM Class I.

The RNA/ACEC is a no lease area for leasable minerals and is closed to salable mineral removal. The area is open to locatable mineral entry subject to the WSA IMP, including the nonimpairment criteria. Livestock grazing would continue under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection of plant materials would be allowed by permit only.

Alternative E

The RNA/ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would continue to be managed as a WSA under the WSA IMP until Congress makes a decision regarding wilderness designation for the area.

Mickey Basin RNA/ACEC

Alternative A

The existing RNA/ACEC designation and boundaries would be retained. The size would remain at 560 acres. Since the RNA/ACEC is entirely within the East Alvord WSA, the visual resources are managed as VRM Class I.

The road that runs through the RNA/ACEC is maintained regularly due to important access considerations. Road maintenance is limited to the existing roadbed. OHV and mechanized vehicle use is limited to designated roads and ways. New ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated.

Due to the implementation of the Steens Act, the Mickey Basin RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal.

A fenced exclosure protects most of the relevant and important values from grazing by wild horses and livestock, but grazing has not been officially excluded. The exclosure, however, does not encompass the entire RNA/ACEC. That portion of the RNA/ACEC outside the exclosure is within the Alvord Grazing Allotment and is open to grazing from December to April. Since the RNA/ACEC was originally designated for protection of unique plant communities, collection of plant materials is allowed by permit only.

Alternative B

The ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would continue to be managed as a WSA under the WSA IMP until Congress makes a decision regarding wilderness designation for the area.

Alternative C

The RNA/ACEC designation and boundaries would be retained. The size would remain at 560 acres. The road through the RNA/ACEC would be maintained as needed in the existing roadbed for access considerations. OHV and mechanized vehicle use would be limited to designated routes. The RNA/ACEC would be an exclusion area for new ROWs or other realty use authorizations except for access needs to nonpublic property. Visual resources would be managed as VRM Class I.

The area within the RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Livestock grazing would be closed within the fenced exclosure. Grazing would continue outside the exclosure fence under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection of plant materials would be allowed by permit only.

Proposed RMP

The RNA/ACEC would be the same as Alternative C except that new ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated.

Alternative E

The ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would continue to be managed as a WSA under the WSA IMP until Congress makes a decision regarding wilderness designation for the area.

Pickett Rim ACEC

Alternative A

The existing ACEC designation and boundaries would be retained. The size would remain at 3,941 acres. The area would continue to be managed as VRM Class II. The roads within the ACEC are maintained as needed for access. OHV and mechanized vehicle use is limited to designated roads. The area would continue to be open to new ROWs or other realty use authorizations.

The area within the Pickett Rim ACEC is open to leasable and locatable mineral entry and salable mineral removal. The ACEC is located within the LaVoy Tables Grazing Allotment and is open to grazing from April until November. The ACEC is open for collection or removal of plant materials.

Alternative B

The ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. Management of the Pickett Rim area would be the same as prescribed for the adjacent area.

Alternative C

The existing ACEC designation and boundaries would be retained. The size of the ACEC would be 3,941 acres and it would be managed as VRM Class II. The roads in the ACEC would be maintained as needed for access. OHV and mechanized vehicle use would be limited to designated routes. The area would be an exclusion area for new ROWs or other realty use authorizations except for access needs to nonpublic property.

The area within the ACEC would be withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Livestock grazing would continue under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for potential effects and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection of plant materials would be allowed by permit only.

Proposed RMP

The ACEC designation would be revoked due to low occupancy by nesting raptors when compared with other nearby habitats. Relevant and important values are not present to qualify the area as an ACEC. Management of the Pickett Rim area would be the same as prescribed for the adjacent area.

Alternative E

The ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. Management of the Pickett Rim area would be the same as prescribed for the adjacent area.

Pueblo Foothills RNA/ACEC

Alternative A

The existing RNA/ACEC designation and boundaries would be retained. The size would remain at 2,503 acres. Since the RNA/ACEC is entirely within the Pueblo Mountain WSA, the visual resources are managed as VRM Class I.

The road that runs through a small corner of the RNA/ACEC is maintained regularly due to important access considerations. Road maintenance is limited to the existing roadbed. OHV and mechanized vehicle use is limited to designated roads and ways. New ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated.

The Pueblo Foothills RNA/ACEC is open to locatable mineral entry, subject to the WSA IMP, but closed to mineral leasing and salable mineral removal. The RNA/ACEC is located within the Pueblo-Lone Mountain Grazing Allotment and is open to grazing from April until July. Since the RNA/ACEC was originally designated for protection of unique plant communities, collection of plant materials is allowed by permit only.

Alternative B

The ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would continue to be managed as a WSA under the WSA IMP until Congress makes a decision regarding wilderness designation for the area.

Alternative C

The existing RNA/ACEC designation would be retained except for 79 acres that would be deleted from the southeast corner. The area to be deleted is in early seral ecological status and does not contain the relevant and important values. The size of the RNA/ACEC would be changed to 2,424 acres. The road through the RNA/ACEC would be maintained as needed in the existing roadbed for access considerations. OHV and mechanized vehicle use would be limited to designated routes. The RNA/ACEC would be an exclusion area for new ROWs or other realty use authorizations except for access needs to nonpublic property. Visual resources would be managed as VRM Class I.

The area within the RNA/ACEC would be withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Livestock grazing would continue under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection of plant materials would be allowed by permit only.

Proposed RMP

The existing RNA/ACEC designation would be retained except for 79 acres that would be deleted from the southeast corner. The area to be deleted is in early seral ecological status and does not contain the relevant and important values. The size of the RNA/ACEC would be changed to 2,424 acres. The road through the RNA/ACEC would be maintained as needed in the existing roadbed for access considerations. OHV and mechanized vehicle use would be limited to designated routes. In the RNA/ACEC, new ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated. Visual resources would be managed as VRM Class I.

The RNA/ACEC is a no lease area for leasable minerals and is closed to salable mineral removal. The area is open to locatable mineral entry subject to the WSA IMP, including the nonimpairment criteria. Livestock grazing would continue under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in

grazing use or new range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection of plant materials would be allowed by permit only.

Alternative E

The ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would continue to be managed as a WSA under the WSA IMP until Congress makes a decision regarding wilderness designation for the area.

Rooster Comb RNA/ACEC

Alternative A

The existing RNA/ACEC designation and boundaries would be retained. The size would remain at 716 acres. Since the RNA/ACEC is entirely within the Steens Mountain Wilderness, visual resources would be managed as VRM Class I.

The Steens Loop Road runs through the RNA/ACEC and is maintained regularly for access. That part of the ACEC away from the road is closed to OHV and mechanized vehicle use. The RNA/ACEC is an exclusion area for new ROWs or other realty use authorizations.

Due to the implementation of the Steens Act, the Rooster Comb RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The RNA/ACEC is located within the No Livestock Grazing Area on Steens Mountain and is closed to grazing. Since the RNA/ACEC was originally designated for protection of unique plant communities, collection of plant materials is allowed by permit only.

Alternative B

The ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would continue to be managed under the provisions of the Wilderness Act.

Alternative C

The existing RNA/ACEC designation would be retained. Thirty-three acres would be dropped on the south side of the Steens Loop Road. The size of the RNA/ACEC would be 683 acres. Since the RNA/ACEC is entirely within the Steens Mountain Wilderness, visual resources would be managed as VRM Class I. Since no roads are located in this RNA/ACEC, road maintenance is not an issue. The area would be closed to OHV and mechanized vehicle use. The RNA/ACEC would be an exclusion area for new ROWs or other realty use authorizations.

Due to the implementation of the Steens Act, the Rooster Comb RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The RNA/ACEC is located within the No Livestock Grazing Area on Steens Mountain and is closed to grazing. Since the RNA/ACEC was originally designated for protection of unique plant communities, collection of plant materials would be allowed by permit only.

Proposed RMP

The existing RNA/ACEC designation would be retained. Thirty-three acres would be dropped on the south side of the Steens Loop Road. The size of the RNA/ACEC would be 683 acres. Since the RNA/ACEC is entirely within the Steens Mountain Wilderness, visual resources would be managed as VRM Class I. Since no roads are located in this RNA/ACEC, road maintenance is not an issue. The area would be closed to OHV and mechanized vehicle use. The RNA/ACEC would be an exclusion area for new ROWs or other realty use authorizations.

Due to the implementation of the Steens Act, the Rooster Comb RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The RNA/ACEC is located within the No Livestock Grazing Area on Steens Mountain and is closed to grazing. Since the RNA/ACEC was originally designated for protection of unique plant communities, collection of plant materials would be allowed by permit only. Overnight camping would be allowed in historically used areas that are consistent with the purpose of the RNA and the Wilderness Plan objectives.

Alternative E

The ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would continue to be managed under the provisions of the Wilderness Act.

South Fork Willow Creek RNA/ACEC

Alternative A

The existing RNA/ACEC designation and boundaries would be retained. The size would remain at 231 acres. Since the RNA/ACEC is entirely within the Steens Mountain Wilderness, visual resources are managed as VRM Class I.

The East Rim Viewpoint parking area is located within a small portion of the RNA/ACEC and is maintained regularly. The area is closed to OHV and mechanized vehicle use outside the existing parking area. The RNA/ACEC is an exclusion area for new ROWs or other realty use authorizations.

Due to the implementation of the Steens Act, the South Fork Willow Creek RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The RNA/ACEC is located within the No Livestock Grazing Area on Steens Mountain and is closed to grazing. Since the RNA/ACEC was originally designated for protection of unique plant communities, collection of plant materials is allowed by permit only.

Alternative B

The ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would continue to be managed under the provisions of the Wilderness Act.

Proposed RMP and Alternative C

The existing RNA/ACEC designation would be retained; however, 45 acres would be dropped where the East Rim Viewpoint is located. The size of the RNA/ACEC would be 186 acres. Since the RNA/ACEC is entirely within the Steens Mountain Wilderness, visual resources would be managed as VRM Class I.

Since no roads are located in this RNA/ACEC, road maintenance is not an issue. The area would be closed to OHV and mechanized vehicle use. The RNA/ACEC would be an exclusion area for new ROWs or other realty use authorizations.

Due to the implementation of the Steens Act, the South Fork Willow Creek RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The RNA/ACEC is located within the No Livestock Grazing Area on Steens Mountain and is closed to grazing. Since the RNA/ACEC was originally designated for protection of unique plant communities, collection of plant materials would be allowed by permit only.

Alternative E

The ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would continue to be managed under the provisions of the Wilderness Act.

Steens Mountain ACEC

Alternative A

The existing ACEC designation and boundaries would be retained. The size would remain at 57,501 acres. The ACEC is contained within a large part of the Steens Mountain Wilderness as well as some areas of WSA and non-WSA. Visual resources are managed as VRM Class I in the Wilderness Area and WSAs and as VRM Class II in the rest of the ACEC.

The roads through the ACEC have been closed to OHV and mechanized vehicle use in the Steens Mountain Wilderness. Outside the wilderness, OHV and mechanized vehicle use is limited to designated roads and ways. Road maintenance

is not an issue in the Steens Mountain Wilderness, but is limited to the existing roadbed in the other areas. New ROWs and other realty use authorizations are excluded in the Steens Mountain Wilderness except for access needs to nonpublic property. In the WSAs, realty actions are avoided unless the activity is compatible with the purpose for which the area was designated. Realty actions are allowed in the remainder of the ACEC.

Due to the implementation of the Steens Act, the Steens Mountain ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Some of the ACEC is located within portions of the Alvord, Mann Lake, East Ridge, Chimney and Serrano Point Grazing Allotments and is open to grazing in those areas from April until November. Most of the ACEC is located within a large area legislated as a No Livestock Grazing Area. Livestock grazing is prohibited in that area. The collection or removal of plant materials is allowed by permit only.

Alternative B

The ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would continue to be managed as wilderness, WSA, or as prescribed for the particular areas.

Alternative C

The existing ACEC designation and boundaries would be retained. The size would remain at 57,501 acres. The ACEC is contained within a large part of the Steens Mountain Wilderness as well as some areas of WSA and non-WSA. Visual resources would be managed as VRM Class I in the entire ACEC.

The roads through the ACEC have been closed to OHV and mechanized vehicle use in the Steens Mountain Wilderness. Outside the wilderness, OHV and mechanized vehicle use would be limited to designated roads and ways. Road maintenance is not an issue in the Steens Mountain Wilderness, but would be limited to the existing roadbed in the other areas. New ROWs and other realty use authorizations would be excluded from the entire ACEC except for access needs to nonpublic property.

Due to the implementation of the Steens Act, the Steens Mountain ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Livestock grazing would continue in the areas open to grazing under management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing would be evaluated for potential effects on the relevant and important values and would be permitted if the values would be maintained or promoted. Proposed range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. Most of the ACEC is located within a large area legislated as the No Livestock Grazing Area. Livestock grazing is prohibited in that area. The collection or removal of plant materials would be allowed by permit only.

Proposed RMP

The ACEC designation would be revoked due to overlapping wilderness or IMP management which eliminates any need for an ACEC designation. The area would continue to be managed as wilderness, WSA, or as prescribed for the particular areas.

Alternative E

The ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would continue to be managed as wilderness, WSA, or as prescribed for the particular areas.

Tum Tum Lake RNA/ACEC

Alternative A

The existing RNA/ACEC designation and boundaries would be retained. The size would remain at 2,064 acres. The RNA/ACEC is not located within any WSA; therefore, visual resources are managed as VRM Class III as determined in the original inventory.

The roads through the RNA/ACEC are not important for access to other areas. If maintenance is needed, any disturbance is limited to the existing roadbed. OHV and mechanized vehicle use is limited to designated roads. The area is open to new ROWs or other realty use authorizations.

The Tum Tum Lake RNA/ACEC is open to locatable and leasable mineral entry and open to salable mineral removal. The area is located within the Pueblo-Lone Mountain Grazing Allotment and is open to grazing from April through July. Since the RNA/ACEC was originally designated for protection of unique plant communities, collection of plant materials is allowed by permit only.

Alternative B

The ACEC designation would be revoked. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would be managed as prescribed for the adjacent area.

Alternative C

The RNA/ACEC designation would be retained and 375 acres dropped due to unmanageability and surface disturbance. The size of the RNA/ACEC would be 1,689 acres. The roads in the RNA/ACEC would be maintained as needed for access considerations. OHV and mechanized vehicle use would be limited to designated routes. The RNA/ACEC would be an exclusion area for new ROWs or other realty use authorizations except for access needs to nonpublic property. Visual resources would be managed as VRM Class II.

The area within the RNA/ACEC would be withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The area would be closed to livestock grazing. Collection of plant materials would be allowed by permit only.

Proposed RMP

The RNA/ACEC designation would be retained and 375 acres dropped due to unmanageability and surface disturbance. The size of the RNA/ACEC would be 1,689 acres. The roads through the RNA/ACEC would be maintained as needed in the existing roadbed for access considerations. OHV and mechanized vehicle use would be limited to designated routes. New ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated. Visual resources would be managed as VRM Class II.

The area within the RNA/ACEC would be open to leasable and locatable mineral entry and closed to salable mineral removal. The area would be closed to livestock grazing. Collection of plant materials would be allowed by permit only.

Alternative E

The ACEC designation would be revoked. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would be managed as prescribed for the adjacent area.

Objective 2. Designate and manage new ACECs that meet relevance and importance criteria and need special management or protection.

Proposed Big Alvord Creek RNA/ACEC

Alternative A

Since no RNA/ACEC would be designated, existing prescriptions would apply. The site is in the Steens Mountain Wilderness, so the visual resources would be managed as VRM Class I. There are no roads in this RNA/ACEC, and the entire area is closed to OHV and mechanized vehicle use. The area is an exclusion area for new ROWs or other realty use authorizations.

The area is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The area is located within the legislated Steens Mountain No Livestock Grazing Area and therefore closed to grazing. Since the area is within the Steens Mountain ACEC, collection of plant materials would be allowed by permit only.

Alternative B

No RNA/ACEC would be designated. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would continue to be managed as wilderness under the provisions of the Wilderness Act.

Proposed RMP and Alternative C

The proposed RNA/ACEC would be designated as the Big Alvord Creek RNA/ACEC covering 1,676 acres. The area would be closed to OHV and mechanized vehicle use. The area would be an exclusion area for ROWs or other realty use authorizations. Visual resources would be managed as VRM Class I.

The area within the RNA/ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The area is closed to livestock grazing and the collection of plant materials would be allowed by permit only.

Alternative E

No RNA/ACEC would be designated. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would continue to be managed as wilderness under the provisions of the Wilderness Act.

Proposed Catlow Redband Trout ACEC

Alternative A

Since no ACEC would be designated, existing prescriptions would apply. The site is currently managed as VRM Classes I and III. The roads in the area are maintained as needed for access. The area is closed to OHV and mechanized vehicle use in the Steens Mountain Wilderness and limited to existing roads in other areas. The area is an exclusion area for new ROWs or other realty use authorizations within the Steens Mountain Wilderness unless access is needed to nonpublic property. Outside the Steens Mountain Wilderness, the area is open to new ROWs or other realty use authorizations.

The area is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The area is located within the South Steens and Roaring Springs Federal Fenced Range (FFR) Grazing Allotments and is grazed from April through November. The area is open to collection of plant materials.

Alternative B

No ACEC would be designated. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. Most of the area would continue to be managed under the provisions of the Wilderness Act. A small part of the area is outside the wilderness and would be managed the same as other sites within the CMPA that have no specific designation.

Alternative C

The proposed ACEC would be designated as the Catlow Redband Trout ACEC covering 6,800 acres. Roads that are present in the ACEC would be maintained as needed for access. OHV and mechanized vehicle use in the ACEC would be limited to designated routes. ROWs or other realty use authorizations would be excluded unless access is needed to nonpublic property. Visual resources would be managed as VRM Class I in the Steens Mountain Wilderness and VRM Class II in the rest of the ACEC.

The area within the ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Livestock grazing would continue under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection of plant materials would be allowed by permit only.

Proposed RMP

No ACEC would be designated. Most of the area would continue to be managed under the provisions of the Wilderness Act. A small part of the area is outside the wilderness and would be managed the same as other sites within the CMPA that have no specific designation.

Alternative E

No ACEC would be designated. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. Most of the area would continue to be managed under the provisions of the Wilderness Act. A small part of the area is outside the wilderness and would be managed the same as other sites within the CMPA that have no specific designation.

Proposed East Fork Trout Creek RNA/ACEC

Alternative A

Since no RNA/ACEC would be designated, existing prescriptions would apply. The site is in the Mahogany Ridge WSA, so the visual resources would be managed as VRM Class I. The dead end road that runs into the area is maintained due to important access considerations. Road maintenance is limited to the existing roadbed. OHV and mechanized vehicle use is limited to designated roads and ways. The area is open to new ROWs or other realty use authorizations.

The area is open to locatable and leasable mineral entry and salable mineral removal. The area is located within the Trout Creek Mountain Grazing Allotment and is open to grazing for five days in September. The area is open to collection of plant materials.

Alternative B

No RNA/ACEC would be designated. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would be managed as a WSA under the WSA IMP until Congress makes a decision regarding wilderness designation for the area.

Alternative C

The proposed RNA/ACEC would be designated as the East Fork Trout Creek RNA/ACEC covering 361 acres. The road through the RNA/ACEC would be maintained as needed in the existing roadbed for access considerations. OHV and mechanized vehicle use would be limited to designated routes. The RNA/ACEC would be an exclusion area for new ROWs or other realty use authorizations except for access needs to nonpublic property. Visual resources would be managed as VRM Class I.

The area within the RNA/ACEC would be withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The area would be closed to livestock grazing. Collection of plant materials would be allowed by permit only.

Proposed RMP

The proposed RNA/ACEC would be designated as the East Fork Trout Creek RNA/ACEC covering 361 acres. The road through the RNA/ACEC would be maintained as needed in the existing roadbed for access considerations. OHV and mechanized vehicle use would be limited to designated routes. New ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated. Visual resources would be managed as VRM Class I.

The RNA/ACEC is a no lease area for leasable minerals and is closed to salable mineral removal. The area is open to locatable mineral entry subject to the WSA IMP, including the nonimpairment criteria. Livestock grazing would continue under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection of plant materials would be allowed by permit only.

Alternative E

No RNA/ACEC would be designated. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would be managed as a WSA under the WSA IMP until Congress makes a decision regarding wilderness designation for the area.

Proposed Fir Groves ACEC

Alternative A

Since no ACEC would be designated, existing prescriptions would apply. The site is managed as VRM Class II. The roads in the area are maintained in the existing roadbeds needed for access. The area is limited seasonally to OHV and mechanized vehicle use. Off-road vehicle travel is prohibited. The area is open for new ROWs or other realty use authorizations within the provisions of the Steens Act.

The area is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The area is located within the Hardie Summer and Hammond FFR Allotments and is grazed periodically during the spring and summer. The area is open to collection of plant materials.

Alternative B

No ACEC would be designated. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would continue to be managed the same as prescribed for adjacent areas.

Alternative C

The proposed ACEC would be designated as the Fir Groves ACEC covering 477 acres. OHV and mechanized vehicle use in the ACEC would be limited to designated routes. ROWs or other realty use authorizations would be excluded unless access is needed to nonpublic property. Visual resources would be managed as VRM Class II.

The area within the ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The area would be closed to livestock grazing. Collection of plant materials would be allowed by permit only.

The dense stand of trees along Little Fir Creek would be mechanically thinned to protect the site from catastrophic fire incidents and to allow for development of understory vegetation.

Proposed RMP

The proposed ACEC would be designated as the Fir Groves ACEC covering 477 acres. OHV and mechanized vehicle use in the ACEC would be limited to designated routes. New ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated. Visual resources would be managed as VRM Class II.

The area within the ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Livestock grazing would continue under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection of plant materials would be allowed by permit only.

The dense stand of trees along Little Fir Creek would be mechanically thinned to protect the site from catastrophic fire incidents and to allow for development of understory vegetation.

Alternative E

No ACEC would be designated. Under this alternative, eliminating the designation would provide for the opportunity to maximize commodity production. The area would continue to be managed the same as prescribed for adjacent areas.

Proposed Mickey Hot Springs RNA/ACEC

Alternative A

Since no ACEC would be designated, existing prescriptions would apply. A portion of the site is in the East Alvord WSA, so visual resources are managed as VRM Class I in that area. The non-WSA portion of the proposal is managed as VRM Class II. OHV and mechanized vehicle use is limited to designated roads. The area is open to new ROWs or other realty use authorizations.

Due to the implementation of the Steens Act, the ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The area is located within the Alvord Grazing Allotment but is fenced to keep livestock out of the hot springs. The area is open to collection of plant materials.

Alternatives B and C

The proposed Mickey Hot Springs ACEC would be designated. The size of the ACEC would be 42 acres, or all of the land within the fenced exclosure. The road and parking area within the ACEC would be closed. The area would also be closed to OHV and mechanized vehicle use. The ACEC would be an exclusion area for new ROWs or other realty use authorizations. Visual resources would be managed as VRM Class I in the WSA and VRM Class II outside the WSA.

Due to the implementation of the Steens Act, the ACEC is withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The fenced ACEC would be closed to livestock grazing and open to collection of plant materials.

Proposed RMP and Alternative E

The ACEC would be the same as Alternatives B and C except that new ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated.

Proposed Serrano Point RNA/ACEC

Alternative A

Since no RNA/ACEC would be designated, the existing prescriptions would apply. The site would continue to be managed as VRM Class II. The road that runs through the area is maintained due to important access considerations. Road maintenance is limited to the existing roadbed. The area is open to OHV and mechanized vehicle use and new ROWs or other realty use authorizations.

The area is open to locatable and leasable mineral entry and salable mineral removal. The area is located within the Tule Springs Grazing Allotment and is open to grazing from December until March. The area is open to collection of plant materials.

Alternative B

No RNA/ACEC would be designated. Under this alternative, the entire Planning Area would be managed to maximize natural processes; therefore, the additional designation would not be necessary. The area would be managed the same as prescribed for adjacent areas.

Alternative C

The proposed RNA/ACEC would be designated as the Serrano Point RNA/ACEC covering 679 acres. The road through the RNA/ACEC would be maintained as needed in the existing roadbed for access considerations. OHV and mechanized vehicle use would be limited to designated routes. The RNA/ACEC would be an exclusion area for new ROWs or other realty use authorizations except for access needs to nonpublic property. Visual resources would be managed as VRM Class II.

The area within the RNA/ACEC would be withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. The area would be closed to livestock grazing. Collection of plant materials would be allowed by permit only.

Proposed RMP

The proposed RNA/ACEC would be designated as the Serrano Point RNA/ACEC covering 679 acres. The road through the RNA/ACEC would be maintained as needed in the existing roadbed for access considerations. OHV and mechanized vehicle use would be limited to designated routes. New ROWs or other realty use authorizations would be avoided unless the activity is compatible with the purpose for which the area was designated. Visual resources would be managed as VRM Class II.

The area within the RNA/ACEC would be withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. Livestock grazing would continue under the management of the existing permit stipulations and approved grazing systems. Any proposed changes in grazing use or new range improvement projects would be evaluated for potential effects, and permitted if relevant and important values would be maintained or promoted. Where adverse effects are identified, livestock use or range improvement projects would be adjusted. The collection of plant materials would be allowed by permit only.

2.21.2 Monitoring

See Appendix Q.

2.22 Wilderness

2.22.1 Management Framework

The Steens Act established the Steens Mountain Wilderness consisting of 170,084 acres of public land (Map 2.20.1). A No Livestock Grazing Area consisting of 97,229 acres of public land, 94,959 acres of which are located within the Steens Mountain Wilderness, created the first Congressionally designated cattle-free wilderness. The Steens Mountain Wilderness is managed according to the provisions of the Wilderness Act of 1964, as amended; the FLPMA; BLM Manuals 8560/H-8560-1 (Management of Designated Wilderness Areas), and 8561 (Wilderness Management Plans); the BLM's Wilderness Management Regulations at 43 CFR 6300; and the specific directives contained within the Steens Act. The specific provisions are specified in Section 202 of the Act and include the following:

> (a) GENERAL RULE. - The Secretary shall administer the Steens Mountain Wilderness in accordance with this title and the Wilderness Act (16 U.S.C. 1131 et seq.). Any reference in the Wilderness Act to the effective date of that Act (or any similar reference) shall be deemed to be a reference to the date of the enactment of this Act.
>
> (b) WILDERNESS BOUNDARIES ALONG ROADS. - Where a wilderness boundary exists along a road, the wilderness boundary shall be set back from the centerline of the road, consistent with the BLM's guidelines as established in its Wilderness Management Policy.
>
> (c) ACCESS TO NON-FEDERAL LANDS. – The Secretary shall provide reasonable access to private lands within the boundaries of the Wilderness Area, as provided in section 112(d).
>
> (d) GRAZING. -
>
> > (1) Administration. - Except as provided in section 113(c)(2), grazing of livestock shall be administered in accordance with the provision of section 4(d)(4) of the Wilderness Act (16 U.S.C. 1133(d)(4)), in accordance with the provisions of this Act, and in accordance with the guidelines set forth in Appendices A and B of House Report 101-405 of the 101st Congress.

Section 112(e)(1) of the Steens Act states, "The Secretary shall provide reasonable access to non-federally owned lands or interests in land within the boundaries of the Cooperative Management and Protection Area and the Wilderness Area to provide the owner of the land or interest the reasonable use thereof."

Wilderness boundary setbacks along existing roads are as follows:

Distance from Centerline	Type of Road
300 feet	- High standard roads such as paved highways
100 feet	- High standard logging roads
30 feet	- Jeep roads, low standard logging roads, dirt roads used for ROW maintenance, etc.

(BLM Manual Handbook H-8560-1). Specific boundary setbacks are described in Section 3.22.1.

Except for the designated No Livestock Grazing Area (97,229 acres of public land, 94,959 acres of which are in the Steens Mountain Wilderness), grazing of livestock will continue and will be administered in accordance with the provision of section 4(d)(4) of the Wilderness Act, in accordance with the provisions of the Steens Act, and in accordance with the guidelines set forth in Appendix A of House Report 101-405 of the 101st Congress.

The Wilderness Act (Section 4(d)(6)) states, "Commercial services may be performed within the wilderness areas designated by this Act to the extent necessary for activities that are proper for realizing the recreational or other wilderness purposes of the areas."

Section 115(b) of the Steens Act states, "The Secretary may renew a special recreation use permit applicable to lands included in the Wilderness Area to the extent that the Secretary determines that the permit is consistent with the Wilderness Act (16 USC 1131 et seq.). If renewal is not consistent with the Wilderness Act, the Secretary shall seek other opportunities for the permit holder through modification of the permit to realize historic permit use to the extent that the use is consistent with the Wilderness Act and this Act, as determined by the Secretary."

Any proposed administrative actions, projects, or activities occurring in the Steens Mountain Wilderness, except for emergencies, would be decided following the use of the MRDG and project level NEPA analysis on a site specific basis in compliance with management plan objectives and direction. In this case, emergencies are defined as actions involving the health and safety of persons, law enforcement efforts involving serious crime or fugitive pursuit, retrieval of a deceased individual, or certain wildland fire suppression activities.

Except as specifically stated in the Wilderness Act, the following activities are currently prohibited in wilderness at 43 CFR 6302.20:

- Operate a commercial enterprise.
- Build temporary or permanent roads.
- Build aircraft landing strips, heliports, or helispots.
- Use motorized equipment or motor vehicles, motorboats, or other forms of mechanical transport.
- Land aircraft, or drop or pick up any material, supplies or person by means of aircraft, including a helicopter, hangglider, hot air balloon, parasail, or parachute.
- Build, install, or erect structures or installations, including transmission lines, motels, vacation homes, sheds, stores, resorts, organization camps, hunting and fishing lodges, electronic installations, and similar structures, other than tents, tarpaulins, temporary corrals, and similar devices for overnight camping.
- Cut trees.
- Enter or use wilderness areas without authorization, where the BLM requires authorization.
- Engage or participate in competitive use, including those activities involving physical endurance of a person or animal, foot races, watercraft races, survival exercises, war games, or other similar exercises.
- Violate any BLM regulation, authorization, or order.

2.22.2 Wilderness Management

Wilderness can mean many different things to a variety of people. There are two main concepts: one is the sociological idea that wilderness is a place where one can experience a recreational or social activity in a natural environment free from development. For a person from an urban environment with little experience in the natural environment, wilderness could be virtually any forested area that is relatively undeveloped. Second, legal wilderness is defined by the Wilderness Act of 1964; "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain".

As part of management of the Steens Mountain Wilderness, the BLM would implement the provisions of the Leave No Trace principles. There are seven principles: Plan Ahead and Prepare; Travel and Camp on Durable Surfaces; Dispose of Waste Properly; Leave What You Find; Minimize Campfire Impacts; Respect Wildlife; and Be Considerate to Other Visitors. The management of the wilderness would also integrate the appropriate provisions of the BLM's FMP.

The management of the Steens Mountain Wilderness would consider the level of use or use capacity of the area under management. This would be done through the use of indicators to assess the health or condition of the wilderness, rather than the establishment of a specific level of use. As outlined below, certain indicators would be monitored on a regular basis and the monitoring results would be used to adjust the type or level of management.

Two Management Areas defined for the Steens Mountain Wilderness are the Gorges Management Area and the Uplands Management Area. The boundaries of these two Management Areas are generally defined by the patterns and types of historic use and the physiography of the wilderness area. Within the Gorges Management Area are five separate canyons: Little Blitzen, Big Indian, Little Indian, Wildhorse, and Kiger. Management actions can be initiated in each of the canyons separately to accommodate the individual management situation of each canyon.

2.22.2.1 Gorges Management Area

This portion of the Steens Mountain Wilderness is adjacent to primary access and popular destination points. Both overnight and day use occur. Encounters with other users are moderate to frequent, due to the popularity of the gorges. Areas are monitored to protect natural conditions while providing for use and enjoyment of the recreational and natural features.

2.22.2.1.1 Desired Conditions - Natural Environment

Natural succession occurs in all existing vegetative communities and is influenced by natural processes and disturbances. The structure, composition and function, and spatial distribution of vegetation types are influenced and sustained by natural processes. Human influence on vegetation is minimal, except where prescribed fire or other treatments are needed to protect or restore wilderness resources. Plant species are predominately native and indigenous to the immediate area. There are no increases in nonindigenous species composition from the present baseline. Fire is reestablished as a natural ecological force. Fire management activities are designed to retain the natural characteristics of the ecosystem. Evidence of the effects of fire, insects, or disease may be present. Appropriate air quality standards are met; however, periodic smoke could occur from fire. Visibility is generally unimpaired.

Human influence on the composition, structure and function of aquatic ecosystems is minimal in most areas, except where restoration is determined necessary to restore or facilitate natural processes. Fish and wildlife habitat management activities emphasize the protection of natural processes. A range of habitats is sustained for all naturally occurring species. Special status species abundance and distribution is maintained or increased. Human influence on physical features such as soils and geologic materials are minimal.

2.22.2.1.2 Desired Conditions - Human Environment

This portion of the Steens Mountain Wilderness is adjacent to primary access and popular destination points. The opportunity exists for a moderate level of risk and challenge. Contact with other users, recreational stock, or agency personnel is frequent. Encounters with large and small groups are more likely. Day use opportunities are more common within this Management Area. Campsites are dispersed and may be visible or audible from adjacent campsites. Signing to indicate trail routes is not currently planned, but may occur in the future at trail intersections and other areas as needed. Boundary signs, trailhead signs, trail junction signs, and other information are provided to educate and inform wilderness users. Signs are on unstained wood with incised letters and mounted on unstained posts.

Except for commercial or organized group permits, permits for day use activities are not currently planned. Effects from camping meet Natural Environment desired condition (see above). Permitted outfitters provide services to visitors for activities that meet identified public needs and that cannot be provided in nonwilderness settings. Permits for historic uses consistent with the Wilderness Act as recognized by the Steens Act may continue. Recreational stock grazing adheres to appropriate standards and guidelines. Structures and facilities may be allowed for resource protection and administration of the area, however they are allowed only when they are the minimum necessary to protect the wilderness resource and for the health and safety of persons within the area. No facilities or improvements within the Steens

Mountain Wilderness are provided for the comfort and convenience of the visitor. Evidence of historic and cultural sites may exist, but is not interpreted or signed within the Steens Mountain Wilderness.

2.22.2.2 Uplands Management Area

This area of the wilderness features natural environmental conditions and offers a moderate to high degree of solitude. Natural processes and conditions have not been and would not be affected by human activity (use). Areas are monitored to protect ecological conditions with effects of human activities minimized.

2.22.2.2.1 Desired Conditions - Natural Environment

Natural succession occurs in all existing vegetative communities and is influenced by natural processes and disturbances. The structure, composition and function, and spatial distribution of vegetative types are the result of natural successional processes. Human influence on vegetation is minimal, except where prescribed fire or other treatments are needed to restore or protect wilderness resources. Plant species are predominately native and indigenous to the immediate area. There are no increases in nonindigenous species composition from an established baseline. Fire is reestablished as a natural ecological force. Fire management activities are designed to restore or retain the natural characteristics of the ecosystem. Evidence of the effects of fire, insects, or disease may be present. Appropriate air quality standards are met; however, periodic smoke could occur from fire. Visibility is generally unimpaired.

Human influence on the composition, structure, and function of aquatic ecosystems is unnoticeable in most areas, except where restoration is determined necessary to facilitate natural processes. Fish and wildlife habitat management activities emphasize the protection of natural processes. A range of habitats is sustained for all naturally occurring species. Special status species abundance and distribution is maintained or increased. Human influence on physical features such as soils and geologic materials is unnoticeable in most areas.

2.22.2.2.2 Desired Conditions - Human Environment

The opportunity exists for a moderate to high level of risk and challenge. Contact with individuals or groups occurs more frequently on trails than while traveling cross-country. Encounters with large groups occur less often than with small groups or individuals. Domestic livestock and recreational stock may also be encountered. Campsites are dispersed; visitors at adjacent campsites are usually not be seen or heard. Existing campsites are evident, as are maintained and user-established trails.

Effects from camping are minimally noticeable. Permitted outfitters provide services to visitors for activities that meet identified public needs and that cannot be provided in nonwilderness settings. Permits for historic uses consistent with the Wilderness Act as recognized in the Steens Act may continue. Signing to indicate trail routes is not currently planned, but may occur at trail intersections and elsewhere as needed. Management information and administrative signing occurs at trailheads as appropriate for resource protection. Signs blend in with the natural setting. Livestock and recreational stock grazing adheres to appropriate standards and guidelines. Evidence of historic and cultural sites may exist, but is not interpreted or signed within the Steens Mountain Wilderness.

2.22.2.3 Baseline Condition Assessment and Wilderness Condition Monitoring

Specific monitoring would be conducted on an annual basis commencing in 2003 and continuing for two years (through 2004) to assess the baseline condition within the wilderness area. After the baseline condition is determined, the annual monitoring would be used to assess the condition of the wilderness to determine the need for implementation of management options. The following are the seven categories of monitoring and data to be collected that would be used to assess the baseline condition and the ongoing wilderness condition.

- Campsite Condition - campsite changes.
- Campsite Density - number of campsites in a given area.
- Perception of Solitude - trail register information, including length-of-stay, location of use, party size and makeup, and Wilderness Ranger interviews including location of use encounters.
- Trail Condition - changes in trails, including width, depth, and number of social trails.
- Length-of-Stay - trail register and Wilderness Ranger interviews on the length-of-stay.
- Recreational Stock Use - root exposure, manure in campsites, and tree girdling.

- Unauthorized Motor Vehicle and Mechanical Transport Intrusions - motor vehicle and mechanical transport intrusions into the wilderness on closed roads or off of roads other than for permitted use or emergencies.

2.22.2.4 Management Options

This section describes the management options that are planned for use in helping to maintain or achieve the desired conditions in each Management Area. Management options are techniques, regulations, or responses that can be implemented to affect wilderness conditions on the ground. Management options are categorized into three levels as follows: Level I management options are generally information and educational measures that can be implemented initially. Level II management options are generally indirect methods intended to return a given condition to compliance with a standard or guideline. Level III management options are more direct or restrictive and are not undertaken until guidelines are exceeded to a certain extent that is sustained a number of times or for a certain period of time (described as thresholds). Seven specific standards have been developed for use in evaluating the Management Areas and include the following:

- Campsite Condition.
- Campsite Density.
- Perception of Solitude.
- Trail Condition.
- Length-of-Stay.
- Recreational Stock Use.
- Unauthorized Motor Vehicle and Mechanical Transport Intrusions.

The above monitoring data are applied to the guidelines to determine whether each Management Area or individual canyon within the Gorges Management Area meets the guideline. Each standard and its management options are described below and would be implemented, based on the degree to which a Management Area or individual canyon in the Gorges Management Area exceeds a threshold for one or more guidelines.

Campsite Condition Standard - Campsite conditions reflect the visual imprint of human uses, as well as effects to soil and vegetation, and often hydrologic and water quality. A modified Cole Campsite Monitoring System is used to classify camp area conditions. The Cole Campsite Monitoring System was developed through the USFS to provide a method for the systematic monitoring of campsites to assess their use and conditions. Conditions are grouped into four categories based on a score that is determined by surveying a variety of factors that affect campsites. Conditions range from "minimum", showing the least effects, to "extreme", showing the highest effects.

Campsite Condition - Management Options			
Indicator	Level I Options	Level II Options	Level III Options
Number of campsites within a Management Area or individual canyon that are within a Campsite Condition	- Voluntary dispersal of use through education efforts by agency personnel, volunteers, and publications. - Inform visitors of opportunities outside wilderness. - Emphasize Leave No Trace education efforts. - Increase wilderness information specialist (WIS) program and ghost rider program efforts.	- Discourage the inclusion of information in publications or guidebooks that directs visitors to high use areas. - Inform users about alternative areas. - Implement area-wide non-quota permit system to increase visitor education. - Limit improvements of trailhead access to areas where crowding is a concern. - Limit improvement of trail access in areas where crowding is a concern. - Restrict campfire use to previously used areas. - Limit camping to designated campsites in high use zones to minimize establishment of new campsites. - Close and rehabilitate selected campsites where campsite density is high. - Limit group sizes to reduce effects to campsites. - Implement regulations to restrict recreational stock from being tied to trees in campsites.	- Shorten length-of-stay period. - Implement permit quota system for specific areas that are exceeding guidelines. - Implement area-wide permit quota system at trailheads or at individual destinations. - Implement closure of specific areas to the use of campfires and remove fire rings.

Campsite Density Standard - The campsite density standard describes the maximum allowable number of established campsites per section (one square mile) within the Uplands Management Area, or per linear mile within the Gorges Management Area or individual canyon. Established campsites are determined from evidence that continued or repetitive camping has occurred at the campsite in the past. Evidence could consist of fire ring(s), barren ground caused by compaction, long-term vegetation effects, or other severe signs of human usage. Campsite density is also monitored at designated high-altitude lake basins. The guideline for the maximum allowable established campsites would be determined for each lake basin.

Campsite Density - Management Options			
Indicator	Level I Options	Level II Options	Level III Options
Number of existing campsites within a Management Area or individual canyon, or Number of established campsites within a lake basin area.	- Voluntary dispersal of use through education efforts by agency personnel, volunteers, and publications. - Inform visitors of opportunities outside wilderness. - Emphasize Leave No Trace education efforts. - Agency personnel educate users to utilize existing campsites in high use areas.	- Discourage the inclusion of information in publications or guidebooks that directs visitors to high use areas. - Inform users about alternative areas. - Implement area-wide non-quota permit system to increase visitor education. - Limit improvements of trailhead access to areas where crowding is a concern. - Limit improvement of trail access in areas where crowding is a concern. - In site specific areas, increase the distance from campsite to water resources. - Restrict campfire use to previously used areas. - Limit camping to designated campsites in high use zones to minimize establishment of new campsites. - Close and rehabilitate selected campsites where campsite density is high.	- Shorten length-of-stay period. - Implement permit quota system for specific areas that are exceeding guidelines. - Implement area-wide permit quota system at trailheads or at individual destinations.

Perception of Solitude Standard - Perception of Solitude is measured by campsite and trail encounters, the sizes of groups encountered, and by the degree of "perceived crowding," as determined from surveying wilderness users. The Campsite Encounter Guideline monitors the average number of occupied campsites within sight or sound of the monitor's campsite per Management Area or individual canyon. The monitored number of encounters is averaged over the summer use season that varies by Management Area or individual canyon.

The Trail Encounter Guideline monitors the average number of encounters with parties (groups) on a trail or cross-country route. Encounter rates depend on the length of time spent hiking or riding and are converted to an eight-hour period to obtain monitoring consistency. The location of a trail or route segment relative to the different Management Areas determines the location of encounters. Trail or route encounters with large groups (defined as groups having more than twelve people) are monitored by the same methodology. Crowding perception is monitored through surveys of wilderness users to obtain their viewpoints regarding crowding levels during their visit. The crowding scale ranges from Not Crowded to Extremely Crowded. The guideline refers to the percentage of respondents who reported being moderately to extremely crowded.

Perception of Solitude - Management Options			
Indicator	Level I Options	Level II Options	Level III Options
Number of campsites occupied within sight or sound of the monitor's campsite per Management Area or individual canyon (season average). or Number of party encounters on or off trail per eight-hour day (season average). or Percent of sampled visitors who report being moderately to extremely crowded within a Management Area or individual canyon.	- Voluntary dispersal of use through education efforts by agency personnel, volunteers, and publications. - Inform visitors of opportunities outside wilderness. - Inform visitors of the type of experience (i.e. high encounter rate, numerous campsites, etc.) they are likely to have. - Inform visitors of areas or times best to visit that would reduce crowding.	- Discourage the inclusion of information in publications or guidebooks that directs visitors to areas. - Inform users about alternative areas. - Implement area-wide non-quota permit system to increase visitor education. - Limit group size in areas of concentrated use. - Limit improvements of trailhead access to areas where crowding is a concern. - Limit improvement of trail access in areas where crowding is a concern. - In specific areas, increase the distance that campsites must be away from water.	- Institute parking fees at high use trailheads. - Shorten length-of-stay period. - Implement backcountry use fees for high use areas. - Implement permit quota system for specific areas that are exceeding guidelines. - Implement area-wide permit quota system at trailheads or at individual destinations.

Trail Condition Standard - The trail condition standard describes the maximum allowable number of social trails per Management Area or individual canyon, as well as changes in the width and depth of the system trails. System and social trails refer to evidence that continued or repetitive use has occurred along a trail in the past. Evidence could consist of trampled vegetation, barren ground caused by compaction, long-term vegetation effects, or other severe signs of human use. System trails are those that are managed for continual long-term use. Social trails are the result of random use patterns and are unplanned in their location.

Trail Condition - Management Options			
Indicator	Level I Options	Level II Options	Level III Options
Number of social trails within a Management Area or individual canyon. or Width and depth of system trails.	- Voluntary dispersal of use through education efforts by agency personnel, volunteers, and publications. - Inform visitors of opportunities outside wilderness. - Emphasize Leave No Trace education efforts. - Agency personnel educate users to utilize existing campsites in high use areas.	- Discourage the inclusion of information in publications or guidebooks that directs visitors to high use areas. - Inform users about alternative areas. - Implement area-wide non-quota permit system to increase visitor education. - Limit improvements of trailhead access to areas where crowding is a concern. - Limit improvement of trail access in areas where crowding is a concern. - In site specific areas, increase the distance campsites must be away from water. - Limit camping to designated campsites in high use zones to minimize establishment of new campsites. - Close and rehabilitate selected trails where trail density is high.	- Shorten length-of-stay period. - Implement permit quota system for specific areas that are exceeding guidelines. - Implement area-wide permit quota system at trailheads or at individual destinations.

Length-of-Stay Standard - The length-of-stay standard describes the maximum allowable number of days individuals or groups stay within a Management Area or individual canyon. The length-of-stay would be based on information collected by voluntary reporting at trailheads and interviews by the Wilderness Rangers.

Length-of-Stay - Management Options			
Indicator	Level I Options	Level II Options	Level III Options
Length-of-stay within a Management Area or individual canyon.	- Voluntary reduction in the lengths-of-stay through education efforts by agency personnel, volunteers, and publications. - Inform visitors of opportunities outside wilderness. - Emphasize Leave No Trace education efforts. - Increase WIS program and ghost rider program efforts.	- Discourage the inclusion of information in publications or guidebooks that directs visitors to high use areas. - Inform users about alternative areas. - Implement area-wide non-quota permit system to increase visitor education. - Limit improvements of trailhead access to areas where length-of-stay is a concern. - Limit improvement of trail access in areas where length-of-stay is a concern. - Limit camping to designated campsites in high use zones, to minimize establishment of new campsites.	- Shorten length-of-stay period. - Implement permit quota system for specific areas that are exceeding guidelines. - Implement area-wide permit quota system at trailheads or at individual destinations. - Implement closure of specific areas to the use of campfires and remove fire rings.

Recreational Stock Use Standard - The effects of recreational stock use on vegetation, meadows, and riparian areas is determined by monitoring the amount of manure in campsite areas, condition of tree roots, and presence of tree girdling in campsite areas.

Recreational Stock Use - Management Options			
Indicator	Level I Options	Level II Options	Level III Options
Amount of recreational stock use within a Management Area or individual canyon.	- Educate public on proper use of recreational stock in the backcountry. - Voluntary dispersal of use through educational efforts. - Inform visitors of opportunities outside these areas. - Emphasize Leave No Trace education efforts for all backcountry users, with emphasis for stock users.	- Limit the number of recreational stock-per-party in areas that are exceeding guidelines. - Require certified weed free feed/hay be used for recreational livestock in place of grazing. - Prohibit picketing in areas where guidelines are exceeded. - Implement and enforce special rules to prohibit tying recreational stock to trees. - Restrict grazing within areas that are exceeding guidelines to no more than one-third of the grazing season. - Establish an "on" date for recreational stock use or a season of use. - Develop a rotational system within a Management Area or individual canyon that would allow recreational stock grazing only within specified areas. - Limit length-of-stay by recreational stock within areas that are exceeding guidelines.	- Close specific areas that are exceeding guidelines to use by recreational stock. - Close Management Area or individual canyon to grazing by recreational stock.

Unauthorized Motor Vehicle and Mechanical Transport Intrusions Standard - The unauthorized motor vehicle and mechanical transport intrusions standard describes the maximum allowable number of unauthorized intrusions into the Steens Mountain Wilderness off road or on any closed road or from the off-set boundary of any road bounded on both sides by wilderness or from the off-set boundary of any road which runs parallel to the wilderness. Unauthorized intrusions can include any type of motor vehicle or mechanical transport including, but not limited to, OHVs, snowmobiles, and bicycles. Unauthorized intrusions are determined from evidence of vehicle tracks in the wilderness or from actual sightings of vehicles in the wilderness.

Unauthorized Motor Vehicle and Mechanical Transport Intrusions - Management Options		
Indicator	Level I Options	Level II Options
Number of intrusions into the wilderness by unauthorized motor vehicles and mechanical transport on closed roads or off of roads.	- Disperse educational information regarding motor vehicle and mechanical transport regulations in wilderness with efforts by agency personnel, volunteers, and publications. - Increase signing of wilderness boundary and area closures. - Inform visitors of driving opportunities outside wilderness. - Emphasize Leave No Trace education efforts. - Agency personnel educate users and other agency personnel about regulations regarding motor vehicles and mechanical transport in wilderness. - Post wilderness regulations regarding motor vehicle and mechanized transport use restrictions in wilderness at campgrounds, appropriate trailheads, and other areas appropriate for public information. - Cite any known violators driving in the wilderness.	- Restriction of public use for certain recreational activities. - Develop controls at access points to exclude motor vehicles and mechanical transport from the wilderness. - Increase law enforcement and other routine patrols.

2.22.3 Management Direction by Alternative

The management direction for the Steens Mountain Wilderness, by alternative, assesses a range of thresholds that would trigger the implementation of the appropriate level of management based on the exceedence of the threshold. Thresholds are the upper limits in terms of time period or percentage of the standard or guideline that is exceeded, at which point the next level of management options would be undertaken.

2.22.3.1 **Goal 1 - Maintain or improve the wilderness values and the special features of the Steens Mountain Wilderness under a principle of nondegradation and in a manner that would leave these values unimpaired for future use and enjoyment as wilderness, while providing opportunities for public use, enjoyment, and understanding.**

Objective. Manage public visitation in the wilderness to provide outstanding opportunities for solitude, primitive and unconfined recreation, naturalness, and other features including ecological, geological, scientific, educational, scenic and historic.

Alternative A

Develop an integrated Steens Mountain Wilderness and WSRs Management Plan for all WSRs in the CMPA and Steens Mountain Wilderness. All areas in the wilderness would be classified in a similar way (no separate Management Areas). There would be no limits on party sizes, and no restrictions on dogs in the wilderness. The use of catholes and proper disposal of toilet paper would be encouraged. There would be no restrictions on camping or recreational stock. Self

registration at selected trailheads would be encouraged. Minimal maintenance would be conducted on Little Blitzen, Big Indian, and Wildhorse Lake trails. No new trails would be constructed and inappropriate user created trails would be reclaimed. There would be no campsite restrictions. Length-of-stay in the wilderness would be limited to 14 days. The wilderness would be inventoried to establish baseline conditions and to collect monitoring data for resource and social effects and to establish the desired conditions. As outlined in the Wilderness and WSRs Management Plan, two years of data collected in 2003 and 2004 would be utilized to establish the baseline conditions. The monitoring data would then be evaluated after three years and management actions would be modified, if necessary, to achieve the desired conditions.

Alternative B

Develop an integrated Steens Mountain Wilderness and WSRs Management Plan for all WSRs in the CMPA and Steens Mountain Wilderness. The wilderness would be classified into two Management Areas. Within the Gorges Management Area, five individual canyons would be identified. No dogs would be allowed in the wilderness. Management of party sizes would limit groups to a maximum of six individuals and nine recreational stock, except for Native American use. All human waste and toilet paper would be required to be packed out of the wilderness. No camping would be allowed at Wildhorse Lake or in any RNA. Use of existing established campsites would be required. Tying recreational stock to trees would not be allowed. As outlined in the Wilderness and WSRs Management Plan, two years of data collected in 2003 and 2004 would be used to establish the baseline conditions. Monitoring data would then be evaluated after three years to determine whether the following thresholds have been exceeded, which would determine the implementation of appropriate management options as outlined in Section 2.21.2. Based on monitoring, management options would be implemented throughout a Management Area or individual canyon, as appropriate, unless otherwise identified.

Campsite Condition Guideline	
Management Area	Guideline
Gorges	- No greater than 20 percent of campsites within an individual canyon at Campsite Condition "heavy" in two of three consecutive monitoring years at Level I; in three of four consecutive monitoring years at Level II; and in four of five consecutive monitoring years at Level III. - No campsites at Campsite Condition "extreme" in any monitoring year.
Uplands	- No greater than 20 percent of campsites within the Management Area at Campsite Condition "heavy" in two of three consecutive monitoring years at Level I; in three of four consecutive monitoring years at Level II; and in four of five consecutive monitoring years Level III. - No campsites at Campsite Condition "extreme" in any monitoring year.

A campsite at Campsite Condition "extreme" would allow the implementation of management options for that specific campsite.

Campsite Density Guideline	
Management Area	Guideline
Gorges	- Two campsites per linear mile, in two of three consecutive monitoring years Level I; in three of four consecutive monitoring years Level II; and in four of five consecutive monitoring years Level III.
Uplands	- Four campsites per square mile, in two of three consecutive monitoring years Level I; in three of four consecutive monitoring years Level II; and in four of five consecutive monitoring years Level III.

Perception of Solitude Guideline				
Management Area	Guideline			
	Campsite Encounters	Trail/Route Encounters	Large Group Encounters	Crowding Perception
Gorges	Two per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	Six per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	One per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	Less than ten percent increase in visitors reporting to be moderately to extremely crowded, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	One per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	Three per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	0.5 per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	Less than five percent increase in visitors reporting to be moderately to extremely crowded, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Trail Condition Guideline	
Management Area	Guideline
Gorges	- 20 percent increase in the density of trails per acre, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 25 percent increase in the width or depth of trails in an individual canyon, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	- Ten percent increase in the density of trails per acre, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 20 percent increase in the width or depth of trails in the Management Area, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Length-of-Stay Guideline	
Management Area	Guideline
Gorges	- 25 percent increase in average length-of-stay for all parties in the wilderness, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	- 20 percent increase in average length-of-stay for all parties in the wilderness, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Recreational Stock Use Guideline	
Management Area	Guideline
Gorges	- 25 percent increase in root exposure at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 25 percent increase in tree girdling at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 25 percent increase in manure present at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	- 20 percent increase in root exposure at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 20 percent increase in tree girdling at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 20 percent increase in manure present at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Alternative C

Develop an integrated Steens Mountain Wilderness and WSRs Management Plan for all WSRs in the CMPA and Steens Mountain Wilderness. The wilderness would be classified into two Management Areas. Within the Gorges Management Area, five individual canyons would be identified. Dogs would be allowed in all areas but would be required to be under voice or physical control. Management of party sizes would limit groups to a maximum of nine individuals and 12 recreational stock, except for permitted historic uses and Native American use. Catholes for human waste would be required and must be at least 150 feet from all water sources, campsites, and trails. Toilet paper would be required to be packed out. No camping would be allowed in any RNA or at Wildhorse Lake. High lines or picketing of recreational stock would be required. Tying stock to trees would not be allowed. Minimal maintenance would be conducted on Little Blitzen, Big Indian, and Wildhorse Lake trails. No new trails would be constructed and inappropriate user created trails would be reclaimed. Selected closed roads in the wilderness would also be reclaimed. As outlined in the Wilderness and WSRs Management Plan, two years of data, collected in 2003 and 2004, would be used to establish the baseline conditions. The monitoring would be used to determine whether the following thresholds have been exceeded, which would determine the implementation of appropriate management options as outlined in Section 2.21.2.

Campsite Condition Guideline	
Management Area	Guideline
Gorges	- No greater than 30 percent of campsites within an individual canyon at Campsite Condition "heavy", in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - No campsites at Campsite Condition "extreme" in any monitoring year, unless designated.
Uplands	- No greater than 30 percent of campsites within the Management Area at Campsite Condition "heavy", in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - No campsites at Campsite Condition "extreme" in any monitoring year, unless designated.

A campsite at Campsite Condition "extreme" would allow the implementation of management options for that specific campsite.

Campsite Density Guideline	
Management Area	Guideline
Gorges	- Five campsites per linear mile, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	- Six campsites per square mile, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Perception of Solitude Guideline				
Management Area	Guideline			
	Campsite Encounters	Trail/Route Encounters	Large Group Encounters	Crowding Perception
Gorges	Four per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	Nine per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	Two per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	Less than 20 percent increase in visitors reporting to be moderately to extremely crowded, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	Two per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	Four per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	One per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	Less than ten percent increase in visitors reporting to be moderately to extremely crowded, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Trail Condition Guideline	
Management Area	Guideline
Gorges	- 35 percent increase in the density of trails per acre, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 50 percent increase in the width or depth of trails in an individual canyon, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	- 20 percent increase in the density of trails per acre, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 35 percent increase in the width or depth of trails in the Management Area, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Length-of-Stay Guideline	
Management Area	Guideline
Gorges	- 50 percent increase in average length-of-stay for all parties in the wilderness, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	- 35 percent increase in average length-of-stay for all parties in the wilderness, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Recreational Stock Use Guideline	
Management Area	Guideline
Gorges	- 50 percent increase in root exposure at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 50 percent increase in tree girdling at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 50 percent increase in manure present at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	- 35 percent increase in root exposure at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 35 percent increase in tree girdling at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 35 percent increase in manure present at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Proposed RMP

Develop an integrated Steens Mountain Wilderness and WSRs Management Plan for all WSRs in the CMPA and Steens Mountain Wilderness. The wilderness would be classified into two Management Areas: the Gorges Management Area and the Uplands Management Area. Within the Gorges Management Area, five individual canyons (Little Blitzen, Big Indian, Little Indian, Kiger and Wildhorse) would be identified where management actions can be initiated separately in each canyon. Dogs would be allowed in all areas but would be required to be under voice or physical control. Management of party sizes would limit groups to a maximum of 12 persons and 18 head of recreational stock, except for historic permitted uses and Native American use. Recommended length-of- stay would be limited to 14 days. Catholes for human waste would be required and must be a minimum of 150 feet (60 footsteps) from all water sources, campsites, and trails. Require all toilet paper to be packed out. Packing out of human waste would be strongly encouraged and may be required for certain permitted activities. Overnight camping would be allowed in the Rooster Comb and Little Blitzen RNAs in historically used areas when consistent with the purpose of the RNA and the Steens Mountain Wilderness and WSRs Management Plan objectives. Camping would be allowed at Wildhorse Lake in a defined area in designated campsites only. No overnight recreational stock use at Wildhorse Lake would be allowed. No camping would be allowed in the Little Wildhorse RNA. Grazing of recreational stock would be allowed, consistent with the standards and guidelines. Tying recreational stock to trees would only be allowed for the loading and unloading of stock. Tying of recreational stock to trees overnight would not be allowed. Pack goats would be highlined or picketed. Other recreational stock may graze freely in the No Livestock Grazing Area of the Steens Mountain Wilderness, except the Little Blitzen RNA where such use would be monitored. The Little Blitzen, Big Indian, and Wildhorse Lake Trails would be maintained and new trails would be constructed as needed to preserve wilderness values and to protect resources from damage. Selected roads in the wilderness would be reclaimed to eliminate evidence of the road.

Inappropriate user created trails would be reclaimed. As outlined in the Wilderness and WSRs Management Plan, two years of data, collected in 2003 and 2004, would be used to establish the baseline condition. During 2005, 2006, and 2007 evaluate monitoring data as outlined in the Steens Mountain Wilderness and WSRs Management Plan. Continue to review monitoring data every three years thereafter and change management options as needed if not within acceptable limits. The monitoring would be used to determine whether the following thresholds have been exceeded, which would determine the implementation of appropriate management options as outlined in Section 2.21.2.

Campsite Condition Guideline	
Management Area	Guideline
Gorges	- No greater than 30 percent of campsites within an individual canyon at Campsite Condition "heavy", in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - No campsites at Campsite Condition "extreme" in any monitoring year, unless the campsite is designated.
Uplands	- No greater than 20 percent of campsites within the Management Area at Campsite Condition "heavy", in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - No campsites at Campsite Condition "extreme" in any monitoring year, unless the campsite is designated.

A campsite at Campsite Condition "extreme" would allow the implementation of management options for that specific campsite.

Campsite Density Guideline	
Management Area	Guideline
Gorges	- Five campsites per linear mile, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	- Six campsites per square mile, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Perception of Solitude Guideline				
Management Area	Guideline			
	Campsite Encounters	Trail/Route Encounters	Large Group Encounters	Crowding Perception
Gorges	Four per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	Nine per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	Three per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	20 percent increase in visitors reporting to be moderately to extremely crowded, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	Two per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	Four per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	One per eight-hour period, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.	Ten percent increase in visitors reporting to be moderately to extremely crowded, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Trail Condition Guideline	
Management Area	Guideline
Gorges	- 35 percent increase in the density of trails per acre, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 50 percent increase in the width or depth of trails in an individual canyon, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	- 20 percent increase in the density of trails per acre, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 35 percent increase in the width or depth of trails in the Management Area, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Length-of-Stay Guideline	
Management Area	Guideline
Gorges	- 50 percent increase in average length-of-stay for all parties in the wilderness, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	- 35 percent increase in average length-of-stay for all parties in the wilderness, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Recreational Stock Use Guideline	
Management Area	Guideline
Gorges	- 50 percent increase in root exposure at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 50 percent increase in tree girdling at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 50 percent increase in manure present at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.
Uplands	- 35 percent increase in root exposure at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 35 percent increase in tree girdling at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III. - 35 percent increase in manure present at campsites, in two of three consecutive monitoring years Level I, in three of four consecutive monitoring years Level II, and in four of five consecutive monitoring years Level III.

Alternative E

Develop an integrated Steens Mountain Wilderness and WSRs Management Plan for all WSRs in the CMPA and Steens Mountain Wilderness. The entire wilderness would be classified in a similar manner with no Management Areas. Dogs would be allowed in all areas. The use of catholes and proper disposal of toilet paper would be encouraged. There would be no restrictions on camping. There would be no management of party sizes. Recreational stock would be allowed in all areas. High lines or picketing of recreational stock would be allowed and would be required to occur at a distance greater than 150 feet from water sources. Minimal maintenance would be conducted on Little Blitzen, Big Indian, and Wildhorse Lake trails. New trails would be constructed, where appropriate, with increased use and to aid visitor travel. Selected closed roads in the wilderness would be reclaimed, while allowing the use of others as informal stock and hiking routes. Length-of-stay in the wilderness would be limited to 14 days. The wilderness would be inventoried to establish baseline conditions and to collect monitoring data for resources and social effects, and to establish the desired conditions. As outlined in the Wilderness and WSRs Management Plan, two years of data, collected in 2003 and 2004, would be used to establish the baseline conditions. The monitoring data would then be evaluated after three years and management actions would be modified, if necessary, to achieve the desired conditions.

2.22.3.2 **Goal 2 - Manage the wilderness in such a manner that the landscape is essentially unaffected by human manipulation and influences, while allowing natural processes to dominate.**

Objective. Accomplish necessary projects and activities occurring in wilderness with the minimum tool or requirement needed to achieve a desired result. The chosen tool, equipment, or structure would be the one that least degrades wilderness values temporarily or permanently.

Alternative A

No new recreation facilities would be constructed in wilderness or at trailheads. Historic structures would be allowed to deteriorate through natural processes, including fire. Limited maintenance of Nye Cabin would take place only to correct hazards. All fire suppression would be accomplished using the Appropriate Management Response, based on life, safety, and resource values. Noxious weeds and other exotic plant species in wilderness would be controlled using a full range of equipment after a MRDG analysis.

Alternative B

No new recreation facilities would be constructed in wilderness or at trailheads. Historic structures would be allowed to deteriorate through natural processes, including fire. Nye Cabin would not be maintained. Fire would be allowed to play its natural role, except in areas along the wilderness boundary where life and property are at risk. All lightning fires would be considered for wildland fire use. Wildland fires would be confined or contained within natural barriers unless additional measures are necessary to protect life or property values. No prescribed fire would be allowed. Noxious weeds and other exotic plant species in wilderness would be controlled using nonmotorized equipment.

Alternative C

No new recreation facilities would be constructed in wilderness. New facilities would only be constructed at trailheads if resource damage or hazards exist. All facilities (excluding trails) and structures in wilderness would be removed except for historic ones and those needed for grazing or wildlife purposes. Historic structures would be allowed to deteriorate through natural processes, including fire. Limited maintenance of Nye Cabin would take place only to correct hazards. Removal of the Page Springs gauging weir would be considered. Fire would be allowed to play its natural role, except in areas along the wilderness boundary where life and property are at risk. All lightning fires would be considered for wildland fire use. Wildland fires would be confined or contained within natural barriers unless additional measures are necessary to protect life or property values. Prescribed fire would be allowed if needed to maintain the natural condition of a fire-dependent ecosystem or to reintroduce fire where past wildland fire control measures have affected natural ecological processes. Noxious weeds and other exotic plant species in wilderness would be controlled using a full range of equipment after a MRDG analysis.

Proposed RMP

Historic structures could be maintained to preserve them. Nonconforming structures could be removed or allowed to deteriorate except those needed for grazing and wildlife purposes. Fire would be allowed to play its natural role, except in areas along the wilderness boundary where life and property are at risk. All lightning fires would be considered for wildland fire use. Wildland fires would be confined or contained within natural barriers unless additional measures are necessary to protect life and property values. Prescribed fires would be allowed in order to achieve resource management objectives if needed to restore or maintain the natural condition of a fire-dependent ecosystem. The MRDG would be completed to determine if action is necessary and the method of control and range of equipment needed to control noxious weeds in the wilderness. Wilderness management activities not specifically covered in other management options would be managed in accordance with wilderness management goals. Such activities would include, but not be limited to, predator control, horse gathers, and search and rescue.

Alternative E

Recreation facilities would be constructed at trailheads as needed to prevent resource damage. Historic structures would be maintained to preserve them. Nonconforming structures would be removed or allowed to deteriorate except for those needed for grazing and wildlife purposes. Nye Cabin would be managed as a rental cabin. All fire suppression would be accomplished using the Appropriate Management Response, based on life, safety, and resource values. Noxious

weeds and other exotic plant species in wilderness would be controlled using a full range of equipment after a MRDG analysis.

2.22.3.3 **Goal 3 - Manage nonconforming uses of the Steens Mountain Wilderness, allowed under the Wilderness Act and the Steens Act, to have the minimum effect on wilderness values.**

Objective 1. Manage livestock grazing in wilderness under the stipulations of the Congressional Grazing Guidelines (HR 101-405 Appendix A).

The Proposed RMP and Alternatives A and C

Provide reasonable access on established routes within the Steens Mountain Wilderness to grazing permittees for administration of their grazing permits. Specific authorizations are being analyzed in a separate EA. Access authorizations would automatically terminate if the routes are no longer needed for livestock grazing administration purposes.

Alternative B

No mechanized transport or motorized equipment would be allowed for grazing operations in wilderness.

Alternative E

Mechanized/motorized use would be allowed at historic use levels (predesignation).

Objective 2. Provide for the level and type of commercial services necessary to enable the public to use, access, enjoy and understand the recreational and other values of wilderness, emphasizing opportunities for primitive and unconfined types of recreation, inspiration, and solitude.

Alternative A

New proposals would be considered.

Alternative B

No commercial services would be allowed.

Alternative C

The number of outfitters would remain at the current level. No permanent caches would be allowed.

The Proposed RMP and Alternative E

Consider new proposals from outfitters after preparing a needs assessment. No permanent caches allowed for SRP holders or the general public in the Steens Mountain Wilderness Area. The installation, erection or building of temporary or permanent structures is prohibited except for immediate use while camping. The BLM would attempt to avoid crowding and user conflicts by informing large groups and outfitter/guides of each others plans.

Objective 3. Allow for a level of reasonable access for the use and enjoyment of private inholdings while protecting the wilderness values.

The Proposed RMP and Alternatives A and C

Provide reasonable access on designated routes to nonfederal land inholdings within the wilderness area. Specific authorizations are being analyzed in separate NEPA documents. Access authorizations would automatically terminate if the routes are no longer needed for private land inholding access purposes.

Alternative B

No mechanized transport or motorized use would be allowed for inholding access.

Alternative E

Access would be allowed at historic (predesignation) levels.

Objective 4. Manage to prevent and exclude motor vehicle and mechanical transport intrusions into the wilderness either on closed roads or off of roads, except where authorized by permitted use or during emergencies.

Proposed RMP and Alternatives A, B, C, and E

Unacceptable numbers of unauthorized intrusions into the wilderness by motor vehicles and mechanical transport on closed roads or off of roads would result in the loss of recreational opportunities through the restriction of some activities. Controls would be developed to exclude motor vehicles and mechanical transport from the wilderness, as needed.

Unauthorized Motor Vehicle and Mechanical Transport Intrusions Guideline	
Management Area	Guideline
Gorges	- Unauthorized motor vehicle and mechanical transport intrusions are an illegal activity in wilderness and require immediate implementation of Level I management options. - Repeated, documented unauthorized intrusions into the wilderness from any points of access would be assessed for implementation of Level II management options.
Uplands	- Unauthorized motor vehicle and mechanical transport intrusions are an illegal activity in wilderness and require immediate implementation of Level I management options. - Repeated, documented unauthorized intrusions into the wilderness from any points of access would be assessed for implementation of Level II management options.

2.23 Wilderness Study Areas and Parcels with Wilderness Characteristics

2.23.1 Wilderness Study Areas

2.23.1.1 Goal 1 - Manage WSAs so as not to impair their suitability for preservation as wilderness.

2.23.1.2 Management Framework

Wilderness preservation is part of the BLM's multiple use mandate, and wilderness is recognized as part of the spectrum of resource values considered in the land use planning process. WSAs are managed in accordance with the BLM's WSA IMP (USDI 1995b). The Congressional mandate of nonimpairment, the primary standard for interim management, is that land under wilderness review must be managed so as not to impair its suitability for preservation as wilderness. Wilderness values, described in section 2 (c) of the Wilderness Act of 1964 (P.L. 88-577), must be protected in WSAs. The initial task of identifying areas suitable for wilderness preservation has been completed as mandated in the FLPMA section 603, and is documented in BLM 1989 Oregon Final Wilderness EIS and the Wilderness Study Report for Oregon (USDI 1991c).

The WSA IMP takes precedence over other management direction unless the other management direction is more restrictive and protective than the WSA IMP, in which case the more restrictive management would be followed. WSAs are managed under the WSA IMP until such time as Congress makes a determination regarding wilderness designation. The WSA IMP states that activities must comply with specific policy guidance and policies for specific activities, including the following nonimpairment criteria:

1. The use, facility, or activity must be temporary. This means a temporary use that does not create surface disturbance or involve permanent placement of facilities may be allowed if such use can easily and immediately be terminated upon wilderness designation.

2. When the use, activity, or facility is terminated, the wilderness values must not have been degraded so far as to significantly constrain the Congressional prerogative regarding the area's suitability for preservation as wilderness.

Exceptions to the nonimpairment criteria include emergencies such as fire suppression and search and rescue operations; reclamation of effects from WSA IMP violations, emergencies and pre-FLPMA impacts; grandfathered uses or facilities, or valid existing rights; or uses and facilities that clearly protect or enhance the land's wilderness values or that are the minimum necessary for public health and safety in the use and enjoyment of wilderness values.

OHV and mechanized vehicle use in WSAs is limited to existing or designated ways or the WSA is closed to OHV and mechanized vehicle use. Existing ways are those that existed at the time of the wilderness inventory. Designated ways could be the same as or fewer than existing ways because some ways may be closed due to resource concerns. The use of mechanical transport, including all motorized devices as well as trail and mountain bikes, may only be allowed on existing ways and within open areas that were designated prior to the passage of the FLPMA (October 1976). The Andrews MFP recognizes that OHV and mechanized vehicle use occurred on the Alvord Desert playa in the Alvord Desert WSA prior to the FLPMA. OHV and mechanized vehicle use of the Alvord Desert playa does not impair wilderness values and does not preclude Congress from designating the area as part of the National Wilderness Preservation System. The BLM has allowed this use to continue based on the determination that managed OHV and mechanized vehicle use would not preclude future wilderness designation. Should the Alvord Desert playa be designated as wilderness, OHV and mechanized vehicle use would not be allowed on the playa.

Management direction for WSAs not designated by Congress and released from WSA status would be based on management direction provided in the Final RMP and ROD.

2.23.1.3 Management Direction by Alternative

Objective. Manage existing WSAs so as not to impair their suitability for preservation as wilderness.

Management Common to All Alternatives

The WSAs, which total 678,802 acres (Table 3.23.1) would continue to be managed under the WSA IMP until designated as wilderness by Congress or released from WSA status.

2.23.2 Parcels with Wilderness Characteristics

2.23.2.1 Goal 2 - Manage parcels with wilderness characteristics to protect those characteristics.

2.23.2.1.1 Management Framework

As a result of the settlement of Utah v. Norton, authority for the BLM to designate new WSAs under FLPMA section 202, or manage any additional lands under FLPMA section 603, expired in 1993. The BLM may manage lands newly found to have wilderness characteristics through a variety of land use plan decisions to affect, protect or preserve some or all of the wilderness characteristics. This may include protecting certain lands in their natural condition or providing opportunities for solitude or primitive and unconfined recreation. The land use plan decisions include, but are not limited to, VRM class designation, OHV and mechanized vehicle designation, lands and realty designations, and conditions of use to be attached to permits, leases or other authorizations.

2.23.2.1.2 Management Direction by Alternative

Objective. Manage parcels with wilderness characteristics to protect those characteristics.

Proposed RMP, Alternatives A, B, and E

Parcels with wilderness characteristics would not be provided special management status. These parcels would be managed under the proposed strategies for each alternative.

Alternative C

Four parcels (see DRMP/DEIS Map 2.18) with wilderness characteristics would be provided special management consideration: Bridge Creek (1,526 acres), High Steens (629 acres), Lower Stonehouse (2,176 acres), and Alvord Desert (2,033 acres). Protection would include the following designations: OHV and mechanized vehicle use limited to designated roads, Class II VRM, and ROW exclusion. Motorized equipment (chainsaws) could be used in the treatment of vegetation to restore naturalness in the Bridge Creek parcel.

2.23.3 Monitoring

See Appendix Q.

2.24 Wild and Scenic Rivers

2.24.1 Goal 1 – Manage the existing and newly designated WSRs in conformance with the WSRs Act and the Wilderness Act.

2.24.1.1 Management Framework

The WSRs Act (Public Law 90-542 and amendments), section 1(b), states that "certain selected rivers of the nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations." Section 10(a) describes the basic management requirement of protecting and enhancing the values that caused the river to be included in the National WSRs System. The BLM manages 12 rivers that are in the WSRs System. Six are part of the Donner und Blitzen River drainage and were designated when Congress passed the Omnibus Oregon WSRs Act of 1988. A management plan for the Donner und Blitzen River and the five other river segments was completed in 1993. The Steens Act designated an additional six rivers. Mud Creek, Ankle Creek, and the South Fork of Ankle Creek were added to the Donner und Blitzen River System. Wildhorse Creek, Little Wildhorse Creek, and Kiger Creek were also designated. The length of the 12 designated rivers totals 105 miles with the BLM managing approximately 27,324 acres of public land within the WSR corridors. The remaining 4,022 acres within the WSR corridors are state and private land. Under the Steens Act, all 12 of the rivers fall within the CMPA and all but 1,204 acres of the BLM administered lands in the WSR corridors fall within the Steens Mountain Wilderness. A more detailed description of each designated river and its ORVs is located in Chapter 3.

Under the WSRs Act, rivers are classified by Congress as either Recreational, Scenic, or Wild depending on the extent of development and access along each river at the time of designation. All of the designated river segments in the CMPA were classified as Wild by Congress. River segments with a Wild classification are generally inaccessible except by trail, with watersheds and shorelines essentially primitive and waters unpolluted.

2.24.1.2 Management Direction by Alternative

Objective. Protect and enhance the ORVs of the designated WSRs.

Management Common to All Alternatives

BLM administered lands within WSR corridors would be managed to protect and enhance the ORVs for which they were designated. The existing Wild classification would be retained for all of the designated rivers. Under guidance from the Steens Act, where WSR corridors overlap with Steens Mountain Wilderness, the more restrictive management requirements would apply. Several of the river segments have roads, bridges, recreation facilities, historic structures, and other infrastructure that existed at the time of designation. These facilities would continue to be maintained and would be replaced as necessary to provide for public health and safety, as well as resource protection. An integrated management plan has been completed for Steens Mountain Wilderness and the designated WSRs as part of this Proposed RMP/FEIS (See Appendix U).

2.24.2 Goal 2 - Determine the suitability of eligible WSRs. Manage those rivers found to be suitable in conformance with BLM Manual 8351 (WSRs - Policy and Program Direction for Identification, Evaluation, and Management) for protective management of eligible and suitable WSRs.

2.24.2.1 Management Framework

Section 5(d)(1) of the WSRs Act requires that federal land management agencies conduct eligibility evaluations for rivers within their jurisdiction as part of their resource planning process. All rivers in the Andrews RA were evaluated for WSR eligibility in 1997 for the SEORMP. Each river was reviewed by an ID Team. The first step was to determine river segment eligibility based on free-flowing conditions and presence or absence of ORVs. The second step was to determine tentative river classification (Wild, Scenic, or Recreational) based primarily on the level of development along the river segment, with the Recreational classification for rivers with a greater degree of development and the Wild classification for rivers with the least amount of development.

Of the rivers that were evaluated, 13 were found to be eligible. Since 1997, the status of several rivers has changed. In 2000, three (Wildhorse Creek, Little Wildhorse Creek, and Kiger Creek) of the rivers found to be eligible were designated by Congress as WSRs in the Steens Act. The Steens Act also designated Mud Creek, Ankle Creek, and the South Fork of Ankle Creek as additions to Donner und Blitzen WSR system. These three rivers were not evaluated for eligibility or suitability in 1997 because the majority of land along each river was privately owned. The land ownership along these rivers became predominately public with the completion of several land exchanges also called for by the Steens Act. The remaining ten rivers found to be eligible include Big Alvord Creek, Willow Creek, Threemile Creek, Pike Creek, Mud Creek (different from the Mud Creek described above), McCoy Creek, Home Creek, Little Cottonwood Creek, Van Horn Creek, and Big Trout Creek.

The third step was to complete an evaluation and proposed suitability determination for each eligible river segment identified. Section 4(a) of the WSRs Act specifies the following factors that should be considered in the suitability evaluation and determination: the current status of land ownership and use in the area; the reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National WSRs System, and the values that would be foreclosed or diminished if the river is not protected as part of the National WSRs System; other agencies, organizations, or public interest in designation or nondesignation; administrative costs; ability of the agency to manage and protect the river area; and historic or existing rights.

In 2003 and 2004, the suitability evaluation and proposed determination for each eligible river were reviewed along with public comments on the DRMP/DEIS. No significant changes to the suitability factors assessed for each river were identified. A summary of the suitability evaluation and proposed determination for each eligible river is located in Appendix N.

2.24.2.2 Management Direction by Alternative

Objective. Protect and enhance the ORVs of rivers determined to be administratively suitable for potential inclusion into the National WSRs System by Congress.

Alternative A

The following eligible rivers would continue to be managed in conformance with BLM Manual 8351 for protective management of eligible WSRs without final determination of suitability:

- Big Alvord Creek - 6.3 miles Wild; ORVs are wildlife and botanic
- Willow Creek - 6.2 miles Wild; ORV is botanic
- Threemile Creek- 4.3 miles scenic; ORVs are fish and cultural
- Pike Creek - 4.2 miles scenic; ORV is wildlife
- Mud Creek - 7.2 miles scenic; ORV is botanic
- McCoy Creek - 30.8 miles scenic; ORV is wildlife
- Home Creek - 5.5 miles scenic; ORVs are scenic, recreational, and fish
- Little Cottonwood Creek - 12.1 miles scenic; ORV is botanic
- Van Horn Creek - 9.9 miles scenic; ORV is recreational
- Big Trout Creek - 20.3 miles scenic; ORV is scenic

Proposed RMP and Alternatives B and E

Based on the suitability evaluation and proposed determination completed for each river (Appendix N) no eligible rivers would be recommended as administratively suitable for potential designation by Congress as WSRs. Unsuitable river segments would be managed in accordance with RMP management objectives.

Alternative C

The following rivers would be recommended as administratively suitable for potential designation by Congress as WSRs:

- Big Alvord - 6.3 miles Wild; ORVs are wildlife and botanic
- Willow - 6.2 miles Wild; ORV is botanic
- Threemile - 4.3 miles Scenic; ORVs are fish and cultural
- Pike - 4.2 miles Scenic; ORV is wildlife
- Mud - 7.2 miles Scenic; ORV is botanic
- McCoy - 30.8 miles Scenic; ORV is wildlife
- Home - 5.5 miles Scenic; ORVs are scenic, recreational, and fish
- Little Cottonwood - 12.1 miles Scenic; ORV is botanic
- Van Horn - 9.9 miles Scenic; ORV is recreational
- Big Trout - 20.3 miles Scenic; ORV is scenic

All rivers found suitable for inclusion in the WSRs system would be managed in conformance with BLM Manual 8351 as if they are designated WSRs until Congress acts on whether to add these rivers into the WSRs system. All suitable rivers would be administered in such a manner as to protect and enhance their ORVs.

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Table S.1: Comparison SUMMARY of Resource Effects by Alternative

Table S.1 has been prepared as a comparison summary of potential resource effects by alternative. The reader needs to realize that this is only a summary and is not the complete analysis. The complete analysis can be found in Chapter 4.

Alternative A - No action. Continues present management.	**Alternative B -** Excludes commodity production and limits other uses; maximizes natural processes.	**Alternative C -** Emphasizes protection of natural values.	**Proposed RMP -** Balances cultural, economic, ecological, and social health in a manner that encourages cooperative management practices.	**Alternative E -** Emphasizes commodity production and public uses.
AIR QUALITY (See Section 4.2 for the Full Discussion of Effects)				
- Potential to emit between 350 and 700 tons of particulates per year from wildland fires. - Emissions from mining would be proportional to the number of operations. - Emissions from authorized land uses would be proportional to the number of uses.	- Emissions from prescribed fires less than Alternative A. - Emissions from wildland fires would likely be greater than Alternative A. - No emissions from mining operations. - Emissions from authorized land uses for maintenance/public health/safety would be proportional to the number of uses.	- Emissions from prescribed and wildland fires would likely be greater than Alternative A. - Emissions from mining operations would not occur. - Emissions from authorized land uses would be proportional to the number of uses.	- Emissions from prescribed and wildland fires would likely be greater than Alternative A. - Emissions from mining operations would be proportional to the number of operations. - Emissions from authorized land uses would proportional to the number of uses.	- Emissions from prescribed and wildland fires would likely be greater than Alternative A. - Emissions from mining operations would be proportional to the number of operations. - Emissions from authorized land uses would be proportional to the number of uses.
WATER RESOURCES (See Section 4.3 for the Full Discussion of Effects)				
- Water resources would continue to be maintained or improved through implementation of BMPs. - WQRPs would be developed and implemented on CWA 303(d) listed waters that establish specific objectives and management resulting in improved water quality and delisting of water body.	- Water resources would be maintained or improved through implementation of BMPs that maintain or restore riparian condition to an advanced ecological status. - As in Alternative A, WQRPs would be developed; however, development and implementation would be generally guided by a stream/watershed prioritization schedule. - Identification and management of cold water refuges would help maintain or improve water quality	- As in Alternative B, BMPs would be implemented to maintain or restore riparian condition to an advanced ecological status. - As in Alternative B, WQRPs would be generally guided by stream/watershed prioritization. - Active restoration would lead to improved riparian community structure, thereby maintaining or improving water quality and quantity at a faster rate than Alternative B.	- As in Alternatives A, B and C, water resources would be maintained or improved through implementation of BMPs. - As in Alternatives B and C, cold water refuges would be identified and protected. - Management of CWA 303(d) listed waters and development of WQRPs would have similar effects as Alternatives B and C through maintaining or restoring an appropriate riparian ecological status to attain water quality standards or other surrogate	- As in all Alternatives, water resources would be maintained or improved through implementation of BMPs. - As in Alternative A, WQRPs would be developed and implemented on CWA 303(d) listed waters that establish specific objectives and management resulting in improved conditions and delisting the water body. However, development and implementation of WQRPs would be generally guided by

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	through site specific protection of cold water species' habitat.		measures. - As in Alternative C, active restoration would lead to improved riparian community structure.	stream/watershed prioritization as in the Proposed RMP and Alternatives B and C.
SOILS AND BIOLOGICAL SOIL CRUSTS (See Section 4.4 for the Full Discussion of Effects)				
- Current management practices would continue to reduce soil erosion.	- There would be no direct effects.	- There would be no direct effects.	- Effects on soils and biological soil crusts from increases in disturbances would be greater than Alternatives A, B, or C, and less than Alternative E. - Management emphasis to rehabilitate soils and other resources would be greater than alternatives A, B, and E. - An increase in new projects where activities disturb or compact biological soil crusts could cause an effect on soils.	- More activities that affect soils and biological soil crusts would occur under this alternative. - Any activities that remove the vegetation cover and increase the erosion rate would affect soils and other resource values. - The greatest effect on biological soil crusts would be under this alternative.

Alternative A - No action. Continues present management.	Alternative B - Excludes commodity production and limits other uses; maximizes natural processes.	Alternative C - Emphasizes protection of natural values.	Proposed RMP - Balances cultural, economic, ecological, and social health in a manner that encourages cooperative management practices.	Alternative E - Emphasizes commodity production and public uses.
VEGETATION (Section 4.5)				
RIPARIAN AND WETLANDS (See Section 4.5.1 for the Full Discussion of Effects)				
- Riparian/wetland vegetation (composition, distribution and structure) would be maintained or improved to achieve a level of PFC, or higher perceived ecological status established through site/reach specific objectives.	- Riparian/wetland vegetation would be maintained or improved to achieve an advanced ecological status primarily relying on natural processes.	- As in Alternative B, riparian/wetland vegetation would be maintained or improved to achieve an advanced ecological status. However, incorporation of active restoration would improve or restore riparian vegetation at a faster rate and increase the likelihood of meeting site/reach specific objectives.	- Riparian/wetland vegetation would be maintained or restored at a range of ecological conditions depending on site/reach specific objectives. Objectives would include maintaining or achieving PFC at a minimum, and higher ecological status associated with CWA 303(d) listed waters, WSRs and wilderness. - As in Alternative C, active restoration would be incorporated as appropriate to progress towards meeting site/reach specific objectives.	- Same as the Proposed RMP.
WOODLANDS (See Section 4.5.2 for the Full Discussion of Effects)				
- Older juniper trees would be exposed to greater levels of competition from younger trees. - Wildfire intensity and severity would be greater. - A larger number of older trees would be lost due to the potential for larger fires. - Replacement of ancient trees would be limited if most of the younger trees are removed. - Mechanical removal of western juniper would release resources for quaking aspen and mountain mahogany growth.	- Post settlement western juniper trees would continue to establish and grow in the old growth stands increasing the risk for a severe wildfire. - Cover and density of western juniper would increase throughout range. - Mortality rates of ancient trees would increase. - The amount of standing and dead woody material would increase. - Acreage burned and number of ancient trees lost to fire would be	- Post settlement western juniper trees would be cut in old growth stands, but up to ten percent of these trees would be left to replace dead and dying trees. - Cover and density of understory plants would increase, reducing the size and extent of bare ground patches. - Direct effects of Alternative C would be similar to Alternative A with the following exceptions: wildland fires would be evaluated for threats to firefighter safety, public safety, and private lands;	- Direct effects would be similar to Alternative C except development of markets for byproducts of mechanical treatments would help boost the economy of Harney County. - Direct effects of western juniper cutting and prescribed burning would be similar to Alternative A and the effects of utilizing wildfire for resource benefits would be similar to Alternative B. - Utilization of cut western juniper would reduce the fuel loading in quaking aspen and mountain	- Direct effects of mechanical treatments would be the same as in Alternative A. - Direct effects of fire management would be similar to Alternative C except areas burned in old growth stands would be seeded to plant species that maximize forage production. - Direct and indirect effects of market development of byproducts from mechanical treatments would be the same as the Proposed RMP.

Alternative A - No action. Continues present management.	**Alternative B -** Excludes commodity production and limits other uses; maximizes natural processes.	**Alternative C -** Emphasizes protection of natural values.	**Proposed RMP -** Balances cultural, economic, ecological, and social health in a manner that encourages cooperative management practices.	**Alternative E -** Emphasizes commodity production and public uses.
- Seedling establishment of mountain mahogany would be encouraged. - Herbaceous and other woody understory would increase. - Quaking aspen suckering would be greatly favored by burning. However, some conditions may reduce suckering. - Burning in mountain mahogany stands would kill mature trees.	greatest in this alternative. - Western juniper would continue to increase cover and density in the lower elevation mountain big sagebrush, quaking aspe,n and mountain mahogany stands causing aspen, mountain mahogany and associated understory plants to decline.	and fires that do not pose threats to firefighters, public, or private land would be managed for resource benefits. - Post-fire plant community would be similar to Alternative A. - The direct effects of cutting of western juniper would be similar to Alternative A.	mahogany. - Fire intensity and severity would be lower in wildfires than if slash were left on site.	
WILDLANDS JUNIPER MANAGEMENT AREA (See Section 4.5.3 for the Full Discussion of Effects)				
- Inventory of biological communities present in the WJMA would help provide information on past, current, and future management actions in the western juniper zone. - Data would provide a baseline for future comparison. - Signs would provide for the dissemination of information related to western juniper management.	- Effects would be similar to Alternative A.	- Effects would be similar to Alternative A.	- Effects would be similar to Alternative A.	- Effects would be similar to Alternative A.
RANGELANDS (See Section 4.5.4 for the Full Discussion of Effects)				
- Nonnative seedings would be managed or manipulated to meet S&Gs. Vegetation characteristics in areas where management or manipulations were applied would probably be altered. - Interseeding of only 200 acres would have no appreciable effect	- Areas burned by naturally- and human-ignited fires would subsequently support early successional vegetation communities. - Limitations on methods available for management and restoration could limit or preclude	- Interseeding of 20,000 acres of nonnative seedings could result in increases of native vegetation diversity and cover. - The inclusion of nonnative species may reduce the degree to which an increase in native plant species diversity and cover would	- Effects would be very similar to those under Alternative C.	- Vegetation cover would be increased. - The emphasis on vegetation biomass and species selection for commodity production would result in lower diversity of native species. - Establishment of new nonnative

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on vegetation in the context of wildlife habitat. - Mechanical methods of decreasing shrub biomass would generally have the effect of increasing the relative cover and biomass of herbaceous species.	the likelihood of achieving Goal 1, Objectives 2 and 3.	be realized. - Generally, the emphasis on use of native species for rehabilitation could result in higher species, community, and structural diversity. - Interseeding native species on 20,000 acres of nonnative seedings on the north and west side of Steens Mountain, would increase the diversity of rangeland vegetation. - Seeding of native species along with desired nonnative species would increase rangeland vegetation diversity. - Provisions for allowing natural processes and naturally-ignited wildland fire would also increase rangeland vegetation community and structural diversity.		seedings would reduce native species diversity, community diversity, and structural diversity.
NOXIOUS WEEDS (See Section 4.5.5 for the Full Discussion of Effects)				
- Integrated management on noxious weeds should effectively eliminate the smaller, more easily eradicated infestations. - Larger infestations could be contained given enough of the most effective tools. - Drought conditions may cause an increase in the number of new infestations and the growth rate of existing infestations.	- Public education could reduce the effects caused by noxious weed distribution. - Inventories would be increased, which could reduce the effects caused by noxious weeds if control efforts also increase. - The change of priority to treat high quality resource lands for noxious weeds may allow for the establishment and spread of noxious weeds in other parts of	- The effects would be the same as Alternative B.	- Public education would be expanded to include areas outside Harney County. - Coordination with local, county, state, and federal interests would help to reduce negative effects on resource values from noxious weed infestations. - Control of the introduction and proliferation of noxious weeds would be emphasized on disturbed areas.	- Integrated management would be applied for the control of noxious weeds the same as the Proposed RMP. - Inventories would be increased to detect new infestations that may have adverse effects on commodity reserves. - Control of introduction and proliferation of noxious weeds would be emphasized on disturbed areas.

Alternative A - No action. Continues present management.	**Alternative B -** Excludes commodity production and limits other uses; maximizes natural processes.	**Alternative C -** Emphasizes protection of natural values.	**Proposed RMP -** Balances cultural, economic, ecological, and social health in a manner that encourages cooperative management practices.	**Alternative E -** Emphasizes commodity production and public uses.
	the Planning Area.		- BMPs would be implemented to emphasize preventive measures to minimize weed spread.	- Noxious weed infestation would continue to affect vegetation resources, control would be emphasized to protect commodity resources.
FISH AND WILDLIFE (See Section 4.6 for the Full Discussion of Effects)				
- Single species oriented management would be emphasized in most habitats. - Opportunities would be identified and undertaken for improvement or restoration of other fish and wildlife habitat. - Seed drilling, aerial reseeding, or other methods could be used to reseed approximately 9,000 acres of deer winter range. - This management action would contribute to increased habitat suitability for wildlife adapted to natural rangeland conditions. - Forage for wildlife would be allocated at management objective levels. - Wildlife populations would be allowed to expand naturally or through limited transplants. - Wildlife could establish populations outside their historic range. - Transplants would be conducted by the ODFW in accordance with current species-specific management plans.	- Emphasis would be on managing self-sustaining native species. - Aerial reseeding would be used for approximately 9,000 acres of deer winter range. - Only sagebrush would be reseeded. - Opportunities would be identified and undertaken for improvement and restoration of fish and wildlife habitat. - Forage would be allocated for wildlife above management objective levels. - Wildlife populations would be allowed to expand naturally. - Some wildlife species could establish populations outside their historic range.	- Approximately 20,000 acres of nonnative seedings and all native vegetation with low vegetative species diversity in deer winter range would be interseeded to establish native plant species. - A variety of methods could be used to accomplish the interseeding, allowing the selection of the best method for a given location. - Wildlife habitat quality and quantity would be improved across a large expanse of the Planning Area and could contribute to increases in populations of some wildlife species. - Opportunities would be identified and undertaken to improve or restore fish and wildlife habitat. - Forage would be allocated for wildlife above management objective levels. - In coordination with the ODFW, wildlife populations would be allowed to expand naturally or	- 10,000 acres or more of nonnative seedings and most of the native vegetation with low vegetative species diversity in deer winter range would be interseeded to establish native plant species. This would improve forage productivity and availability. - To the extent that sagebrush were successfully reestablished, suitable habitat for wildlife would improve. - Opportunities for improvement and restoration of fish and wildlife habitat would be identified and implemented. - As with alternative A, forage for wildlife would be allocated at management objective levels. - Wildlife populations would be allowed to expand naturally or through limited transplants in coordination with the ODFW.	- 5,000 acres of nonnative seedings and some native vegetation with low species diversity in deer winter range would be interseeded to establish native and other desirable nonnative plant species. This action would improve forage productivity and availability for wildlife. - Minor effects to game species would occur where increased emphasis on desirable vegetation was compatible with forage that game species would use. The potential effects of this management action would be similar to those described for the Proposed RMP. - As with the Proposed RMP, opportunities to improve and restore fish and wildlife habitat would be identified and implemented. - In addition to fish and wildlife habitat, the improvements would also benefit livestock, and could thereby increase forage

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		through limited transplants.		competition between wildlife and livestock. - Forage for wildlife would be allocated at management objective levels. - Wildlife populations would be allowed to expand naturally or through limited transplants in coordination with the ODFW. - Forage allocations for wildlife would be increased concurrent with improved range conditions and other improvements.
SPECIAL STATUS SPECIES (See Section 4.7 for the Full Discussion of Effects)				
SPECIAL STATUS PLANTS (See Section 4.7.1 for the Full Discussion of Effects)				
- Special status plant species and habitat would be protected in order to prevent listing as threatened or endangered.	- Special status plant species and habitat would be protected in order to prevent listing as threatened or endangered. - Management emphasizing natural processes to determine rangeland conditions could benefit special status plant species in the short term. - In the long term, management could potentially increase effects such as habitat degradation for special interest plant species.	- Special status plant species and habitat would be protected in order to prevent listing as threatened or endangered.	- Special status plant species and habitat would be protected in order to prevent listing as threatened or endangered. - Emphasis on the development of new projects would cause more ground disturbance than Alternatives A, B, and C.	- Special status plant species and habitat would be protected in order to prevent listing as threatened or endangered. - The development of new projects would cause more ground disturbance than the Proposed RMP or Alternatives A, B, and C.
SPECIAL STATUS ANIMALS (See Section 4.7.2 for the Full Discussion of Effects)				
- Bat colonies would be protected. - Sagebrush habitat management would target sites most in need of structural improvement or most	- Effects to bats would be similar or provide greater protection than Alternative A. - To the extent that habitat for	- The effects of bat gate installation would be the same as those described for Alternative B. - The effects of Big sage brush	- Effects of management on bats would be similar to Alternatives B and C except specific crucial sites would be considered for	- The effects of bat gate installation would be the same as those described for Alternative A. - Big sagebrush would be

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likely to increase habitat suitability for sagebrush dependent special status species. - Sage-grouse management would result in better survival of fledglings by minimizing the effects of actions that could cause mortality, and would require other resources to be managed so that identified goals and objectives for sage-grouse would be met and long-term range conditions would improve. - Habitat improvements prior to reintroduction of Columbia sharp-tailed grouse, mountain quail, and other species would increase the likelihood of establishing successful self-sustaining populations. - Actions would maintain healthy viable herds of bighorn sheep populations. Poor quality habitat in historic bighorn sheep range would be improved, thereby enabling bighorn sheep that naturally expand into historic habitat to be more successful in establishing viable herds. - Domestic sheep and goats in native wild sheep habitats would be kept from mixing with wild sheep, thereby avoiding the chance of disease transmission. - Development of water sources	sage-grouse would be considered a significant resource value, fires would be suppressed in those areas. - Effects of sage-grouse management would be similar to Alternative A except that the reliance on passive methods could limit the ability to achieve the Management Guideline's goals. - No identification of implementation of habitat would be conducted prior to reintroduction of Columbia sharp-tailed grouse, mountain quail, and other species. This would reduce the chances of establishing successful self-sustaining populations of these special status species. - Natural processes would be allowed to determine the natural range expansion of bighorn sheep populations. Poor quality habitat in historic bighorn sheep range would be improved. - No additional introductions of bighorn sheep and/or transplants would be conducted into identified historic range. - Development of water sources would increase the likelihood of viable herds in historic habitat.	habitat management would be similar to those described for Alternative A. - The effects of management actions for the reintroduction of Columbia sharp-tailed grouse, mountain quail, and other species would be similar to those described for Alternative A. - Effects of some management actions for bighorn sheep would be similar to those described for Alternative A. No habitat improvements in historic bighorn range would be conducted. This could reduce the likelihood of establishing viable herds in these transplant and reintroduction locations as well as the areas bighorn sheep naturally expand. - Domestic sheep and goats in native wild sheep habitats would be kept from mixing with wild sheep, thereby avoiding the chance of disease transmission.	withdrawal from mineral entry. - Big sagebrush habitat management would be coordinated across agency boundaries, which would increase the likelihood of successfully accomplishing goals and objectives relating to sage-grouse and other special status species. - Sage-grouse management would result in better survival of fledglings by minimizing the effects of actions that could cause mortality, and would require other resources and uses to be managed so that identified goals and objectives for sage-grouse would be met, improving long-term range conditions. - The effects of management actions for the reintroduction of Columbia sharp-tailed grouse, mountain quail, and other species would be similar to those described for Alternative A. - The effects of management actions associated with transplants, reintroductions, and natural expansion of bighorn sheep populations; habitat improvements in historic range; and trapping by the ODFW when bighorn numbers exceed management objectives, would be the same as for Alternative A.	reestablished where economically important special status species would be present. This could indirectly create habitat conditions suitable for other special status species. - Sage-grouse management would occur to the extent practicable. - Habitat improvements prior to reintroductions of Columbia sharp-tailed grouse, mountain quail, and other species would increase the likelihood of establishing successful, self-sustaining populations of these special status species. Introductions would not occur in areas where economic effects would be demonstrated. This could potentially limit the number of suitable locations for reintroductions. - The effects of management actions associated with bighorn sheep transplants, reintroductions, and natural expansion of populations; habitat improvements in historic range; and trapping by the ODFW, when they determine that excess animals were available, would be the same as for Alternative A. - Domestic sheep and goats in native wild sheep habitats would

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would increase the likelihood of viable bighorn sheep herds becoming established in historic habitat.			- Domestic sheep and goats in native wild sheep habitats would be kept from mixing with wild sheep, thereby avoiding the chance of disease transmission. - The effects from the development of water guzzlers would be similar to those described for Alternative A.	be kept from mixing with wild sheep, thereby avoiding the chance of disease transmission. - The effects from the development of water guzzlers would be similar to those described for Alternative A.
SPECIAL STATUS FISH (See Section 4.7.3 for the Full Discussion of Effects)				
- Special status species habitat would be managed for conservation or recovery. - Additional management actions may be developed and implemented through activity plans to promote habitat conditions in support of special status fish.	- Except for critical habitat, natural processes would be allowed to define special status species habitat. This management may not promote conservation or recovery. - Improvement of habitat conditions may occur, although improvements may be slower than in alternatives where active restoration occurs. - The Borax Lake chub would likely be eligible for downlisting to "threatened" or delisted under the ESA upon implementation of permanent protection of critical habitat.	- As in Alternative A, special status species habitat would be managed for conservation or recovery. - Implementation of active or passive management to promote maintenance or improvement of habitat would contribute to conservation of special status species. - As in Alternative B, the Borax Lake chub would likely be eligible for downlisting to "threatened" or delisted under the ESA.	- As in Alternative A, special status species' habitat would be managed for conservation or recovery. - As in Alternative C, implementation of active or passive management to promote maintenance or improvement of habitat would contribute to conservation of special status species. - As in Alternatives B and C, the Borax Lake chub would likely be eligible for downlisting to "threatened" or delisted under the ESA.	- Special status species habitat would be managed with an emphasis on game species. This would have similar effects to Alternative A.

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REDBAND TROUT RESERVE (See Section 4.7.4 for the Full Discussion of Effects)				
- The boundaries of the RTR would be delineated independent of this RMP through coordination among the BLM, ODFW and SMAC. - Riparian and aquatic habitats would be managed to maintain or progress toward PFC, water quality standards, and fish habitat values through existing management. Management for PFC in the context of wilderness and WSR designation would allow for ecological progression of riparian vegetation that would promote increased fish habitat values such as cover and instream complexity. - Managing the RTR in accordance with the Wilderness Act and the WSR Act may preclude some active restoration activities. - Complete removal of the Page Springs gauging weir would increase redband trout migration opportunity. However, this would increase opportunity for colonization by nonnative competing or predatory fish species.	- The RTR would consist of public lands on the Donner und Blitzen River and its tributaries upstream of the confluence with Fish Creek to the longitudinal extent of current and future redband trout distribution. - Riparian and aquatic habitats would be managed for an advanced ecological status, promoting maintenance or improvement of fish habitat values such as cover and instream complexity. - As in all Alternatives, the RTR would be managed in accordance with the Wilderness Act and the WSR Act with the same effects. - Coordinated assessment and implementation to modify (or remove) the Page Springs gauging weir would improve redband trout migration while limiting potential colonization by nonnative competing or predatory fish species.	- The boundaries of the RTR would be the same as in Alternative B. - As in Alternative B, riparian and aquatic habitats would be managed for an advanced ecological status, with the same effects. - As in all Alternatives, the RTR would be managed in accordance with the Wilderness Act and the WSR Act, with the same effects. - As in Alternative B, fish migration associated with the Page Springs gauging weir would be addresseed, with the same effects.	- The boundaries of the RTR would be the same as in Alternatives B and C. - As in Alternatives Band C, riparian and aquatic habitats would be managed for and advanced ecological status, with the same effects. - As in all Alternatives, the RTR would be managed in accordance with the Wilderness Act and the WSR Act, with the same effects. - As in Alternatives B and C, fish migration associated with the Page Springs gauging weir would be addressed, with the same effects.	- The RTR would consist of public lands on the mainstem Donner und Blitzen River upstream of the confluence with Fish Creek, a lesser extent of the redband trout distribution than the Proposed RMP and Alternatives B and C. - Riparian and aquatic habitats would be managed for a diversity of fish habitat values, with the same effects as the other Alternatives. - As in all Alternatives, the RTR would be managed in accordance with the Wilderness Act and the WSR Act, with the same effects. - As in the Proposed RMP and Alternatives B and C, fish migration associated with the Page Springs gauging weir would be addressed, with the same effects.

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PALEONTOLOGICAL RESOURCES (See Section 4.8 for the Full Discussion of Effects)				
- A predictive model to locate paleontological localities would not be created. - The associated sample inventory would not be implemented. - Research could include surface collection of fossils, cumulative surface ground disturbance of up to 200 square meters, and deeper excavation blocks of up to 100 square meters. - On-site and off-site interpretive facilities could be constructed. - Result in construction of road pull-outs, kiosks or sign bases, and placement of interpretive signs at various locations in the Planning Area.	- A predictive model would be implemented in areas of intensive recreation use. - The associated sample inventory would be implemented only in these target areas. - Research could include surface collection of fossils, cumulative surface ground disturbance of up to 20 square meters, and deeper excavation blocks of up to ten square meters. - Only off-site interpretative displays and other products would be created.	- A predictive model would be created for the entire Planning Area. - A sample inventory would be implemented. - Research could include surface collection of fossils, cumulative surface ground disturbance of up to 100 square meters, and deeper excavation blocks of up to 50 square meters. - Off-site interpretive facilities would be constructed and self-guided walking tour brochures would be created. - Result in construction of road pullouts, kiosks or sign bases, and placement of interpretive signs at various locations in the Planning Area.	- A predictive model would be created for the entire Planning Area. - A sample inventory would be implemented. - Research could include surface collection of fossils, cumulative surface ground disturbance of up to 200 square meters, and deeper excavation blocks of up to 100 square meters. - Off and on-site interpretive facilities would be constructed and self-guided walking tour brochures would be created. - Result in construction of road pullouts, kiosks or sign bases, and placement of interpretive signs at various locations in the Planning Area.	- A predictive model would be created for the entire Planning Area. - A sample inventory would be implemented. - Sample inventories would be increased. - Research could include surface collection of fossils, cumulative surface ground disturbance of greater than 400 square meters, and deeper excavation blocks of greater than 200 square meters to support increased natural history tourism. - On-site and off-site interpretive facilities would be constructed and self-guided walking tour brochures would be created. - Result in construction of road pullouts, kiosks or sign bases, and placement of interpretive signs at various locations in the Planning Area.

Alternative A - No action. Continues present management.	**Alternative B -** Excludes commodity production and limits other uses; maximizes natural processes.	**Alternative C -** Emphasizes protection of natural values.	**Proposed RMP -** Balances cultural, economic, ecological, and social health in a manner that encourages cooperative management practices.	**Alternative E -** Emphasizes commodity production and public uses.
CULTURAL RESOURCES (See Section 4.9 for the Full Discussion of Effects)				
- A predictive model to locate significant sites would be created. - Proactive inventories would occur at a rate of no less than 500 acres per year. - Research could consist of numerous 50 by 50 centimeter test excavations, excavation blocks of up to 100 square meters in extent, and backhoe trenches measuring up to 20 meters long and four meters deep. - No physical protection measures other than a caretaker and restricted access at Riddle Brothers Ranch National Historic District would be implemented. - Law enforcement surveillance and monitoring of certain significant sites and within wildland fire areas would occur. - A land trade to acquire a private portion of a regionally significant site in Catlow Valley is in the initial stages. - Stabilization, restoration, reconstruction and maintenance of structures within the Riddle Brothers Ranch National Historic District, and inventory and assessment of other historic structures would occur. - On-site and off-site interpretation could be	- A predictive model to locate significant sites would be limited to recreation use areas in the Planning Area. - Proactive inventories would occur at a rate of no less than 500 acres per year. - The type/size of research disturbance would be similar to Alternative A; however, it would be implemented on a limited basis. - No physical protection measures would be implemented at significant sites. - Law enforcement surveillance and monitoring certain significant sites and within wildland fire areas would occur. - Land acquisitions to bring significant sites into public ownership would be pursued. - Maintenance of structures within the Riddle Brothers Ranch National Historic District, and inventory and assessment of other historic structures would occur. - On-site interpretation and interpretive facilities construction would not be implemented. Only off-site interpretive displays would be created.	- A predictive model to locate significant sites would be created. - A sample inventory to test the model and locate sites would be implemented. - Proactive inventories would occur at a rate of no less than 500 acres per year. - The type/size of research disturbance would be similar to Alternative A. This type of research would be focused on significant cultural sites where other resource conflicts occur. - Physical protection measures would be implemented at significant sites. - Law enforcement surveillance and monitoring certain significant sites and within wildland fire areas would occur. - Land acquisitions to bring significant sites into public ownership would be pursued. - Stabilization, restoration, reconstruction and maintenance of structures within the Riddle Brothers Ranch National Historic District, and inventory and assessment of other historic structures would occur. - On-site and off-site interpretation could be implemented and could result in	- A predictive model to locate significant sites would be implemented throughout the Planning Area. - A sample inventory to test the model and locate sites would be implemented. - Proactive inventory would occur at a rate of no less than 500 acres per year. - The type/size of research disturbance would be similar to Alternative A. This type of research would be focused on significant cultural sites where other resource conflicts occur. - Physical protection measures would be implemented at significant sites. - Law enforcement surveillance and monitoring certain significant sites and within wildland fire areas would occur. - Land acquisitions to bring significant sites into public ownership would be pursued. - Stabilization, restoration, reconstruction and maintenance of structures within the Riddle Brothers Ranch National Historic District, and inventory and assessment of other historic structures would occur. - On-site and off-site interpretation	- A predictive model would be implemented the same as under the Proposed RMP. - A sample inventory would be implemented the same as under the Proposed RMP. - Sample inventory acreage would be increased to account for increased commodity use. - The type/size of research disturbance would be similar to Alternative A. This type of research would be increased at significant cultural sites in order to support increased heritage tourism. - Physical protection measures would be implemented at significant sites. - Law enforcement surveillance and monitoring of certain significant sites and within wildland fire areas would occur. - Land acquisitions to bring significant sites into public ownership would not be pursued. - Stabilization, restoration, reconstruction and maintenance of structures within the Riddle Brothers Ranch National Historic District, and inventory and assessment of other historic structures would occur. - On-site and off-site

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implemented and could result in construction of road pullouts, kiosks or sign bases, and placement of interpretive signs at various locations in the Planning Area.		construction of road pullouts, kiosks or sign bases and placement of interpretive signs at various locations in the Planning Area.	could be implemented and could result in the same effects as Alternative C.	interpretation would be increased under this alternative and could result in construction of road pullouts, kiosks or sign bases, and placement of interpretive signs at various locations in the Planning Area.
NATIVE AMERICAN TRADITIONAL PRACTICES (See Section 4.10 for the Full Discussion of Effects)				
- The BLM would continue active consultation/coordination with the Burns Paiute Tribe and other tribes. - Traditional Cultural Properties would be nominated or found eligible for inclusion in the National Register of Historic Places and known burial sites would be monitored and protected. - Plants of cultural, traditional, and economic importance would be inventoried. - The Burns Paiute Tribe and other tribes would be consulted on vegetative management projects.	- Same as Alternative A except the amount of active consultation/coordination and inventory could decrease because of decreased commodity use.	- Same as Alternative A.	- Same as Alternative A.	- Same as Alternative A except the amount of active consultation/coordination and inventory would increase because of increased commodity use.

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VISUAL RESOURCES (See Section 4.11 for the Full Discussion of Effects)				
Planning Area - Management actions could affect existing visual resources, depending on the VRM class. - Landscapes in WSAs, wild WSRs, wilderness, and the Steens Mountain ACEC would be preserved and protected. - Moderate and major landscape modifications would be allowed in some areas.	*Planning Area* - The landscape would appear more natural as the signs of management activities become less obvious. - Landscapes in WSAs, wild WSRs, and wilderness would be preserved and protected. - Management actions would be allowed if VRM Class II objectives would be met. - Moderate and major landscape modifications would not be allowed.	*Planning Area* - Landscapes in WSAs, wild WSRs, wilderness, and the Steens Mountain ACEC would be preserved and protected. - Visual resources and naturalness of the four parcels found to have wilderness characteristics would be protected. - The existing landscape character would be retained in some areas, while moderate changes would be allowed in others. - Major landscape modifications would not be allowed. *CMPA* - Moderate landscape changes would be allowed in the WJMA. - In the remainder of the CMPA the existing landscape would be retained. Only small, nonevident management changes would be allowed.	*Planning Area* - The existing landscape character would be retained in some areas, while moderate changes would be allowed in others. - Landscapes in WSAs, wild WSRs, and wilderness would be preserved and protected. - Major landscape modifications would be allowed in VRM Class IV areas. *CMPA* - Moderate landscape changes would be allowed in the WJMA within one half mile of the Steens Loop Road. - Major landscape modifications would be allowed in the remainder of the WJMA. *AMU* - A variety of management actions would be allowed that could or would result in form, line, color, or texture contrasts.	*Planning Area* - Management actions that could or would affect existing visual resources would be allowed. - Landscapes in WSAs, wild WSRs, and wilderness would be preserved and protected. - Moderate and major landscape modifications would be allowed in some areas. *CMPA* - Major modification of the landscape would be allowed in the WJMA. *AMU* - The existing landscape character would be retained in the Trout Creek Mountains and around Denio Creek.

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SOCIAL AND ECONOMIC VALUES (See Section 4.12 for the Full Discussion of Effects)				
- Contracts for services and sale of products would continue to be available to local residents as need and conditions permit. - Public and private partnerships to achieve shared economic objectives would continue.	- Commodity production on public land within the Planning Area curtailed. - Most social and economic values would cease to be viable. - Tourism and recreation dollars targeted for local businesses would be minimal. - Potential loss of revenues from mining, energy, agricultural production, and disposal of lands; decline in revenues from recreation and tourism. - Local contracts and employment would decline.	- Commodity use allowed at levels maintained through time and that contribute to the stability of the local livestock and mining industries. - Restrictions on commodity production when natural resources threatened. - Alternative attempts to maintain stability in local economy; however, it would still have effect on commodity production, realty use authorizations, land tenure, renewable energy, and recreation, thereby resulting in a decline of revenues. - Emphasis on targeting local contracts would benefit local economy.	- Sustainable commodity use and resource protection that promotes tourism encouraged. - Emphasis placed on local cooperative, collaborative processes and cooperative agreements involving services and products available locally. - Economy would be stable and result in long-term economic viability for regional populace. - Would be effects on the natural environment such as soils, vegetation, water resources, and wildlife. - Some effects to commodity production, realty use authorizations, land tenure, and renewable energy, which may benefit the local economy.	- Commodity production, local contracts, and tourism emphasized. - This alternative least restrictive on commodity uses and would have effects on the natural environment such as soils, vegetation, water resources, and wildlife. - Minimal limiting effects on commodity production, land authorizations, land tenure, renewable energy, and recreation. - Contracts targeted for local businesses and individuals to the extent possible. - Tourism and recreation would be managed to bring in maximum dollars. - Industries that would increase the regional economy would be courted.
ENERGY AND MINERALS (See Section 4.13 for the Full Discussion of Effects)				
- All 28 percent of the Planning Area that is available for designation as open or closed would be open to locatable and leasable mineral exploration and development and open to consideration for salable mineral materials development on a case-by-case basis. - 72 percent of the Planning Area	- The entire Planning Area would be closed to mineral exploration and development except where required by law or where essential to protect human safety.	- 13 percent of the Planning Area would be open to locatable and leasable mineral exploration and development and open to consideration for salable mineral materials development on a case-by-case basis. Areas open to leasing would be open under standard stipulations. - 15 percent of the Planning Area	- 27 percent of the Planning Area would be open to locatable mineral exploration and development and 1 percent would be closed. - 28 percent of the Planning Area would be open to leasable mineral exploration and development with no acres closed, 9,355 acres open with NSO, 241,683 acres open with seasonal or other special	- Minerals management would be conducted the same as under Alternative A; therefore, the effects would be the same.

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is Not Available due to Congressional withdrawal or the WSA IMP, including the nonimpairment criteria.		would be closed to locatable, leasable, and saleable mineral exploration and development. - 72 percent of the Planning Area is Not Available due to Congressional withdrawal or the WSA IMP, including the nonimpairment criteria.	stipulations or both, and 216,793 acres open with standard stipulations. - 27 percent of the Planning Area would be open to consideration for salable mineral materials developmenton a case-by-case basis and 1 percent would be closed. - 72 percent of the Planning Area is Not Available due to Congressional withdrawal or the WSA IMP, including the nonimpairment criteria.	
WILD HORSES AND BURROS (See Section 4.14 for the Full Discussion of Effects)				
- The Alvord-Tule Springs HMA would not be combined with the Coyote Lake HMA. The two HMAs would continue to be managed separately. - The current AMLs would be retained for all HMAs. - Forage needs of wild horses would be met under current management strategies. - Drought might require temporary adjustments in horse numbers in order to meet other resource objectives. - If vegetation management objectives would not be met, permanent adjustments in AMLs might be necessary. - As wild horses increase in	- Combining the current 343,201 acre Alvord-Tule Springs HMA with the Coyote Lake HMA would result in the 588,420 acre newly named Alvord-Tule Springs-Coyote Lake HMA. - The Kiger HMA would be reduced from its current 38,359 acres to 26,873 acres. The South Steens HMA would be reduced from its current 127,838 acres to 102,342 acres. - Kiger Herd Area would be created. - An adjustment in the South Steens Herd Area would be necessary. The existing Herd Area would be increased to reflect the decreased size of the HMA.	- Effects would be the same as those described for Alternative B.	- The effect of boundary and acreage adjustments for Objective 1 would be the same as for Alternative B, with the following exception: the South Steens HMA would be reduced in acreage from its current 127,838 acres to 126,732 acres. - Kiger Herd Area would be created, depicting the loss of public lands resulting from the Steens land exchanges. - An adjustment in the South Steens Herd Area would be necessary in response to changes in the HMA. The existing Herd Area would be increased. - Effects of all other management actions would be the same as	- The effect of boundary and acreage adjustments for Objective 1 would be the same as those described for Alternative B, with the following exception: The South Steens HMA would be increased in acreage from its current 127,838 acres to 182,485 acres. - Effects of all other management actions would be the same as Alternative B. - Since management emphasizes commodity production, differences in preference mean that any excess forage could be allocated to livestock and/or economically important wildlife rather than to wild horses.

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number above AMLs with no corresponding reduction in livestock numbers, key areas can become overgrazed. - Horses would to be gathered every three to four years. - Current public lands water sources would be maintained. - Legal access to critical private water sources currently used by wild horses, other than those identified in existing herd management plans, would not be pursued.	- The current AMLs and wild horse forage allocations would be retained in all HMAs. - The effects of any adjustments in AML on gathering frequency would be analyzed on a case-by-case basis. - The decreased size of the Kiger and South Steens HMAs would warrant consideration of downward adjustments in the AMLs and forage allocations. - The addition of herd health as one of the measures to consider before initiating herd gathering would provide greater management flexibility than actions provided by alternative A. - Besides gathering, other approved methods of population control would be allowed. - The management action to "normally" reduce herd numbers to the low end of the AML would provide more options for herd management than would occur under alternative A. - Gathering excess horses would continue, but the time period between gatherings could potentially be increased. - The option to modify the male/female sex ratio from 50:50 to 60:40 could increase the time between gatherings due to a		Alternative B. However, the management emphasis on balanced uses and cooperative management practices means that wild horses would not be given preference over other uses for increasing forage allocations, and thus AMLs. Horses might need to be gathered more often in order to meet the objectives for other resources.	- Vegetation treatments would benefit livestock and wildlife more than wild horses. - Competition for available forage would be increased. - Permanent adjustments in AMLs may be necessary, as more emphasis would be placed on forage use by livestock. - The effects of Objective 5 would be the same as those for Alternative B with the following exception. Management actions to acquire legal access to critical private water sources would not be conducted.

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	slower annual population growth rate than the average of 20 percent. - Allowing for the introduction of horses from outside the HMA could help to improve herd health by increasing genome diversity.			
GRAZING MANAGEMENT (See Section 4.15 for the Full Discussion of Effects)				
- The authorization of TNR grazing use during years of favorable growing conditions would provide additional forage for use by livestock.	- Grazing use would be discontinued in the Planning Area. This would preclude the achievement of Objective 1.	- Grazing use would be reduced in the CMPA and AMU to "minimal sustainable," a level lower than Alternative A, while still allowing livestock grazing operations to continue and be economically viable. - TNR grazing use would not be authorized. - Forage quality could decline in nonnative seedings in areas where livestock utilization is measured at 40 percent or less. - Grazing use would not exceed the amount of permitted use in any allotment within the Planning Area.	- Management actions relating to the application of livestock management practices, administrative solutions, and rangeland projects would provide more flexibility in the use of available grazing resources than under Alternatives A, B, and C, and would therefore be expected to increase the utilization of available grazing resources.	- The amount of livestock grazing on public land would be maximized, creating more revenue from grazing fees and more income for grazing permittees. - More range improvements would be constructed, creating more jobs for contractors.

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WILDLAND FIRE MANAGEMENT (See Section 4.16 for the Full Discussion of Effects)				
- Suppression of all wildfires would maximize short-term public safety, as well as protection of private lands and areas with important resource values. - Short-term firefighter safety would be increased. - Areas burned by wildfire would be minimized. - Long-term firefighter and public safety could be compromised. - Continued suppression of all wildfires would continue to allow accumulation of fuels throughout the Planning Area. - Wildfires that escape initial attack would have a greater potential to burn larger areas at high intensities, causing severe alterations to plant and animal communities in and adjacent to the burned area. - Average fire size in the drier Wyoming big sagebrush plant communities would decrease from current levels. - Fuels treatments may have little effect on the average fire size in the higher elevation plant communities because of the aggressive suppression action. Prescribed fire activity in these plant communities would reintroduce fire into the system,	- Only fires that directly threaten firefighter or public safety, private property or areas of significant resource values would be suppressed. Other fires would be evaluated for resource benefits and managed accordingly. - Fire rehabilitation actions could be greater because of the reduced suppression activity and potentially larger fire size. - Reliance on native plant species would increase the cost of rehabilitation treatments. - The rate of recovery in areas where native seedings would be used may be longer compared to desirable introduced perennial plants. - Prioritization of suppression efforts would help assure that firefighting resources would be properly and effectively assigned to fires. - Development of a plan to manage wildfires for resource benefits would also help to prioritize firefighting efforts. - Partnerships and cooperative agreements with adjacent private and public land owners would be sought to more effectively manage wildland fires for resource benefits. Cooperation with	- Effects would be the same as Alternative A in the WUI. - Without mechanical fuels treatments or prescribed fire, fuels would continue to accumulate in the WUI. Fuels accumulation within this area would increase the risk to human life and private property. - Designation of the WUI would occur in the same manner as in Alternative B. - Direct effects of fire management activity outside of the WUI would be the same as alternative B. - Techniques used to stabilize and rehabilitate areas following wildfire would be the same as Alternative A. Only native plant species would be utilized in the rehabilitation efforts. The effects of using native species would be the same as Alternative B with some possible exceptions. Mechanical seeding equipment may allow for better establishment and survival of seeded species in some cases. Germination and growth following drilling may be better than by broadcast methods.	- This Alternative would exhibit a combination of effects from Alternatives A, B, C, and E. Firefighter and public safety would be the highest priority in fire management decision making. However, fire would be reintroduced into the ecosystem through prescribed fire and wildland fire use for resource benefit. Fires that do not pose a significant risk to firefighter safety, public safety, or private land would be evaluated for wildland fire use. - Areas burned by wildfires would be evaluated for the need for rehabilitation. The greatest priority in the fire rehabilitation projects would be to protect the soil resources. - Rehabilitation projects would occur on sites with low potential for natural recovery. - Desirable introduced plant communities would be established following wildfire in areas dominated by undesirable introduced plants (e.g., cheatgrass) or in areas where the potential for recovery of native plants, residual or seeded, would be low. - Cooperative projects would be developed with adjacent public	- The effects of this alternative would be similar to those under Alternative A, except that greater emphasis would be directed toward contract firefighting resources to support suppression actions and local economics.

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and overall acreage burned would increase over current levels. - Fire management under this alternative would have little direct effect on undesirable introduced plant species, especially cheatgrass. - The emphasis on suppression would help to reduce the area burned in locations dominated by introduced annuals. However, the emphasis on suppression may lead to an increase in the amount of ground disturbed through suppression actions. - Equipment may potentially transport undesirable plant seeds to these disturbed areas, increasing the risk of weed establishment. - Fuels reduction treatments would reduce the influence of woody vegetation on the associated herbaceous understory. - Herbaceous plant cover and density would increase after fuels treatment.	neighbors would increase the likelihood of utilizing natural barriers and reduce the need for large scale suppression efforts if the fire threatens the management area boundary. - Woody vegetation may increase at the expense of associated understory plants and modify the habitat of many wildlife species. As woody vegetation dominates the sites, understory species may be lost from the plant community or suppressed to the point that the plants could not recover following fire. The dominance of woody vegetation also would increase the intensity of the fire, making suppression difficult if action must be taken.		and private land owners. These projects would increase the efficiency of fuels treatments and work to treat fuels on a landscape scale instead of by geopolitical boundaries. - Cost of fire suppression should be lowest in this alternative. - The number of acres burned or converted to a herbaceous plant dominated community would be less than in Alternatives B and C, but more than in Alternative A.	
LANDS AND REALTY (See Section 4.17 for the Full Discussion of Effects)				
Planning Area - Land tenure adjustment would be limited to land identified for sale or exchange in the existing land use plans which have not already been conveyed.	*Planning Area* - All lands would be protected from commodity-producing activities likely to occur if conveyed out of public ownership. - There would be no exchanges,	*Planning Area* - All lands in Zone 1, 1A, and 1B would be retained in public ownership and would be protected from disposal, precluding commodity-producing activities.	*Planning Area* - Lands in Zone 1A would be protected from any form of disposal. - There would be flexibility in Zone 1 to exchange public lands	*Planning Area* - Maximized disposal opportunities may result in the potential for loss of some lands with natural or public values, or conflicts with existing uses and

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- Lands in Zone 1 containing important public values would be protected from disposal, but there would be no flexibility in this zone to exchange or sell public lands; therefore, opportunity and ability would be limited for acquisition of lands with high public values and to resolve long-term inadvertent and unauthorized uses, survey errors or hiatuses. - Land sales and other disposals in Zone 3 would be considered only after the possibilities for exchange have been exhausted, further limiting disposal opportunity and expediency. - Lands may be acquired in any zone on a case-by-case basis. This policy has the potential of wasting valuable acquisition funding and effort in areas containing little public land and resources, as there would be no focus or priority for acquisition. - The historical trend of a net loss of tax exempt public lands in Harney County in favor of taxable private ownership (See Cumulative Impacts) would be expected to continue into the future. This trend would be expected to diminish somewhat as public lands would be disposed of	thereby limiting the opportunity and ability to acquire lands with natural values. - With no zones to provide basic direction, special resource values would be the only factor focusing and prioritizing acquisition. - There would be a net gain of public lands in the Planning Area. resulting in a loss of county tax revenues from private land acquisition. More conversion and development of existing private lands may be expected, resulting in higher assessed values on those lands. - Overall, there would be some consolidation of public lands by fee purchases, but no such opportunity for private lands due to the prohibition on disposals and the inflexibility of this alternative. - The protection of natural values places a prohibition on land disposal actions, commodity withdrawals, and realty use authorizations; therefore, the opportunity to abate an unauthorized use by these means or to provide lands for community expansion and public purposes would not be available. - Implementation of this alternative would not meet management goal objectives	- There would be no flexibility in these zones to exchange or sell public lands, thereby limiting the opportunity and ability to acquire lands with important natural values and to resolve long-term, inadvertent unauthorized uses, survey errors, or hiatuses, or to provide lands for community expansion and public purposes. Disposals opportunities may result in loss of some lands with natural or public values. - Acquisition of less than fee interests would be further focused to Zones 1, 1A, and 1B by prohibition of less than fee acquisitions in Zones 2 and 3. - Most known special resource values would be included in the retention zones (Zone 1, 1A and 1B). - Large blocks of public lands without special values were also zoned for retention (Zone 1). Thus, without flexibility, Zones 1 and 1A provide absolute constraints on land disposal actions. - Constraints on land exchanges by other resource values would be somewhat less in Zone 1B where flexibility to exchange lands would be provided by the Steens Act.	for a specific set of public resource values. - More lands would be available for exchanges in Zones 2 and 3, providing additional opportunity for exchanges outside the CMPA. Additional disposal flexibility and opportunity may result in losses of some lands with natural or public values. - Restricting R&PP disposals in Zone 2A to ten acres per transaction will conserve limited public lands in this zone while still accommodating essential community facilities such as small schools, fire stations, and community halls. This acreage restriction may also reduce the possibility of development of R&PP conveyed lands for purposes not authorized by the R&PP Act. - Most known special resource values would be included in the retention zones (Zones 1, 1A, and 1B). The constraints of special resource values in Zone 1 and 1B would be relaxed by the flexibility included in this alternative. - In the case of exchanges, special resource values may be vulnerable to disposal in most zones, but would be weighed against the resource values to be gained in the	values. - In the case of exchanges, special resource values may be vulnerable to disposal in most zones, but would be weighed against the commodity-producing values to be gained in the exchange. - Acquisition opportunities would be focused only in Zones 1, 1A, and 1B and only by exchange. - Although relative acreages in Zones 1, 1A, and 1B would generally remain constant, there would be the potential for an overall net loss of public lands in the Planning Area due to liberalized disposal possibilities with a corresponding increase in county the tax base and conversion of lands to commodity production resulting in increased tax revenues. - Overall, there would be a high opportunity for land disposal, consolidation of private lands, and facilitating of commodity production. - Lands containing public values could be lost and some areas of public lands could potentially be fragmented. - Designated avoidance/exclusion zones would be limited to key special areas under this

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over time; thus, fewer lands and opportunities would be available. The overall effect would be a slight net loss of public lands in the Planning Area over the life of the plan, though not as much as during the last 20 years, resulting in a corresponding increase in county tax revenues. Some of these conveyed public lands would be converted to alfalfa, crested wheatgrass, or other development that would not have occurred under public ownership resulting in a higher assessed value on the land, further improving county tax revenues. - Most known special resource values would be included in the retention zone (Zone 1), and would therefore be protected from disposal actions. - In the case of exchanges, special resource values in these zones may be vulnerable to disposal, but would be weighed against the resource values to be gained in the exchange. - The long-term effects of corridor designation would be the centralizing of facilities, which would confine surface and visual disturbance, as well as other effects, to existing corridors and ROWs; however, this could make	relative to ROWs and realty uses. - The most likely effect of this alternative would be an increase in unauthorized use and illegal activities because the public would be unable to utilize public lands through legal means. Without some level of control, these uses could potentially damage sensitive resource values. - All unauthorized uses would be terminated and none would be authorized. No disposals would be made to accommodate any uses. Therefore, no flexibility would be provided for options to resolve situations. - Facilities and structures would be removed, but restoration of lands would otherwise be by natural processes unless resource degradation necessitates active restoration. This may result in slow restoration of the lands with possible resource degradation in some areas. In most cases, however, natural values would be promoted by this alternative. *AMU* - Disallowing leasing and reopening of the Fields airstrip may force aviators to land in unsafe, undeveloped areas, thereby causing new resource	- In the case of exchanges, special resource values may be vulnerable to disposal in some zones, but would be weighed against the resource values to be gained in the exchange. - There would be a slight net gain of public lands in the Planning Area with a corresponding loss in county tax revenues, since private lands and values acquired would exceed the values of public lands being disposed. - Overall, there would be some opportunity for consolidation of both public and private lands, although somewhat limited by the availability of disposal lands and inflexibility of this alternative. - Generally, areas where the most demand exists for this type of authorization (i.e., areas of existing human influences and activity) would remain open or would be in avoidance areas where authorizations would be possible but would be heavily mitigated if alternative locations were not available. - Generally, the primary effect of this alternative would be to allow basic infrastructure and necessities such as residential roads and driveways, a rural airstrip, utility distribution	exchange. - Acquisition effort and funding would be focused primarily at Zones 1, 1A, and 1B. - Acquisition of less than fee interests would be further focused to Zones 1A and 1B by prohibition of less than fee acquisitions in Zones 1, 2, and 3. - Generally, over the long term there would be no expected change in the ratio of public lands to private lands in the Planning Area due to a balanced variety of land tenure actions including both acquisitions and disposals. - Due to additional public land disposals in neighboring planning areas, an overall net loss of public lands in Harney County would continue consistent with the historical trend. Disposal of public lands, some of which would be converted to commodity production under private ownership, should result in higher assessed values on those lands. For these reasons, county tax revenues would be expected to increase. - Overall, there would be balanced opportunity for consolidation of both public and private lands while protecting, acquiring, and promoting important public values. - Generally, the primary effect of	alternative, which provides fewer constraints to realty land use activity. - The emphasis on access for commodity production would allow for management, extraction, or use of commodity resources. - Opportunities to provide access to public land with high public resource values would be forgone. - This alternative has the potential to affect resource values and promote trespassing. - Generally, the primary effect of this alternative would be that most ROWs, realty land uses, and renewable energy development would be allowable and accepted, while only the most critical sensitive resources and areas would be protected and in some cases affected by this type of development. Large scale projects and activities such as major transmission lines, energy development, and military maneuvers would not only be possible, but encouraged outside of corridors and avoidance and exclusion areas. *AMU* - Corridor designations would be

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critical energy and communications facilities more vulnerable to destruction through terrorist activities or natural disasters. - Implementation of this alternative would promote access for BLM administrative purposes, but efforts to secure public access would be limited. - No prioritization or identification of access needs would be provided in existing planning documents. Therefore, little focus or direction would be provided to proactively acquire access. - This alternative provides flexibility in most cases to terminate or authorize the use, except for conveyances of land, to resolve an unauthorized use.	damage and creating safety hazards such as landings on public roads and highways. Without a legal airstrip, fewer aircraft may be in the area, thereby minimizing noise and other effects. Rejecting the lease proposal would also minimize any potential liabilities to the United States associated with operation and maintenance of the airstrip.	service, filming, and short-term storage sites, while limiting large scale projects and activities outside of corridors such as major transmission lines, energy development, and military maneuvers would be limited. - Demand for realty use authorizations would decline under this alternative since commodity production such as mining, tourism, and other development. - The actions and effects of this alternative regarding legal access acquisition would be to actively reclaim closed roads, thereby speeding recovery and stabilization of the land affected by road disturbances. - Where an exchange conforms with the land tenure provisions of this alternative a limited option exists to resolve agricultural or occupancy trespass. This option, in limited circumstances, could promote acquisition and protection of natural values. However, sensitive resource values could possibly be lost in such an exchange. *AMU* - The unoccupied PP&L corridor would not be designated. This	this alternative would be that many ROWs, realty land uses, and renewable energy projects would be allowable and accepted in open areas while protecting sensitive resources and areas where they exist. Large scale projects and activities such as major transmission lines, energy development, and military maneuvers would be possible outside of corridors and avoidance and exclusion areas, but may be limited or restricted, depending upon location and nature of the proposal. - Designated avoidance/exclusion zones would be limited to key special areas under this alternative, which provides fewer constraints to realty land use activity. - If necessary to secure access, construction of roads around private lands would be an available option, but would be limited to areas where critical access needs have been identified. - This alternative provides proactive direction and emphasizes use of land tenure actions to secure and maintain access. - This alternative provides a variety of options to resolve unauthorized use, with some limitations. This flexibility could	maximized in this alternative to provide a variety of different route alternatives and would have an increased width to provide additional siting flexibility within the corridors. - Leasing the Fields airstrip would provide aviators a safer, more centralized place to land and take off. It could also improve public safety and limit resource damage by reducing aircraft operations in undeveloped areas. Reopening and improving the airstrip could also result in increased aircraft traffic and related visitation to the area. It would have local effects such and increased noise, soil and vegetative disturbance, and possible fuel or pesticide spills from aircraft spraying operations. Since the lands would be identified for disposal, the lessee could be assured of definitive tenure if the lands would be conveyed to him for that purpose through an Airport Conveyance or other disposal. Also, since the lands would be identified for immediate disposal, the United States' liabilities associated with operation and maintenance of the airstrip would be minimized.

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		would leave two alternative north-south corridors and a single east-west option through the Planning Area. - Requiring major facilities to locate in corridors may involve costly route changes in adjacent planning areas to align a facility with the designated corridor in the Planning Area. These reroutes could also result in additional surface disturbance, effects to visual resources, and proliferation of separate ROWs. - Leasing the Fields airstrip would provide aviators a safer, more centralized place to land and take off. It could also improve public safety and limit resource damage by reducing aircraft operations in undeveloped areas but also could result in increased aircraft traffic and related visitation to the area. It would have local effects such as increased noise, soil and vegetative disturbance, and possible fuel or pesticide spills from aircraft spraying operations. Since the airstrip would be in a retention zone, the airstrip and the effects of leasing would continue indefinitely. It could also expose the United States to hazardous materials, safety and other liabilities associated with	result in effects to sensitive resource values. It may also have some potential to promote trespass when the trespasser knows that the use may be ultimately authorized. The higher costs of trespassing versus legal authorization may deter most trespassers, thereby limiting this potential. *AMU* - This alternative is in keeping with BLM policy, which encourages proponents of large scale facilities to locate in a corridor when possible. - This alternative would provide aviators a safer, more centralized place to land and take off. It could also improve public safety and limit resource damage by reducing aircraft operations in undeveloped areas but could also result in increased aircraft traffic and related visitation to the area and have local effects such as increased noise, soil and vegetative disturbance, and possible fuel or pesticide spills from aircraft spraying operations. Since the lands would be identified for disposal by airport conveyance or exchange, the lessee could be assured of definitive tenure if the lands would be conveyed to him	

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		long-term operation of such a facility on its lands.	for that purpose. Also, since the lands would be identified for immediate disposal, the United States' liabilities associated with operation and maintenance of the airstrip would be minimized. - Effects to bighorn sheep from communications development would continue at Buckskin Mountain but would be minimized by a road closure to the site. Additional development of the site may result in additional effects to bighorn sheep. Further, depending upon the proposed use, co-location of new communications uses in existing facilities may be possible, thereby reducing surface disturbance and frequency of visits to the site.	

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TRANSPORTATION AND ROADS (See Section 4.18 for the Full Discussion of Effects)				
- There would be no new effects on maintenance or degree of access.	- Road closures and decreased maintenance would reduce motorized access to public lands. - Approximately 157 miles of routes within the CMPA are proposed to be closed. - Decreased road maintenance would result in lower maintenance costs.	- Twenty-six miles of motorized routes would be closed, reducing motorized access to public lands. - Road closures and decreased maintenance would result in decreased maintenance costs.	- Six miles of routes would be closed, reducing access to public lands. - Expanded winter access for motorized uses and motorized access to dispersed campsites would increase public access.	- No route closures would be proposed for this alternative. - Increased access and road maintenance combined with less restrictive management could increase use of the road system as well as maintenance costs. - Expanded winter access and motorized access to dispersed campsites would also increase use of the road system.
OFF-HIGHWAY VEHICLES (OHVs) (See Section 4.19 for the Full Discussion of Effects)				
Planning Area - Maintaining the existing OHV designations and the seasonal closure on the Steens and surrounding lands would not affect OHV and mechanized vehicle use. CMPA - Closing the Steens Mountain Wilderness eliminates OHV and mechanized vehicle use. - Eliminating cross-country travel restricts all OHV and mechanized vehicle use to designated routes. *AMU* - The Pueblo and Trout Creek Mountains would not be closed seasonally.	*Planning Area* - OHV and mechanized vehicle use would be concentrated on the open routes, resulting in congestion and reduced recreation quality. - OHV and mechanized vehicle use could be displaced to areas and routes outside of the Planning Area. *CMPA* - Closing the Steens Mountain Wilderness eliminates OHV and mechanized vehicle use. - Eliminating cross-country travel restricts all OHV and mechanized vehicle use to designated routes. - Closing the Steens Loop Road would reduce access and the routes available for use.	*Planning Area* - OHV and mechanized vehicle play (open) areas would not be available, but most roads and ways would be open. - Designation of the four parcels found to have wilderness characteristics as limited to designated roads would protect the naturalness and opportunities of solitude in the parcels. *CMPA* - Closing the Steens Mountain Wilderness eliminates OHV and mechanized vehicle use. - Eliminating cross-country travel restricts all OHV and mechanized vehicle use to designated routes. - Closing the Rooster Comb to motorized vehicles only would	*Planning Area* - Opportunities for OHV and mechanized vehicle use would generally be available, including one open, play area. *CMPA* - Closing the Steens Mountain Wilderness eliminates OHV and mechanized vehicle use. - Eliminating cross-country travel restricts all OHV and mechanized vehicle use to designated routes. - Closing six miles of roads in the CMPA would not affect OHV and mechanized vehicle use. - Seasonally closing the core of the CMPA to OHV and mechanized vehicle users could displace them to other areas. - Seeking cooperative agreements	*Planning Area* - OHV and mechanized vehicle use and play opportunities would be maximized. *CMPA* - Closing the Steens Mountain Wilderness eliminates OHV and mechanized vehicle use. - Eliminating cross-country travel restricts all OHV and mechanized vehicle use to designated routes. - OHV and mechanized vehicle use would not be affected by road closures. - Seasonally closing the upper Steens Mountain area would also not affect motorized or mechanized use. *AMU*

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	- Seasonally closing the entire CMPA would eliminate all motorized and mechanized use during the winter and spring and would displace users (especially snowmobilers). *AMU* - Closing the Alvord Desert playa would displace OHVs and mechanized vehicles to similar areas in adjacent states. - Seasonally closing the Pueblo and Trout Creek Mountains would minimally affect OHV and mechanized vehicle users.	close the Steens Loop Road to through traffic. Closing other roads in the CMPA would reduce the routes available for OHV and mechanized vehicle use. - Seasonally closing the core of the CMPA to OHV and mechanized vehicle users would displace them to other areas. *AMU* - Closing the Alvord Desert playa would displace OHVs and mechanized vehicles to similar areas in adjacent states. - Seasonally closing the Pueblo and Trout Creek Mountains would minmimally affect OHV and mechanized vehicle users.	with OHV and mechanized vehicle clubs may decrease resource degradation and user conflicts. *AMU* - Seasonally closing the Pueblo and Trout Creek Mountains would minimally affect OHV and mechanized vehicle users.	- Opportunities for OHV and mechanized vehicle use would be maintained or improved. - The Pueblo and Trout Creek Mountains would not be closed seasonally.
RECREATION (See Section 4.20 for the Full Discussion of Effects)				
Planning Area - ADA access would be improved. - Current management would not affect recreation. - Existing developed sites, campgrounds, and facilities would be maintained. - Continuing current BCB management would not increase or decrease recreation opportunities. - Continuing current High Desert Trail management and the Desert Trail Association MOU would not	*Planning Area* - ADA access would be improved. - SRMAs would not be designated. - Developed recreation opportunities would be reduced, while dispersed recreation opportunities may be either increased or decreased. - Existing developed sites, campgrounds, and facilities would be maintained. - Eliminating the BCBs would reduce tourism and visitation	*Planning Area* - ADA access would be improved. - The CMPA, Pueblo Mountains, and Trout Creek Mountains would be intensively managed for recreation. - Sites where recreation use affects resource values would be rehabilitated or closed. - Both developed and dispersed recreation would be affected by increasing some opportunities and limiting others. - Existing developed sites,	*Planning Area* - ADA access would be improved. - The CMPA, the Pueblo Mountains, and Trout Creek Mountains would be managed intensively for recreation. - Developed recreation opportunities could increase, while dispersed recreation would be either increased or decreased depending on whether increased recreation and tourism promotes dispersed use or whether effects to naturalness and solitude would	*Planning Area* - ADA access would be improved. - The CMPA, Pueblo Mountains, and Trout Creek Mountains would be managed intensively for recreation. - Developed recreation would be promoted and increased while dispersed recreation may either increase or decrease, depending on whether new facilities and opportunities encourage dispersed use or whether effects

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increase or decrease recreation opportunities. *CMPA* - The CMPA would be intensively managed for recreation. - The current resource damage and site problems at Mann Lake Recreation Site would continue and the anticipated increased use would not be addressed. - Retaining the existing horse trailhead facilities in the South Steens Campground area would require Little Blitzen parking area expansion to reduce South Steens Loop Road safety concerns and South Steens Campground equestrian side congestion. - Not installing a toilet on the North Steens Loop Road would increase vehicle traffic through Fish Lake Campground and would not address sanitation concerns. - Not developing a group camping area would require groups to stay in the campgrounds, causing crowding and reducing the number of sites available. Groups would not be separated from the general public. - Maintaining Lily Lake as a dispersed recreation site would allow the existing uses and resource and health concerns to	based on these designations. - Use of the High Desert Trail would decrease. *CMPA* - The current resource damage and site problems at Mann Lake Recreation Site would continue and the anticipated increased use would not be addressed. - Retaining the existing horse trailhead facilities in the South Steens Campground area would require Little Blitzen parking area expansion to reduce South Steens Loop Road safety concerns and South Steens Campground equestrian side congestion. - Not installing a toilet on the North Steens Loop Road would increase vehicle traffic through Fish Lake Campground and would not address sanitation. - Not developing a group camping area would require groups to stay in the campgrounds, causing crowding and reducing the number of sites available. Groups would not be separated from the general public. - Designating Lily Lake as a day use area would address resource concerns. - Hiking, nonmotorized vehicle use, and educational opportunities	campgrounds, and facilities would be maintained. - Group size limits would be implemented to protect natural and cultural values. - The effects from managing BCBs and the High Desert Trail would be the same as Alternative A. *CMPA* - The current resource damage and site problems at Mann Lake Recreation Site would continue and the anticipated increased use would not be addressed. - Retaining the existing horse trailhead facilities in the South Steens Campground area would require Little Blitzen parking area expansion to reduce South Steens Loop Road safety concerns and South Steens Campground equestrian side congestion. - Installing a toilet on the North Steens Loop Road would provide needed facilities, reduce vehicle traffic through Fish Lake Campground, and address sanitation concerns. - Developing a group camping area within an existing campground could lead to crowding and would reduce the number of sites. Groups would	deter dispersed recreation. - Existing developed sites, campgrounds, and facilities would be maintained. - Managing existing and creating new BCBs would promote tourism and recreation. - The effects of managing High Desert Trail would be the same as Alternative A. *CMPA* - Implementation of a variety of projects and actions would be delayed until a comprehensive recreation plan for the CMPA is completed. - Visitors to the overlooks would not be constrained by the presence of camps, litter would be reduced, and rock rings eliminated. - Restricting parking and stopping on the Rooster Comb would increase public safety and decrease driving hazards. Providing safe pullouts or parking areas at either end of the Rooster Comb would safely accommodate public viewing of Big Indian. - Visitor use at the overlooks would not be affected. - Increased permitted use could lead to crowding at popular sites and areas. If needed, an allocation system would be implemented to	to naturalness and solitude deter dispersed recreation. - Existing developed sites, campgrounds, and facilities would be maintained. - Managing existing and developing new BCBs would promote tourism and recreation. - The effects of managing High Desert Trail would be the same as Alternative A. *CMPA* - Upgrading the Mann Lake Recreation Site would increase developed camping opportunities and would accommodate the anticipated increased use. Other users could be displaced to other nearby areas. - Developing a new horse trailhead facility in the South Steens Campground area would reduce safety concerns and limit resource damage. However, this facility has the potential to attract additional horse users to the area. - Installing toilets at the three main overlooks would provide needed facilities and would protect human health. - Developing a group camping area on private land would help accommodate existing group use, provide a needed facility,

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continue and would reduce educational opportunities. - Hiking, nonmotorized vehicle use, and educational opportunities would be reduced. - Camping locations would not be restricted. - Visitors could be constrained by camps at overlooks and along the Steens Loop Road. Litter, rock rings, and ashes would be common. - Public safety and driving hazards would continue on the Rooster Comb. - Current winter recreation opportunities would not be affected. Cooperative management and snowmobiling opportunities would be lost. - Nonmotorized boating on the mainstem Blitzen River would be limited to those few times when flows are adequate and the gate is open. - Visitor use at the overlooks would not be affected. - The number of new commercial, competitive, and organized group SRPs would not be affected. - Resource damage would continue to occur at heavily used pullouts and other locations along the Steens Loop Road because vehicles could be parked	would be reduced. - Camping would be restricted to developed campgrounds, limiting overnight use and increasing day use. - Visitors would not be constrained by camps at overlooks and along the Steens Loop Road. The trash, rock rings, and ashes would be eliminated. Dispersed campers would be displaced to the campgrounds or locations outside the CMPA, causing heavier campground use and increased crowding. - The Steens Loop Road from the Kiger Gorge Overlook to west of Blitzen Crossing would be closed so there would be no need to restrict parking or stopping on the Rooster Comb or intensively manage use at the East Rim and Wildhorse Overlooks. South Steens Campground would only be accessible to hikers and horseback riders. - Winter recreation opportunities would be greatly reduced. Cooperative management and snowmobiling opportunities would be lost Nonmotorized winter recreation would not be affected. - Nonmotorized boating on the mainstem Blitzen River would not	not be separated from the general public. - Designating Lily Lake as a day use area and installing interpretive signs would address resource concerns and would provide an educational opportunity. - Hiking, nonmotorized vehicle use, and educational opportunities would be slightly increased. - Camping would be restricted to developed campgrounds and designated dispersed sites outside the Steens Mountain Wilderness, constraining visitors' choices. - Visitors would not be constrained by camps along the Steens Loop Road and at overlooks. The trash, rock rings, and ashes would be eliminated. Campers would be displaced to the campgrounds and designated dispersed sites, causing heavier campground and dispersed site use and crowding. - The Rooster Comb would be closed to motorized vehicles, so there would be no need to restrict parking or stopping. - Winter recreation opportunities would be reduced. Cooperative management and snowmobiling opportunities would be lost. Nonmotorized winter recreation could be improved.	reduce resource impacts, improve visitor experiences, and support existing commercial recreation operations. *AMU* - Implementation of a variety of projects would be delayed until Recreation Project Plans are completed and EAs are written. Possible project plans could be written for the Frog Springs area, Pike Creek, the Penland Road, other dispersed campsites, and mountain bike trails. - Closing the RNAs and Mickey Hot Springs to camping would protect the relevant and important values and would reduce safety concerns at Mickey Hot Springs. - SRPs would be issued for all areas. An allocation system would be developed and implemented, if needed, to protect cultural and natural resources.	separate groups from the general public, and foster cooperative management. - Installation of a toilet at Lily Lake would increase both day and overnight use, but would address health concerns. - Hiking, nonmotorized vehicle use, and educational opportunities would be increased. - Camping locations would not be restricted. Visitors could be constrained by camps at overlooks and along the Steens Loop Road. Litter, rock rings, and ashes would be common. - Restricting parking or stopping on the Rooster Comb would increase public safety and decrease driving hazards. - Winter recreation opportunities would be increased but could affect the experiences of nonmotorized winter recreationists. - Nonmotorized boating opportunities would be increased. - Visitor use at the overlooks would not be affected. - Increased permitted use could lead to crowding at popular sites and areas. - Regularly spaced pullouts along the Steens Loop Road could spread out use, but could also

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anywhere. *AMU* - Heavily used dispersed campsites would continue be affected by vegetation loss, erosion, and sanitation concerns. - Developing a Wildhorse Canyon parking area would increase access, but could affect naturalness and opportunities for solitude and primitive and unconfined recreation. - Camping in ACECs/RNAs could affect the relevant and important values. - Camping at Mickey Hot Springs presents safety concerns because of the geothermal features. - The opportunity to develop mountain bike trails, if public interest develops, would be lost. - SRPs would not be affected.	be allowed. - Visitor use at Kiger Overlook would increase and would require intensive management. - Requiring permits for all CMPA users would deter some users and decrease use of the area, as would closing most of the Steens Loop Road. - Only the existing, long-term SRPs would be retained, which could result in increased business for the existing permittees, but their activities would also be constrained by the road closures and use restrictions. Many commercial tours and organized groups would not visit the area. - Resource damage would occur at heavily used locations and new areas between Jackman Park and Kiger Overlook because most of the Steens Loop Road would be closed. *AMU* - Heavily used dispersed campsites would continue to be affected by vegetation loss and erosion, but requiring dispersed users to pack out all solid human waste would abate the sanitation concerns. - Access to the east side of the Steens would decrease.	- Nonmotorized boating on the mainstem Blitzen River would be limited to those few times when flows are adequate and the gate is open. - Restricting visitors to designated trails at the overlooks would constrain their activities and sense of adventure. - Requiring permits for all Steens Loop Road users could deter some users and decrease use of the Steens Loop Road. - Commercial, competitive, and organized group opportunities and activities would be maintained through the issuance of SRPs. - The SRP program would be managed intensively and an allocation system would be implemented to reduce resource impacts, improve visitor experiences, and support existing commercial recreation operations. - Resource damage would continue to occur at heavily used pullouts and other locations along the Steens Loop Road because vehicles could be parked anywhere. *AMU* - Heavily used dispersed campsites would continue to be affected by vegetation loss,		concentrate use at areas that may not be suitable for heavy visitor use. *AMU* - Development of a campground in the Frog Springs area would reduce dispersed camping and its effects, but could result in heavier use of the area. - Installation of toilets at Pike Creek and other dispersed campsites would reduce sanitation concerns, but could also result in heavier use of the sites. - Encouraging dispersed users to pack out all solid human waste would reduce site-specific sanitation concerns, if users comply with the recommendation. - Access to the east side of the Steens would increase, but could affect naturalness and opportunities for solitude and primitive and unconfined recreation. - Closing Mickey Hot Springs to camping would reduce safety concerns. - The opportunity to develop mountain bike trails, if public interest develops, would be available.

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	- Closing Mickey Hot Springs to camping would alleviate the safety concerns associated with the geothermal features. - The opportunity to develop mountain bike trails, if public interest develops, would be lost. - No SRPs would be issued, which would eliminate all existing and future opportunities for commercial, competitive, and organized group recreation.	erosion, and sanitation concerns, except at Pike Creek and Frog Spring. Encouraging dispersed users to pack out all solid human waste would reduce site specific sanitation concerns, if users comply with the recommendation. - Access to the east side of the Steens would increase, but could affect naturalness and opportunities for solitude and primitive and unconfined recreation. - Closing the ACECs/RNAs to camping would protect the relevant and important values and would reduce safety concerns at Mickey Hot Springs. - The opportunity to develop mountain bike trails, if public interest develops, would be lost. - SRPs would be issued for all areas, except the Alvord Desert playa. An allocation system would be developed and implemented, if needed, to protect cultural and natural resources.		- SRPs would be issued, which would lead to increased use and effects.
AREAS OF CRITICAL ENVIRONMENTAL CONCERN (See Section 4.21 for the Full Discussion of Effects)				
- No new ACECs would be designated and the 15 existing ACECs, totaling 132,112 acres, would be retained.	- All 15 existing ACEC designations would be revoked and one proposed ACEC, Mickey Hot Springs, would be designated for a total of 42 acres.	- All 15 existing ACECs would be retained and six proposed ACECs would be designated for a total of 143,426 acres.	- 12 of the 15 existing ACECs would be retained while the designation on three of the existing ACECs (Alvord Peak, Pickett Rim and Steens Mountain) would be revoked. Five proposed ACECs	- All 15 existing ACEC designations would be revoked and one new ACEC, Mickey Hot Springs, would be designated for a total of 42 acres.

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			would be designated for a total of 66,870 acres.	
WILDERNESS (See Section 4.22 for the Full Discussion of Effects)				
- Wilderness classified as a single unit without Management Areas. - Management would not restrict party size, camping, or recreational stock use; trail conditions, campsites and surrounding areas; naturalness and solitude would be effected. - Minimal maintenance of trails may lead to trail damage and increased use and degradation. - Unrestricted campfire use may lead to an increase of campfires, fire rings, damage to campsite areas, expansion of the barren ground area, increases in user created trails, and damage to vegetation. - Issuing additional outfitter/guide permits could lead to increased use and effect trail and campsite conditions and solitude and naturalness. - Livestock permittee grazing access would be managed according to EA and Decision Record; effects on naturalness and solitude. - Inholder access would be managed according to EA and Decision Record; effects on	- Wilderness classified into two Management Areas: Gorges and Uplands. - Party size limit of six people and nine head of stock would lead to increased naturalness. - Camping not allowed at Wildhorse Lake or in any RNA. - Three day length-of-stay would promote solitude and naturalness and minimize effects to campsites and trails. - Recreational stock use allowed at Wildhorse Lake or any RNA on a limited basis; no pack stock grazing allowed. - No trail maintenance or reclamation; may promote protection and rehabilitation of natural resources but could lead to degradation of the trails and adjacent resources. - Campfires not allowed, increasing naturalness and fire potential. - No commercial outfitter/guide services allowed. - No commercial livestock grazing allowed. - Inholder access would be managed according to EA and	- Wilderness classified into two Management Areas; Gorges and Uplands. - Party size limit of nine people and 12 head of stock. - No camping allowed at Wildhorse Lake or any RNA. - A five day length-of-stay would have similar effects as Alternative B. - Recreational stock use at Wildhorse Lake or any RNA same as Alternative B; effects would be the same. - Minimal trail maintenance , no new trails constructed, inappropriate user trails and selected roads would be reclaimed; actions would promote protection and rehabilitation of natural resources and wilderness values. - Outfitter/guide services allowed at current levels; no change in current trail or campsite conditions or levels of solitude. - Livestock permittee grazing access would be managed according to EA and Decision Record; effects on naturalness and solitude.	- Wilderness classified into two Management Areas; Gorges and Uplands; management actions initiated separately in each of the Gorges and the Uplands . - Party size limit of 12 people and 18 head of stock; exceptions for historic permitted and Native American use; increased effects on naturalness and solitude. -14-day length of stay limit would have effects on trail and campsite conditions; naturalness and solitude would be effected. - No camping allowed at Little Wildhorse RNA, no overnight recreational stock use at Wildhorse Lake; actions allow for increased naturalness and solitude and lesser effects on campsites and trails. - Grazing of recreational stock would be allowed with some effects on naturalness. - Minimal trail maintenance; new trails constructed if needed to protect wilderness resources and values and inappropriate user trails reclaimed; beneficial effects on naturalness. - New proposals for outfitter/guide services considered; increase may	- Wilderness classified as a single unit without Management Areas. - No party size limits, these activities would affect trail conditions, campsites, and surrounding areas as well as naturalness and solitude. - A 14-day length-of-stay limit would be encouraged; affecting solitude and increasing primitive campsites. - Minimal trail maintenance; new trails constructed as visitor use increases; effecting naturalness and solitude and trail and campsite conditions. - New proposals for outfitter/guide services considered; increase may effect trail and campsite conditions and naturalness and solitude. - Livestock permittee grazing access would be managed according to EA and Decision Record; effects on naturalness and solitude. - Inholder access would be managed according to EA and Decision Record; effects on naturalness and solitude. - Monitoring of the wilderness

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naturalness and solitude. - Monitoring of the Wilderness conducted and management options implemented to maintain or restore desired conditions.	Decision Record; effects on naturalness and solitude. - Monitoring of the Wilderness would be conducted and management options implemented to maintain or restore desired conditions.	- Inholder access would be managed according to EA and Decision Record; effects on naturalness and solitude. - Monitoring of the Wilderness would be conducted and management options implemented to maintain or restore desired conditions.	effect trail and campsite conditions and naturalness and solitude. - Livestock permittee grazing access would be managed according to EA and Decision Record; effects on naturalness and solitude. - Inholder access would be managed according to EA and Decision Record; effects on naturalness and solitude.	would be conducted and management options implemented to maintain or restore desired conditions.
WILDERNESS STUDY AREAS and PARCELS WITH WILDERNESS CHARACTERISTICS (See Section 4.23 for the Full Discussion of Effects)				
WSAs - Wilderness values in WSAs would continue to be protected through management under the WSA IMP. *Parcels with Wilderness Characteristics* - Parcels found to have wilderness characteristics would be managed according to the MFP, which could allow uses to affect naturalness and opportunities for solitude and primitive and unconfined recreation.	*WSAs* - Wilderness values in WSAs would continue to be protected through management under the WSA IMP. *Parcels with Wilderness Characteristics* - The four parcels found to have wilderness characteristics would be protected through the exclusion of commodity uses and other restrictive designations.	*WSAs* - Wilderness values in WSAs would continue to be protected through management under the WSA IMP. *Parcels with Wilderness Characteristics* - The four parcels found to have wilderness characteristics would be protected through various designations.	*WSAs* - Wilderness values in WSAs would continue to be protected through management under the WSA IMP. *Parcels with Wilderness Characteristics* - The four parcels found to have wilderness characteristics would be managed according to the Proposed RMP, which could affect naturalness and opportunities for solitude and primitive and unconfined recreation.	*WSAs* - Wilderness values in WSAs would continue to be protected through management under the WSA IMP. *Parcels with Wilderness Characteristics* - The four parcels found to have wilderness characteristics would be managed according to management actions in Alternative E, which could affect naturalness and opportunities for solitude and primitive and unconfined recreation.

Alternative A - No action. Continues present management.	Alternative B - Excludes commodity production and limits other uses; maximizes natural processes.	Alternative C - Emphasizes protection of natural values.	Proposed RMP - Balances cultural, economic, ecological, and social health in a manner that encourages cooperative management practices.	Alternative E - Emphasizes commodity production and public uses.
WILD AND SCENIC RIVERS (See Section 4.24 for the Full Discussion of Effects)				
- Identified ORVs for each eligible river would be afforded adequate protection. - Management may include restrictions on grazing management, recreational use, and mineral or energy development.	- Recommending the ten river segments as not suitable for inclusion in the WSR system would not affect the identified ORVs. - Grazing would not affect the ORVs because no grazing would be permitted in this alternative.	- All suitable rivers would be administered in such a manner as to protect and enhance their ORVs. - Management may include restrictions on grazing management, recreational use, and mineral or energy development within the river corridor boundary.	- Recommending the ten river segments as not suitable for inclusion in the WSR system would not affect the identified ORVs. - Grazing would continue along those creeks and sections of creeks outside of the No Livestock Grazing Area, but the ORVs should not be affected.	- Effects would be the same as the Proposed RMP.

3 AFFECTED ENVIRONMENT

3.1 Planning Area Profile

The Planning Area encompasses the entire Andrews RA and the portion of the Three Rivers RA within the CMPA. This chapter describes the current condition, amount, location, use, and demands of each of the resources in the Planning Area that could be affected by the actions described in Chapter 2. Physical characteristics such as geology and climate are incorporated into the description of the physical environment. Although they should not be affected by the management actions, they are a part of the physical environment in which management actions would be taking place.

Health and safety is a required management component that will not change by alternative or be affected by the various management actions. Protection of the public will be provided under all of the alternatives and will include such measures as aiding law enforcement agencies with search and rescue efforts and posting signs to alert the public to hazardous elements and locations within the Planning Area.

3.1.1 Physical Characteristics

The Planning Area lies in the northwest portion of the Great Basin in the Basin and Range Physiographic Province. Drainage is generally internal with no outlet to the sea, with one exception: the Crooked-Rattlesnake drainage extends into the northeastern part of the Planning Area and is a tributary to the Owyhee River.

The oldest rocks in the Planning Area are limited to the Pueblo Mountains. They consist of metamorphosed volcanic rocks that are approximately 150 to 200 million years old. They were intruded by quartz-rich rock approximately 180 million years ago.

The next oldest rocks in the Planning Area are approximately 18 to 23 million years old and are exposed only at the base of the east side of Steens Mountain. They consist primarily of rhyolitic and andesitic lava flows and tuffaceous sediments.

The Basin and Range Province began to evolve approximately 18 million years ago as a result of regional east-west extension. The regional extension includes all of the Planning Area and was accompanied by extrusion of Steens Basalt lava flows approximately 16 million years ago over an area 100 by 180 miles.

Approximately 15 million years ago, volcanic ash erupted from calderas located northeast of Pueblo Peak, south of present day Whitehorse Ranch, and in the vicinity of what is now McDermitt, Nevada. These eruptions resulted in thick deposits of welded tuffs in the eastern part of the Planning Area. Additional volcanic ash erupted from calderas located near present day Burns approximately 9.5 and 6.5 million years ago, resulting in welded tuffs in the northern half of the Planning Area.

About ten million years ago, regional uplift and movement on faults in the Basin and Range Province formed fault-block mountains and intervening broad valleys. Fault movement continues today. Steens Mountain is a fault-block mountain that dips gently westward and is characterized by its precipitous east-facing 5,500-foot high escarpment overlooking Alvord Valley.

The elevation of 9,700 feet on top of Steens Mountain allowed the formation of alpine glaciers less than one million years ago. The glaciers took the form of an ice cap on top of Steens Mountain during an earlier glacial advance (the Fish Lake advance) and were confined to river valleys during a later glacial advance (the Blitzen advance). The valley glaciers carved gorges 2,000 feet deep that expose layers of the Steens Basalt. The Steens Basalt has a total thickness of approximately 3,000 feet.

Between 24,000 and 12,000 years ago, pluvial lakes occupied Alvord/Pueblo, Blitzen, and Catlow Valleys. The lakes formed due to increased precipitation and slightly warmer temperatures from a climate change that occurred several thousand years after the glaciers were at their peak. During this time, landslides formed along the east side of Steens Mountain and Ancient Lake Alvord spilled eastward into the Crooked-Rattlesnake drainage through Big Sand Gap. The Alvord Valley contains more than 1,000 feet of sediment eroded from the surrounding mountains and hills.

Weather in the semiarid Planning Area is the result of maritime air moving eastward from the Pacific Ocean over the Coast and Cascade Mountain ranges. As air masses rise to cross these mountains, much of the moisture in the air condenses and falls to the ground, making the air relatively dry by the time it reaches southeastern Oregon. There is an abundance of sunshine and a wide range between maximum and minium daily temperatures. Average annual

precipitation in the region is between eight and 14 inches, with some isolated areas receiving up to 30 inches or more. Most of the precipitation occurs from November through February, with about one-third falling as snow. The amount of precipitation in a particular location depends on topography; the higher the elevation, the greater the precipitation.

Thunderstorms, occasionally accompanied by hail, typically occur each year over virtually every part of the Planning Area. High-intensity thunderstorms occur between April and September; storms during June or July are typically drier than those in August or September. At elevations below 6,000 feet the snowpack usually melts by April; at higher elevations it remains until mid-June. Localized flooding often follows spring snowmelt.

Generally, the last spring frost occurs by May 30 and the first frost of autumn by September 2. The frost-free period (temperatures above 32° F) varies from 139 days at the lower elevations to 74 days at higher elevations; however, frost may occur during any month of the year.

The prevailing winds are west-southwest, with the most intense winds during March and April. December and January are the calmest months.

3.1.2 History of the Planning Area

Archaeological evidence indicates that the Planning Area has been inhabited by humans for the last 10,000 years. Prehistoric occupation has been continuous, although population density and patterns of use have varied according to changing climatic cycles. Small, highly mobile family groups of hunters and gatherers were the norm during most of the yearly subsistence round even though larger groups gathered at winter camps in the valley bottoms.

Archaeological sites, the material remains of this prehistoric presence, are a commonplace yet fragile reminder of prehistoric activity in the Planning Area. Prehistoric sites include stone flake scatters, larger more complex campsites, toolstone quarries, rock shelters and caves, rock art and rock structures such as rock rings (wickiup supports), rock cairns, and hunting blinds. Many of the elders and younger tribal members have continued traditional practices such as marmot hunting, root gathering, and fruit harvesting.

Fur trappers were the first Euro-Americans to visit the Steens Mountain area in a brief foray in 1826. The next visitors came in the 1840s and 1850s. The area was settled in the 1870s and the most arable land with water was claimed shortly thereafter. Just after the beginning of the 20th century, a brief dry-land farming boom occurred to the west in Catlow Valley. By 1920, however, most settlers were driven away from the Steens area by cold winters, summer frost, and drought. The Riddle brothers, who ranched on the Little Blitzen River, were an exception. They settled the 1,220 acre ranch in the late 1800s and it was operated continuously until 1986 when the BLM acquired the property and designated it a National Register Historic District.

In the early 20th century, Basque sheep herders moved onto Steens Mountain and the surrounding rangeland. Many eventually became ranch owners, leaving their marks in the form of place names, cabins, carved aspen, sheep camps and numerous rock cairns.

Historic sites in the Steens Mountain area include wagon roads, homesteads, the town sites of Andrews and Diamond, Basque sheep camps with carved aspen, Rose Valley Borax Works at Borax Lake, and historic trash dumps. The Riddle Brothers Ranch National Historic District is a complex of well-preserved historic buildings, several willow fences, corrals, and rock walls. The BLM has restored four of the buildings and stabilized the others. In addition to the historic component, the district contains at least 48 prehistoric sites.

3.2 Air Quality

Under criteria established through the CAA as amended in 1990, the Planning Area has been designated as Class II. This means that air quality is good to excellent; however, the potential to effect Class I airsheds (i.e. Strawberry Mountain Wilderness) does exist and additional measures will be required to avoid those effects. Strawberry Mountain Wilderness, which is 65 miles northeast of the Planning Area, is the closest Class I airshed. The nearest Nonattainment Area is Lakeview, Oregon. The air pollutant of most concern on BLM administered land is particulate matter (PM), which may originate from fire, road or windblown dust, and vehicle use. Most of this PM is produced from fire and is PM_{10}.

3.3 Water Resources

The Planning Area contains portions of six subbasins: Guano, Harney/Malheur Lakes, Alvord Lake, Donner und Blitzen, Thousand-Virgin, and Crooked-Rattlesnake. The entire Planning Area is within an internally drained basin, with the exception of the Crooked-Rattlesnake subbasin on the eastern edge of the Planning Area, which drains to the Snake River via the Owyhee River. The topographic features of these large areas direct surface and some shallow subsurface water to streams, rivers, lakes, reservoirs, or playas.

The major portions of the Planning Area (Guano, Harney/Malheur Lakes, Alvord Lake, and Donner und Blitzen subbasins) are part of the larger Oregon Closed Basins Subregion and the Pacific Northwest Region. The eastern portion of the Planning Area (Crooked-Rattlesnake subbasin) is part of the Middle Snake Subregion and the Pacific Northwest Region. The southwest portion of the Planning Area (Thousand-Virgin subbasin) is part of the Black Rock Desert-Humboldt Region and the Great Basin Region. Regions, subregions, basins, and subbasins are delineated based on protocol defined by the USGS. This system delineates a hierarchy of geographical regions and their subparts such as subregion, basin, subbasin, watershed, and subwatershed. Each hydrologic unit is referred to as a field and given a two-digit numeric identifier. The HUC is a unique numeric identifier. Table 3.3.1 describes the subbasins in the AMU. Table 3.3.2 describes the subbasins in the CMPA.

The BLM maintains water rights and uses in accordance with Oregon law. In Oregon, water is publicly owned. Permits for use must be obtained from the Oregon Water Resources Department (OWRD), with some exceptions. Laws pertaining to the use of surface water and ground water are based on the principle of prior appropriation ("first in time, first in right") and limited to the quantity of water needed to satisfy the specified use without waste. Therefore, the first person to obtain a water right will be the senior holder on a particular stream and has priority over all junior claims in times of water shortage.

The State of Oregon recognizes instream water rights for the public benefit to maintain flows to protect recreation, fish, wildlife, and other river related resources. Instream water rights are applied for by the DEQ, Department of Parks and Recreation, and ODFW to the state's Water Resources Commission. The priority date for instream water rights is the date the application is submitted to the OWRD.

Current BLM and USDI policy is to use the state's instream flow water right process to protect flow-dependent values, such as ORVs, for designated streams and rivers pursuant to the WSR Act. The WSR Act reserves the minimum quantity of water necessary to maintain the values for which the river was designated. A federal reserved water right is authorized by the WSR Act with the priority date assigned to the date of designation. However, a federal reserve water right is not formally recognized until assigned through the state's water rights adjudication process. In the event that flow-dependent values are threatened, the BLM would seek cooperative solutions to promote adequate flow to protect WSR ORVs prior to exercising a federal reserved water right. This in no way abrogates the federal reserved water right.

Additionally, federal reserved water rights may be applied to certain springs and waterholes pursuant to Public Water Reserve No. 107, Executive Order of April 17, 1926. Public Water Reserve 107 reserves the amount necessary to support present and future uses by livestock and humans. This reservation is limited to springs and waterholes on lands within the public domain prior to April 17, 1926.

3.3.1 Surface Water

Watershed function in the form of capture, storage, and release of available precipitation regulates the timing, intensity, and duration of runoff through attributes of landform, soil, and vegetation. Capture and storage of precipitation occurs through upland and riparian landform features such as floodplain, meadows, swells, and ephemeral/intermittent lakes, as well as constructed facilities (soil and water detention structures and ephemeral/intermittent reservoirs). Upland and riparian vegetation further contribute to this process by trapping snow, disrupting overland and stream runoff, and maintaining soil structure, which facilitates infiltration. Water that infiltrates and percolates into and through the soil profile is available to sustain vegetation and contributes flow to seeps, springs, streams, and lakes. Stored water in riparian systems and adjacent uplands subsequently releases as a cool water source that augments baseflow, buffers stream temperature, and provides habitat for aquatic species.

Table 3.3.1: Subbasins in the Andrews Management Unit

Subbasin	HUC	Total Acres[1]	USFWS	State Acres	Private Acres	BLM Acres	Stream Miles[2]
Guano	17120008	625,014	0	658	271,813	352,544	1,061
Harney/Malheur Lakes	17120001	2,567	0	0	14	2,553	5
Alvord Lake	17120009	748,442	0	5,595	117,946	624,901	2,258
Donner und Blitzen	17120003	86,405	26,677	30	35,011	24,688	284
Thousand-Virgin	16040205	171,333	0	0	2,055	169,278	597
Crooked-Rattlesnake	17050109	45,071	0	0	0	45,071	219
	Total	**1,678,832**	**26,677**	**6,283**	**426,839**	**1,219,035**	**4,424**

[1] The numbers in this column include the subbasin area within the AMU.
[2] The stream miles include all perennial, intermittent and ephemeral streams within the AMU. There are approximately 430 miles of perennial streams in the AMU, inclusive of all land ownership and management jurisdictions.

Table 3.3.2: Subbasins of the CMPA

Subbasin	HUC	Total Acres[1]	State Acres	Private Acres	BLM Acres	Stream Miles[2]
Guano	17120008	73,679	0	2,839	70,840	189
Harney/Malheur Lakes	17120001	22,910	0	4,725	18,185	59
Alvord Lake	17120009	125,901	433	5,792	119,675	382
Donner und Blitzen	17120003	270,694	637	53,231	216,825	707
	Total	**493,184**	**1,070**	**66,587**	**425,525**	**1,337**

[1] The numbers in this column include the subbasin area within the CMPA boundary.
[2] The stream miles include all perennial, intermittent and ephemeral streams within the CMPA boundary. There are approximately [3]371 miles of perennial streams in the CMPA, inclusive of all land ownership and management jurisdictions.

The Planning Area contains several perennial and intermittent reservoirs and lakes on both public and private lands. Reservoirs include Rock Creek, Three Mile, Skull Creek, V Lake, Sixmile, Lower Borax Lake, Krumbo, Kern, Larkspur, and Granddad. Lakes include Garrison, Borax, Tumtum, Juniper, Wildhorse, Little Wildhorse, Mann, Ten Cent, Lily, Pate, Fish, Lost, and Honeymoon.

The Planning Area contains approximately 5,760 miles of ephemeral, intermittent, and perennial streams, of which 800 miles are considered perennial. Most surface runoff is from snowmelt or rainfall at the higher elevations, producing peak discharges in the spring and early summer. Many of the streams in lower-elevation semiarid areas are either intermittent, with segments of perennial flow near springs, or ephemeral, with flow only during spring runoff and intense summer storms.

3.3.1.1 Surface Water Quality

The EPA delegated authority to the DEQ to implement the CWA. The objective of the CWA is to restore and maintain the physical, chemical, and biological integrity of the nation's waters. To implement the CWA, the State of Oregon develops and adopts water quality standards, which include beneficial uses, narrative and numeric criteria, and anti-degradation policies. Oregon's water quality standards are contained in OAR 340 Division 41. Section 303(d) of the CWA requires the state to identify those waters not meeting the water quality standards, referred to as "water quality limited" or "impaired" and to develop TMDLs. The TMDLs describe the amount of each pollutant a waterbody can receive without violating water quality standards. The TMDL and Water Quality Management Plan (WQMP)for the Alvord Lake subbasin were completed by the DEQ and approved by the EPA in 2004. The DEQ's schedule for completing TMDLs for the remaining subbasins in the Planning Area is the year 2010. Table 3.3.3 and Table 3.3.4 list

the streams in the AMU and the CMPA, which are identified on DEQ's 2002 303(d) list as water quality limited streams. Duplication within these tables is the result of streams occurring in both the AMU and CMPA.

Table 3.3.3: Water Quality Limited Streams within the AMU

Stream Name	Parameter	Segment	List Date
Donner und Blitzen River Subbasin			
Bridge Creek	Temperature-Summer	River Mile 0 to 2.2	2002
McCoy Creek	Temperature-Summer	River Mile 0 to 26.2	2002
Guano Subbasin			
Home Creek	Temperature-Summer	River Mile 0 to 21.3	1998
Skull Creek	Temperature-Summer	River Mile 0 to 13.3	1998
Alvord Lake Subbasin			
Big Trout Creek	Summer	River Mile 0 to 16.6	2002
Denio Creek	Temperature-Summer	River Mile 0 to 6.1	1998
East Fork Big Trout Creek*	Temperature-March 1 to June 30 and Summer	River Mile 0 to 6.6	2002
Little Trout Creek*	Temperature-Summer	River Mile 0 to 9.3	2002
Mosquito Creek*	Temperature-Summer	River Mile 0 to 7.4	2002
Trout Creek*	Temperature-Summer	River Mile 0 to 30	2002
Van Horn Creek	Temperature-Summer	River Mile 0 to 8.2	1998
Willow Creek (Steens Mountain)	Temperature-Summer	River Mile 0 to 5.3	1998

Table 3.3.4: Water Quality Limited Streams within the CMPA

Stream Name	Parameter	Segment	List Date
Harney/Malheur Lake Subbasin			
Riddle Creek	Temperature-Summer	River Mile 0 to 24.4	1998
Donner und Blitzen River Subbasin			
Ankle Creek	Temperature-Summer	River Mile 0 to 7.6	1998
Big Indian Creek	Temperature-Summer	River Mile 0 to 7.1	1998
Deep Creek	Temperature-Summer	River Mile 0 to 7.2	1998
Donner und Blitzen River	Summer	River Mile 45.3 to 77.3	1998
Fish Creek	Temperature-Summer	River Mile 0 to 7.5	1998
Indian Creek	Temperature-Summer	River Mile 0 to 4.2	1998
Little Blitzen River	Temperature-Summer	River Mile 0 to 3.6	2002
McCoy Creek	Temperature-Summer	River Mile 0 to 26.2	2002
Mud Creek	Temperature-Summer	River Mile 0 to 4.8	1998

Stream Name	Parameter	Segment	List Date
Guano Subbasin			
Home Creek	Temperature-Summer	River Mile 0 to 21.3	1998
Alvord Lake Subbasin			
Mosquito Creek*	Temperature-Summer	River Mile 0 to 7.4	2002
Willow Creek (Steens Mountain)	Temperature-Summer	River Mile 0 to 5.3	1998

* Listing status is "Potential Concern"; supporting data were collected during a drought year.

Through an MOA (USDI 2003), the DEQ recognizes the BLM as the Designated Management Agency responsible for implementing and enforcing natural resource management programs for the protection of water quality on public lands under its jurisdiction. This MOA recognizes that nonpoint source water quality issues are best controlled through the development, adoption, and implementation of sound resource management practices, referred to as BMPs. The primary cause of water quality degradation on public land is nonpoint source pollution. To further the purposes of this MOA and the CWA, the USFS and the BLM are implementing a Protocol for addressing CWA Section 303(d) Listed Waters (USDA/USDI 1999). In coordination with the EPA, DEQ and other agencies, the BLM is implementing the Protocol that is recognized as the vehicle for achieving water quality compliance.

3.3.2 Ground Water

The regional ground water gradients and the extent of aquifer systems within the AMU have not been studied. Ground water data are limited and are based on small isolated basin studies and well logs. The geology of the area is composed primarily of volcanic rocks. The water-bearing properties of these geologic formations depend largely on faults, fractures, joints, etc. The rate and quantity of ground water movement depends on the hydraulic conductivity of the geologic formation and the hydraulic gradient.

Ground water occurs as both confined and unconfined aquifer systems. Most unconfined aquifers are located in stream valleys or are associated with Pleistocene lakebeds that contain recent alluvial material; some may exist as perched aquifers. Alluvial aquifers vary greatly in size and yield from one stream/lakebed to another. These aquifers are important as transient storage systems to move ground water to or from streams and the deeper confined aquifers, and they are typical of drainages in the Planning Area. Perched aquifers occur along ridges between stream valleys and can usually be identified by the occurrence of springs above the valley bottoms. They are often associated with alluvial aquifers where streambeds intersect permeable outcrop areas.

Little is known of the areal extent or depth of the deep, confined bedrock aquifer systems. The DEQ has not identified any sole-source aquifers. The presence of numerous volcanic flows and faults does not support the concept of a uniform regional ground water gradient. Recharge to ground water systems occurs mainly at higher elevations where precipitation highly exceeds seasonal evapotranspiration. Precipitation is the major recharge source in areas with an exposed permeable formation and average annual precipitation in excess of 12 inches.

Ground water is used for domestic and livestock purposes and for irrigation. Ground water quality depends on the chemical makeup of the water-bearing formation. Most of the region contains good quality water, but the water is usually hard and contains moderate amounts of dissolved minerals. Minor exceptions are geothermal and hydrothermal waters that have concentrated elements such as arsenic, mercury, molybdenum, uranium, and selenium (Ferns et al. 1993a; Ferns et al. 1993b). Springs and seeps occur in areas where water from aquifers reaches the surface. Many springs begin in stream channels; others flow into small ponds or marshy areas that drain into channels. Some springs and seep areas form their own channels that reach flowing streams, but other springs lose their surface expression and recharge alluvial fill material or permeable strata. Inflow from riparian/hyporheic zones impacts baseflows and associated water temperature buffering and moderation. Water from springs differs from that of overland runoff in that it is generally more constant in temperature and lower in dissolved oxygen, especially close to the source. Mineral content in water varies from spring to spring along stream courses, depending upon the geochemistry of the substrata through which it flows.

3.4 Soils and Biological Soil Crusts

Surface soils in semiarid southeastern Oregon are young and poorly developed. Chemical and biological soil-building processes such as rock weathering, decomposition of plant materials, accumulation of organic matter, and nutrient cycling proceed slowly in this environment. Since soil recovery processes are also slow, disruption of soils can lead to long-term changes in ecological status and productivity. In many areas, natural, or geologic erosion occurs too rapidly for distinct deep soil horizons to develop.

Soil productivity varies widely due to characteristics such as soil depth, nutrient status, available water-holding capacity, and site characteristics including elevation, aspect, and slope gradient. A productive ecosystem depends on maintenance of soil productivity. Current soil productivity reflects site specific natural conditions and past management practices.

Surface management actions affect, to varying degrees, the following soil characteristics: soil bulk density (weight per unit volume), porosity (hydrologic conductivity), soil temperature, organic matter content, moisture content, and nutrient content. These factors in turn affect soil hydrologic response, productivity, nutrient cycling, water-holding capacity, and soil erosion rates.

Management practices may affect soil productivity by influencing soil characteristics and processes such as displacement, compaction, erosion, and alteration of organic matter and soil organism levels. Natural processes are slow to restore soil productivity in this semiarid region; therefore, prevention of soil degradation is an effective remedy.

Soil erosion varies throughout the Planning Area. In the semiarid portion of the SBR area, bare soil between plants comprises between 40 and 80 percent of the total ground cover of a native plant community, leaving large areas of exposed soil between plants to erode naturally. In addition to this background erosion rate, management regimes affect the rate at which soil erodes from a landscape. Any activities that remove vegetative cover increase the erosion rate. If the surface layers of vulnerable soils are washed or blown away, the productivity potential may be lost.

Historically, erosion occurred on upland soils and in drainage channels as a result of uncontrolled land use, prolonged drought, and catastrophic storms. Ephemeral drainages were deeply incised by gully erosion more than 30 years ago. Some geologic and localized erosion caused by concentrated uses still occurs. Introduced annual and perennial plants currently occupy many of these highly disturbed sites.

Current management practices have reduced erosion in some allotments within the Planning Area. These practices include proper stocking rates for livestock, rotation of grazing, improved designs of roads, rehabilitation of severely disturbed areas, restriction of vehicles to roads and ways, and control of concentrated recreational activities.

After the implementation of the Pueblo-Lone Mountain AMP in 1996, which changed the season of use for livestock on the major riparian areas and meadows in the Pueblo Mountains, monitoring has shown that gullies are revegetating and wet meadows are healing. Trend monitoring will continue in all grazing allotments and in the No Livestock Grazing Area to observe the changes to soils and vegetation that happen over time.

OHV and mechanized vehicle use on the Alvord Desert playa continues at an increasing but unknown rate; however, the soils that form the base of the lakebed heal each year by the natural action of wind and water on the site. The sand dunes adjacent to the Alvord Desert are not open for use by OHV and mechanized vehicles, however, vehicles occasionally stray onto the dunes past closure signs, making deep ruts in the sand and damaging many types of vegetation. This damage is limited to less than ten percent of the dune area.

The Planning Area was covered by an Order III soil survey completed in 1994 for the Harney County Area by the National Cooperative Soil Survey. Table 3.4.1 describes the general soil series found in the Planning Area.

Biological soil crusts are also known as cryptogamic, microbiotic, cryptobiotic, and microphytic crusts, leading to some confusion. The names are all meant to indicate common features of the organisms that compose the crusts. The most inclusive term is probably biological soil crust, as this distinguishes them from physical crusts while not limiting crust components to plants. Whatever the name used, there remains an important distinction between these formations and physical or chemical crusts (Belnap http://www.soilcrust.org/crust101.htm).

Using a classification scheme proposed by Eldridge and Greene in 1994, microbiota such as biological soil crusts can be divided into three groups based on their physical location in relation to the soil: hypermorphic (above ground), perimoprphic (at ground), and cryptomorphic (below ground).

Preliminary field observations in 2002 and 2003 indicate that the Planning Area contains primarily perimorphic and secondarily hypermorphic biological soil crusts. Hypermorphic biological soil crusts are found primarily on more stable soils and are generally the most susceptible to disturbance. Perimorphic biological soil crusts, which are the dominant form in the Planning Area occur both above and below the soil surface and are intermediate in their tolerance of disturbance. Cryptomorphic biological soil crusts are the most difficult to observe and occur to a lesser known extent within the Planning Area. This group of microbiota is the most tolerant to disturbance (Evans and Johansen 1999).

Biological soil crust data specific to the northern Great Basin has been lacking in the past. Research conducted by Ponzetti and McCune (2001) provides insight concerning disturbance of biological soil crust communities in the Planning Area. New monitoring studies are proposed in Appendix Q for the Pueblo-Lone Mountain Allotment and other Allotments in the Planning Area in order to inform future management actions.

Identification of biological soil crusts at the species level is often not practical for fieldwork; however, the use of some basic morphological groups simplifies the situation. Morphological groups are also useful because they are representative of the ecological function of the organisms (pg. 6, TR-1730-2). The basic morphological groups are as follows:

1. Cyanobacteria - Perimorphic/cryptomorphic.
2. Algae - Perimorphic/cryptomorphic.
3. Micro-fungi - Cryptomorphic/perimorphic.
4. Short moss (under ten millimeters) - Hypermorphic.
5. Tall moss (over ten millimeters) - Hypermorphic.
6. Liverwort - Hypermorphic.
7. Crustose lichen - Perimorphic.
8. Gelatinous lichen - Perimorphic.
10. Foliose lichen - Perimorphic.
11. Fruticose lichen - Perimorphic.

Morphological groups 1, 4, 5, 7, and 8 will likely be the dominant groups represented in the Planning Area. Morphological group 2 is difficult to observe, but observation may be possible at some sites. Group 3 is very difficult to observe unless the fruiting bodies are present; these tend to be very minute and often require an organic substrate to induce fruiting. Group 6 does occur in some sections of the Planning Area and groups 9, 10, and 11 are far less frequent, within the Burns District as a rule (2002 and 2003 field observations by Doug Linn).

Factors influencing distribution of biological soil crusts (TR-1730-2) include, but are not limited to the following:

Elevation: Biological soil crust cover is greatest at inland elevations under 1,000 meters. Lichen and moss components generally increase with elevation until vascular plant cover dominates the site.

Soils and Topography: Shallow soils support greater total biological soil crust cover than deep more productive soils. As coarse soil texture increases, total biological soil crust cover decreases. In more unstable soil types the representation of hypermorphic morphological groups such as short and tall moss may be exclusively under vascular plant cover (TR-1730-2). Percent of rock cover influences total biological soil crust cover as well, since embedded rocks provide armor for the microbiota contained within the soil interspaces. Preliminary field observations in 2002 and 2003 indicate that some of the most developed biological soil crust communities in the Planning Area occur in these highly rocky unproductive systems. North and east slopes generally favor crustal development, providing the moisture and temperature requirements for optimal physiological activity. Calcareous and gypsiferous soils can support greater diversity of biological soil crust species. The soil chemistry gradient has been shown to be the strongest explanatory factor for the compositional difference among research sites (Ponzetti and McCune 2001).

Disturbance: The intensity of disturbance and the time since disturbance can influence the community composition and total cover of biological soil crust communities. The type of disturbance is a fundamental consideration as well; compressional stress from vehicles, wild horses, livestock, and human footprints can modify biological soil crust communities. Ponzetti and McCune (2001) state that "....the compositional effects of grazing were overwhelmed by the

stronger soil chemistry and climate gradients. However, grazing-related differences were clearly discernable with statistical methods that accounted for the blocked design of the study." Biological soil crusts may serve as an early warning system because they appear to be more sensitive to livestock related impacts than are vascular plants.

Timing of Precipitation: Moisture regimes can play a large role in crustal community composition. The presence or absence of fog in a desert system can influence the abundance of mosses and other microbiota under shrubs due to the collection of moisture by the shrub. Fog seems to play some role in the Planning Area, to an unknown extent. However; field observations correlate with the expected occurrence of well developed crustal communities under shrubs that intercept additional moisture.

Biological soil crusts play a role in a functioning ecosystem. TR-1730-2 states that in "... a given ecoregion, ecological roles of biological soil crusts can vary widely in their importance and will depend on crust composition and biomass, as well as characteristics of the specific ecosystem being considered."

Carbon fixation, nitrogen fixation and increased soil oxygen content during active photosynthesis are beneficial contributions to the ecosystem resulting from biological soil crusts. The effect of crustal communities on soil/water relations is highly site dependent (TR-1730-2). Soil surface microtopography and aggregate stability are important contributions from biological soil crusts, as they increase the residence time of moisture and reduce erosional processes. The influence of biological soil crusts on infiltration rates and hydraulic conductivity varies greatly. Generally speaking, infiltration rates increase in pinnacled crusts and decrease in flat crust microtopographies. The northern Great Basin has a rolling biological soil crust microtopography, and the infiltration rates are probably intermediate compared to flat or pinnacled crustal systems.

Table 3.4.1: Soil Series in the Planning Area

Map No.	Soil Series	Description
1	Alvodest-Droval-Playas	Poorly to very poorly drained, very deep soils formed in lacustrine sediments on low lake terraces and basin floors; 0 to 3 percent slopes
2	Spangenburg-Enko-Catlow	Well or moderately well drained, very deep soils formed in lacustrine sediments and alluvium on middle lake terraces; 0 to 20 percent slopes
3	Atlow-Tumtum-Deppy	Well drained, very shallow or shallow soils formed in old alluvium, residuum, or colluvium on high lake terraces and low hills; 2 to 50 percent slopes
4	Gumble-Risley-Mahoon	Well drained, shallow or moderately deep soils formed in residuum and colluvium on hills and tablelands; 2 to 40 percent slopes
5	Felcher-Skedaddle	Well drained, very shallow to moderately deep soils that formed in colluvium and residuum on mountains; 20 to 70 percent slopes
6	Fury-Skunkfarm-Housefield	Somewhat poorly to very poorly drained, very deep soils formed in alluvium and lacustrine sediments on stream terraces, and lake terraces; 0 to 2 percent slopes
7	Poujade-Ausmus-Swalesilver	Moderately well and somewhat poorly drained very deep soils formed in lacustrine sediments, and alluvium on middle lake terraces; 0 to 5 percent slopes
8	Reallis-Vergas-Lawen	Well drained, very deep soils that formed in alluvium and eolian material on high lake terraces and fan terraces; 0 to 8 percent slopes
9	Baconcamp-Clamp-Rock outcrop	Well drained, shallow or moderately deep soils formed in residuum and colluvium; 5 to 80 percent slopes
10	Raz-Brace-Anawalt	Well drained, shallow or moderately deep soils formed in residuum and colluvium on tablelands having 8 to 12 inches of precipitation; 0 to 30 percent slopes

Map No.	Soil Series	Description
11	Ninemile-Westbutte-Carryback	Well drained, shallow and moderately deep soils that formed in residuum and colluvium on tablelands and hills having 12 to 16 inches of precipitation; 0 to 70 percent slopes
12	Merlin-Observation-Lambring	Well drained, shallow to very deep soils formed in residuum and colluvium on shrub and grass covered hills; 0 to 70 percent slopes

Much information specific to the Planning Area can be gathered via new monitoring proposed for the Pueblo-Lone Mountain Allotment and other allotments in the Planning Area. This information can be utilized to inform decisions on future management actions.

3.5 Vegetation

The existing vegetation in the Planning Area is discussed under four different communities or habitat types: riparian and wetlands, woodlands, WJMA, and rangelands. Noxious weeds are also discussed in this section. General Vegetation Types in the Planning Area are listed in Table 3.5.1 and are broken out by the AMU and the CMPA. A complete list of all the species of vegetation discussed in the Proposed RMP/FEIS is included in Appendix L.

Table 3.5.1: General Vegetation Types in the Planning Area

General Vegetation Type	AMU BLM Acres	CMPA BLM Acres
Unsurveyed/Unknown Vegetation Type	17,419	835
Annual Grassland	2,475	1,220
Crested Wheatgrass	9,014	12,506
Big Sagebrush/Crested Wheatgrass	13,333	6,882
Big Sagebrush/Perennial Grassland	457,672	84,939
Low Sagebrush/Grassland	104,681	130,419
Silver Sagebrush/Grassland	4,071	1,085
Black Sagebrush/Grassland	17,148	0
Mountain Big Sage/Perennial Grassland	15,463	41,584
Salt Desert Shrub/Grassland	200,967	321
Mountain Shrub/Grassland	7,658	6,538
Juniper/Big Sagebrush	1,083	52,659
Juniper/Low Sagebrush	1,740	51,128
Playas	36,141	395
Quaking Aspen	3,168	10,748
Native Perennial Grassland	2,785	8,425
Rabbitbrush/Grassland	8,883	5
Rock	1,512	1,466
Big Sagebrush/Annual Grassland	316,101	16,997
Total	**1,221,314**	**428,152**

3.5.1 Riparian and Wetlands

Riparian/wetland areas are water-dependent ecosystems bordering streams, springs, and lakes. They form ecological links between the terrestrial and aquatic components of the landscape. Riparian landform (flood plain), and vegetation and/or other structural components, such as woody debris and boulders, reduce erosion and dissipate stream energy or wave action (standing water) during high water events. Detention and storage of high flows reduce flood risks and contribute inflow during periods of receding water surface elevation or flow. Reduced bank erosion contributes to maintenance of water quality and general riparian integrity.

Riparian vegetation communities are influenced by landform, water availability, soil, elevation, and climate, as well as disturbance factors. These communities may consist of herbaceous or woody vegetation, or a combination of these two vegetation types. Presence and dominance are associated with the species' obligation or sensitivity to saturation, as well as the circumstances and conditions during which opportunities for establishment occur. Progression of a riparian community following changes in the physical characteristics of the site, particularly large changes in soil or water status, may result in a different Potential Natural Community (PNC) (USDI 1992, Procedures for Ecological Site Inventory).

Riparian vegetation communities in the Planning Area range from dominant woody tree/shrub species adjacent to moderate gradient streams to monotypic stands of sedge or rush associated with springs, saturated meadows, and low gradient stream reaches. Commonly observed woody riparian plant communities include cottonwood-willow, alder-willow, mixed willow, willow-chokecherry, and aspen. These communities may exhibit further diversity with additional shrub or herbaceous species associated with colonization opportunities, such as localized bank disturbance, canopy openings, and increased solar exposure. Herbaceous communities such as grasses, rushes and sedges, are often associated with finer textured soils with species composition associated with the duration of saturation.

The majority of public land riparian areas associated with perennial streams was assessed using the PFC assessment between 1997 and 2000 (Table 3.5.2). Functioning condition of riparian/wetland areas is a result of interactions among geology, soil, water, and vegetation. PFC is an assessment of the physical function of riparian/wetland areas through consideration of hydrology, vegetation, and soil/landform attributes. This assessment utilizes existing site specific inventory and monitoring information, as well as helping to identify management objectives and future monitoring. Definitions of the PFC ratings are identified below:

- Proper Functioning Condition: Riparian/wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; to filter sediment, capture bedload, and aid in floodplain development; to improve floodwater retention and ground water recharge; to develop root masses that stabilize streambanks against cutting action; to develop diverse ponding and channel characteristics; to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and to support greater biodiversity.

- Functional at Risk (FAR): Riparian/wetland areas that are in functional condition, but an existing soil, water, or vegetation attribute makes them susceptible to degradation.

- Nonfunctioning: Riparian/wetland areas that clearly are not providing adequate vegetation, landform, or large woody debris to dissipate stream energy associated with high flows, and thus are not reducing erosion, improving water quality, etc.

<u>Riparian/wetland vegetation resources support and are supported by the ecological function of watersheds. Past management practices such as historic livestock grazing coupled with natural events of drought, flood, and wildland fire have and may continue to affect the distribution, abundance and diversity of riparian/wetland vegetation and the overall function of watersheds throughout the Planning Area. PFC assessments, of which riparian/wetland vegetation is a primary attribute, indicate that the majority of riparian areas assessed in the Planning Area are at a level of PFC. PFC does not necessarily equate to ecological potential or a theoretical "desired future condition", rather it demonstrates the level of resilience required for a system to function and allow for maintenance and recovery of riparian/wetland communities. The range between PFC and an area's physical and biological potential becomes the "decision space" for social, economic, and other resource values. The values derived from riparian/wetland vegetation include water quality, fish and wildlife habitat, scenery, recreation and livestock forage.</u>

Table 3.5.2: PFC Assessment for the AMU and CMPA

	AMU		CMPA	
Rating/Trend	**Miles**	**Percent**	**Miles**	**Percent**
PFC	106	67	185	75
FAR[1]/Upward	22	14	33	13
FAR/Non-Apparent	19	12	21	9
FAR/Downward	0	0	4.5	2
Non-Functioning	11	7	3	1
Total	158	100	246.5	100

[1] Functional at Risk

3.5.2 Woodlands

3.5.2.1 Quaking Aspen

Quaking aspen is found throughout the Great Basin in small to moderately sized patches. This tree species is often found on north slopes or areas where snow accumulates and persists later into the spring than in adjacent areas. Quaking aspen has the ability to sucker (sprout) from numerous buds on the roots and rizhomes. The production of suckers greatly increases when overstory stems are removed by disturbances such as fire, wind, and cutting. Reproduction from seed is extremely uncommon due to exacting conditions required for germination and establishment (McDonough 1979). Quaking aspen form stands with an even-aged structure of dominant trees. These stands can be characterized as young, mature, or old (Wall 1999). Young stands are found shortly after disturbance, mature stands are often 80 to 100 years old, and stands older than 120 years in age are classified as old (Bartos and Mueggler 1981). Old stands have signs of deterioration present in the form of numerous standing dead trees and trees with large portions of their canopies dead. Younger stands may appear to be quite productive with healthy overstory trees and dense understory production. DeByle (1985) stated that quaking aspen stands regularly produce over 2,000 pounds per acre in forage, over ten times that of some adjacent plant communities. Quaking aspen stands are often focal points for animal activity, including grazing animals. Wild ungulates (mule deer and Rocky Mountain elk) rely on the forage during times of the year when other forages have cured. Wild and domestic livestock will utilize these areas in the summer months for forage and relief from high temperatures. Invertebrate herbivores also utilize quaking aspen stands, but only a few result in severe damage to the overstory.

Quaking aspen communities constitute a small portion of the Planning Area, but contribute to the biodiversity of wildlife and plant species. Within the Planning Area, quaking aspen is found on the Pueblo, Trout Creek, and Steens Mountains between 4,500 and 7,500 feet. Isolated stands occur as low as 4,500 feet along creek corridors and around springs on protected north slopes. Maser and others (1984) identified 84 wildlife species that utilize quaking aspen stands for breeding and 117 species that utilize quaking aspen communities for forage. Plant communities dominated by quaking aspen are often considered to be more productive than adjacent sagebrush or forested communities. The vegetation occurs in multilayered mixtures of shrubs, forbs and grasses. Over 300 plant species have been identified growing in quaking aspen stands across the Great Basin. Common grass and grasslike genera found in quaking aspen stands include wheatgrass, bromes, wildrye, bluegrass, and sedges. Forb genera include *Thalictrum* sp., sweet cicely, geranium, aster, peavine, yarrow, bedstraw, and butterweed. Shrub genera typically found within quaking aspen stands are snowberry, rose, serviceberry, cherry, sagebrush, rabbitbrush, and Oregon grape. Soils located within aspen stands were formed from igneous rock and are typically deep loam Haploxerolls.

Quaking aspen communities are experiencing a general decline across the western United States (Bartos and Campbell 1998). Many factors are contributing to the decline, but two of the most common links are the lack of fire and the encroachment of conifers into the quaking aspen communities. A recent survey of quaking aspen within the CMPA found that 36 percent of the stands had 50 percent, or greater, overstory senescence (Duckfoot Survey Company 2003). Above 6,500 feet, quaking aspen will reproduce within the community and form a fairly dense stand. The 2003 report by Duckfoot Survey Company identified that 51 percent of the stands surveyed had greater than 25 percent cover of suckers. Mean fire return intervals may be fairly long at these elevations. Wet site conditions and short summer seasons reduce

the likelihood of wildland fires. However, at lower elevations, quaking aspen is being actively replaced by western juniper. Three-fourths of all quaking aspen stands below 6,500 feet studied by Wall (1999) were either dominated by western juniper or had western juniper present in the community. The lack of fire has permitted western juniper to establish and become dominant or co-dominant in many quaking aspen stands; this situation is limited to Steens Mountain. The Pueblo and Trout Creek Mountains do not have western juniper, except for isolated trees. Stands below 6,600 feet on Steens Mountain are most susceptible to encroachment by western juniper (Wall et al. 2001).

3.5.2.2 Western Juniper

Western juniper woodlands are the dominant woodland type throughout much of the Planning Area. They occur in a vegetation band between 4,500 and 7,000 feet. Below 4,500 feet, available soil moisture limits western juniper's growth to wet areas or stream courses. Above 7,000 feet, temperature and the short growing season limits growth.

Two categories of western juniper woodlands can be found. Woodlands with trees less than 120 ybp have developed after European settlement (post settlement woodlands) of the Great Basin. These include over 90 percent of the current western juniper woodlands across the Planning Area. These sites are altered mountain big sagebrush, low sagebrush, quaking aspen, riparian broadleaved woodland, and in some cases mountain mahogany plant communities. Encroachment of western juniper into these plant communities can be attributed to past grazing practices, fire suppression, and subtle climate shifts over the last 120 years. Understory vegetation in the post-settlement stands contains similar species to the pre-settlement plant community.

Woodlands with old to ancient trees are found on rocky ridge tops, shallow soil areas, and other areas where there is limited accumulation of ground fuels. Tree ages may exceed 1,000 years in these stands. Growth form of old trees is often characterized by a generally asymmetrical appearance, rounded spreading canopies, canopies that are often sparse, large irregular tapering trunks, deeply furrowed and fibrous bark, few but heavy branches, and the presence of a bright green arboreal fruticose lichen (Burkhardt and Tisdale 1969; Miller and Rose 1999). Woodlands with these characteristics occupy less than one percent of the Planning Area. Old growth woodlands are often embedded within other plant communities.

Associated understory plant species in post settlement woodlands are similar to the species found in sagebrush, aspen and riparian plant communities prior to juniper encroachment. Over 90 percent of the current western juniper woodlands in Oregon have developed since the latter part of the 19th century. Introduction of domestic livestock, fire suppression, and subtle climatic shifts over the last 120 years have permitted western juniper to encroach into more productive mountain big and low sagebrush, quaking aspen, and riparian deciduous woodlands (Miller et al. 1999). Current GIS data indicate that between 100,000 and 200,000 acres of western juniper dominated plant communities are within the Planning Area (BLM Ecological Site Inventory [ESI] file data). Western juniper encroachment has occurred across a variety of soil types and topography within the Planning Area. These stands also exhibit a variety of woodland development. Areas where encroachment of western juniper has been fairly recent resemble the original plant community. However, areas where woodland development is more advanced are dominated by western juniper. In these areas, western juniper has either reduced or eliminated associated woody and herbaceous vegetation. Herbaceous plant species composition is similar to the pre-encroachment plant community. On shallower soils, often found on south facing slopes, herbaceous vegetation and associated understory shrubs are more severely impacted by the developing woodlands than deeper soil areas.

Shrub species that occur in juniper woodland include big and low sagebrush, bitterbrush, rabbitbrush, currant, and snowberry. Grass species common in the juniper woodland community include bluebunch wheatgrass, Sandberg's bluegrass, Idaho fescue, western and Thurber's needlegrass, and cheatgrass. Mountain mahogany can occasionally be found at the upper elevations of this community. Among the rich array of forbs found in this community are the buckwheat and milkvetch species, balsam root, asters, phlox, pussytoes, lupine, yarrow, and phacelia species.

3.5.2.3 Grand Fir

In the Planning Area, approximately 20 acres of grand fir are present in scattered stands within the CMPA. These areas contain a mature overstory with large numbers of young trees as an understory and have marginal commercial value.

3.5.3 Wildlands Juniper Management Area

Additional information is needed to address the various challenges of juniper management. Gathering this information is one component of the 3,268-acre WJMA created by the Steens Act. As stated in the Steens Act, special management practices shall be adopted for the WJMA for the purposes of experimentation, education, interpretation, and demonstration of active and passive management intended to restore the historic fire regime and native vegetation communities on Steens Mountain. The area was selected because it is representative of western juniper woodlands across the Planning Area and it has good access for demonstration areas. Information obtained from this area will be utilized in future planning decisions and project design.

Juniper woodlands in the CMPA occur between 5,700 to 6,560 feet in elevation and are dominated by juniper. Mountain big sagebrush, Idaho fescue, needlegrass, and low sagebrush occupy drier sites in this community. Mountain mahogany, bitterbrush, wax currant, and Lemmon's needlegrass dominate the rimrock areas. Seasonally moist depressions, vernal pools, clay barrens, riparian meadows, seeps, gorge-bottom woodlands, and mesic north-facing quaking aspen dominated slopes all contribute to the habitat diversity in this community.

The restoration of historic fire regimes in the CMPA is specified in the Steens Act and discussed in the Fire Management Section (2.15). In order to reach this objective, various strategies and techniques for juniper management must be examined, including natural and prescribed burns. This is one reason that the Steens Act established the 3,268-acre WJMA and released the area from WSA status.

3.5.4 Rangelands

The Basin and Range Province in Oregon is dominated by sagebrush/native bunchgrass communities with site specific sagebrush species. The big sagebrush genera is divided into three subspecies based on physical appearance and habitat. Basin big sagebrush grows mainly on sites having moderately deep loamy soils such as droughty bottomlands and fans. Wyoming big sagebrush is present almost everywhere throughout the lower elevations of the province on slightly sandy or gravelly soils. Mountain big sagebrush occurs in similar soils, but at higher elevations.

Low sagebrush/bunchgrass communities are strongly dominant on shallow to very shallow stony upland lithic soils. Silver sagebrush dominates internally drained basins with seasonally saturated soils. Black sagebrush/bunchgrass communities are found on shallow soils with a calcareous layer. Perennial grassland communities do not form a major climax vegetation type, although they do dominate for a period following fire when the shrub component is eliminated. Although western juniper generally occurs as a vegetation type in many woodland communities, it has also invaded big sagebrush/bunchgrass and low sagebrush/bunchgrass communities on mesic sites where it has not been limited by wildland fires.

Vegetation is seeded in some lower elevation areas, mostly following wildland fires, to establish a perennial ground cover that will keep invasive annual cheatgrass from dominating the site. The seed mixture is chosen for its adaptability to the particular site. Native plant seed, especially locally obtained seed, is preferred for seeding; however, native species do not always become established as quickly as is desired. Native seed may be more difficult to obtain since plant nursery sources for growing and collection of seed are limited at this time. Desirable nonnative species, such as crested wheatgrass, forage kochia, and varieties and cultivars of native grass species are planted where needed to establish a perennial plant cover to diminish the amount of cheatgrass and lengthen the fire return interval.

The Planning Area is made up of nine major vegetation communities. The following is a general description of each community.

3.5.4.1 Big Sagebrush Shrubland Communities

Big Sagebrush shrubland is the most common vegetative cover type in southeastern Oregon. It appears as a mosaic with shrub-steppe communities over many of the unwooded areas along mountain range foothills and on the valley floor. The big sagebrush subspecies generally referred to in these communities are Wyoming big sagebrush and basin big sagebrush. There are several different mixtures of plants within the big sagebrush mosaics. The mixtures include big sagebrush with perennial grasslands, annual grasslands (cheatgrass), crested wheatgrass, bitterbrush, western juniper, black greasewood, shadscale, winterfat, and rabbitbrush.

Native grasses range from a mere presence of grass to an abundance of grass, depending on history of the site and beneficial soil/water relations. Native perennial grasses include bluebunch wheatgrass, Sandberg's bluegrass, Idaho fescue, basin wildrye, junegrass, needle and thread grass, Thurber's needlegrass, bottlebrush squirreltail, mountain brome, and Indian ricegrass. Introduced grasses are primarily cheatgrass and crested wheatgrass.

The big sagebrush community in the Planning Area occurs primarily between 4,200 and 5,500 feet in elevation. Much of the Wyoming big sagebrush habitat on the west side of Steens Mountain has been planted to crested wheatgrass and occasionally fourwing saltbush. Western juniper extends into this community from above, along basaltic fractures occupied by wax currant, ocean spray, and other shrubs. Riparian woodlands dominated by willow, alder, black cottonwood, chokecherry, and dogwood interrupt the broad expanses of sagebrush scrub.

3.5.4.2 Black Sagebrush/Grassland Communities

Black sagebrush has a limited distribution in the Basin and Range Province and is considered a "rare type" in this province. This plant community is found on shallow soil plateaus and gentle slopes. The sites have extensive areas of exposed rock. Wildland fire occurrence is rare, with a mean return interval (average number of years between fire events), of approximately 100 to 200 years. Sandberg's bluegrass is usually the dominant grass, making up most of the vegetative cover; however, other bunch grasses also occur on these sites. Black sagebrush is the dominant shrub and often the only shrub present. In some areas, these black sage stands can be extensive or may occur in a mosaic with low or big sagebrush. Shadscale, squirreltail, and cheatgrass also occur on these sites.

3.5.4.3 Silver Sagebrush/Grassland Communities

The silver sagebrush/grassland community is usually found in valley bottomlands. Silver sage is the dominant and characteristic shrub of this community. This tall shrub community is moderately to widely spaced. It grows in areas that have been deflated (eroded by wind) and subsequently partially filled with ingrained sediments. Although species such as creeping wildrye occasionally occur, the understory can be dominated by widely spaced, often robust bunchgrasses such as Nevada bluegrass.

3.5.4.4 Low Sagebrush/Grassland Communities

Low sagebrush communities are found throughout eastern Oregon, generally on areas with shallow basalt soils. Low sagebrush is the dominant and often the only shrub in the stand. Western juniper is also commonly found on this site. Other associated grasses can be bluebunch wheatgrass, Idaho fescue, Thurber’s needlegrass, Nevada bluegrass, Sandberg's bluegrass, and cheatgrass. Plants such as Lomatiums, onions, and Indian carrot are economically important to American Indian tribes and are found in this plant community. The low sagebrush plant communities usually occur on soils where rooting depth is restricted by bedrock or a heavy clay layer. The restricted rooting profile lowers the site productivity. Low sagebrush occupies some large areas of land, especially on the north and west sides of Steens Mountain. In other areas, low sagebrush plant communities are found in a complex mosaic with other sagebrush plant communities such as Wyoming and mountain big sagebrush. The sites have extensive areas of exposed rock and often do not have enough vegetation to support wildland fires. Low sagebrush can also occur within an aspen mosaic. After the snow melts and soil warms in the spring, these areas are rich with colorful and diverse perennial and annual wildflowers.

3.5.4.5 Mountain Big Sagebrush/Grassland Communities

At elevations between 5,500 and 8,000 feet in the Basin and Range Province, mountain big sagebrush communities occur on plateaus and rocky flats with minimal soil development. Sandberg's bluegrass, bluebunch wheatgrass, Idaho fescue, Nevada bluegrass, cheatgrass, bitterbrush, wax currant, snowberry, and grey rabbitbrush are common in this community type. This medium to medium-tall shrubland varies from widely spaced to fairly dense shrubs occurring on deep-soiled to stony flats, ridges, and mountain slopes, and usually in cool moist areas receiving a large snowpack. In this community, Idaho fescue is the most common and diagnostic grass.

Extensive areas in the north part of Steens Mountain were sprayed with herbicide in the late 1950s and 1960s. This was done to release more grass for livestock forage and it changed the ecology of those communities for many years. Most of those areas treated are once again dominated by mountain big sagebrush.

3.5.4.6 Mountain Shrubland Communities

Mountain shrubland is found on the steep rocky slopes of mountains in southeastern Oregon. It usually appears as a minor component within the juniper woodland types, or it grades in and out of sagebrush steppe. This cover type is commonly encountered but generally exists as units that are too small to be mapped. This widely dispersed tall shrubland grows in rock talus and rock outcrops, in soil pockets within rocky slopes, and in flatter areas with big sagebrush. The key shrub species in the mountain shrubland community are bitterbrush and snowberry, but others can be wax currant, ocean spray, chokecherry, and bitter cherry. Bitterbrush communities are found in medium-tall shrubland steppe with bunchgrass or cheatgrass understory. Bitterbrush can be dominant or codominant with big sagebrush. Idaho fescue is the characteristic native bunchgrass, with bluebunch wheatgrass codominant under bitterbrush at lower elevations. Western needlegrass is dominant at the higher elevations and where soils are more sandy. Snowberry communities are found on steep slopes between alpine habitats and riparian or sagebrush steppe.

3.5.4.7 Alpine Grassland Communities

The Alpine Bunchgrass community on Steens Mountain occurs at elevations greater than 8,000 feet. This community forms the bulk of the native perennial grassland vegetation type in the Planning Area. The highest vegetation zone on Steens Mountain has been referred to as either subalpine grassland or true alpine tundra. The dry, gravelly, windswept summit ridges have a characteristic xeric flora including cut-leaf daisy, sulfur-flowered buckwheat, balloonpod milkvetch, prairie smoke, Steens Mountain paintbrush, lance-leaf stonecrop, mountain butterweed, and needle-leaf sandwort. Dry bunchgrass communities below the ridge crests are dominated by Sandberg's bluegrass, sheep fescue, and sedges. A complex assortment of alpine wet and mesic meadows occurs in cirques and pockets where snow accumulates and provides perennial water in the form of springs or a high water table. Common species in this area include American bistort, cinquefoil, monkeyflower, speedwell, buttercup, elephant's head, sedges, rushes, tufted hairgrass, and redtop.

3.5.4.8 Modified Grassland - Crested Wheatgrass and Cheatgrass Communities

Approximately two percent of the public lands in the Planning Area have been planted with crested wheatgrass or have been invaded by cheatgrass. Both of these species originated in Eurasia and have adapted very well to these soils and climate. Cheatgrass, an annual, was inadvertently introduced into America with cattle and in hay used for ship ballast. It can out-compete the native grasses by germinating in the fall. Large expanses of cheatgrass can be the result of intense or repeated wildland fires, unsuccessful seedings, historic overgrazing, abandoned farming, or other disturbances. Cheatgrass dominated rangelands are grazed in the late winter and early spring by livestock and in some areas provide significant forage value. Weedy native and exotic annual forbs may also be present or even dominate on some sites. Some of the weedy forbs found on disturbed rangelands include tumble mustard, filaree, tumbleweed, burr buttercup, clasping peppergrass, halogeton, and bull thistle.

In the past, many acres were planted with crested wheatgrass for livestock forage and soil stability. Crested wheatgrass was seeded after wildland fires, or after the shrub cover was removed by plowing, disking, chaining or spraying herbicide. Some of these sites may remain in a dominant crested wheatgrass community for about ten years until sagebrush and rabbitbrush recolonize the site. Other sites, where the seed source for sagebrush has been depleted, have not changed for more than 30 years. Crested wheatgrass remains the dominant grass species in many areas of the northwest part of the Planning Area. This vegetation type is often restricted to foothill margins and gentle terrain in close proximity to valley bottoms. The undisturbed remnants of this type (primarily on steeper slopes) are dominated by native perennials. Green and gray rabbitbrush are common, and Wyoming big sagebrush occurs locally when the seedings have aged.

Other desirable nonnative species as well as varieties and cultivars of native grass species have been seeded in modified grassland types following a wildland fire, to keep cheatgrass or other introduced annual species from becoming established. Some of the nonnative species seeded include: forage kochia, appar blue flax, tall wheatgrass, secar bluebunch wheatgrass, siberian wheatgrass, paiute orchardgrass, ladak alfalfa, and nomad alfalfa. The varieties and cultivars of native grass species include: nezpar Indian ricegrass, goldar bluebunch wheatgrass, magnar basin wildrye, trailhead basin wildrye, and arriba western wheatgrass.

3.5.4.9 Salt Desert Shrub/Grassland Communities

A large portion of the southern end of the Planning Area is dominated by salt desert shrub plant communities. These communities make up most of the types on the valley bottoms near playas and also occur on shallow soils in the foothills. The dominant shrub species in this type is black greasewood. Greasewood grows with Wyoming big sagebrush in the deeper soils at the edge of the foothills, and with saltgrass on the extremely alkaline soils of the valley bottom. Other shrub species common to the salt desert shrub community include shadscale, bud sage, spiny hopsage, fourwing saltbush, winterfat, rabbitbrush, and horsebrush. Some of the common understory grasses in this type include saltgrass, Indian ricegrass, basin wildrye, squirreltail, and cheatgrass.

3.5.5 Noxious Weeds

Noxious weeds are present throughout the Planning Area. These weeds become introduced in the Planning Area where disturbance has occurred. The road networks provide a major vector for introduction and spread. The weed control program is dynamic, due to new weed introduction and the ongoing implementation of varied control methods. Grazing and fire management, as well as chemical, mechanical, and biological control methods, are used as part of an integrated weed management program. These methods are subject to a site specific determination of appropriate techniques. The BLM monitors the changes in distribution and new introductions of noxious weeds on an annual basis.

In Oregon, as well as in other western states, noxious weeds are so thoroughly established and spreading so rapidly that they have been declared a menace to the public welfare (Oregon Revised Statute [ORS] 570.505). Noxious weed invasion contributes to the loss of rangeland productivity, increased soil erosion, reduced species and structural diversity, and loss of wildlife habitat. In some instances, such invasion is hazardous to human health and welfare, as emphasized in the Federal Noxious Weed Act (PL 93-629). Some weed species pose a threat to multiple use management of public land.

Noxious weeds cannot be adequately controlled unless federal, state, county, and private interests work together. The Carlson-Foley Act (PL 90-583), as well as state and county laws, make the federal government responsible for control of weeds on public land and provide direction for their control. The Burns DO of the BLM operates under the weed protocols set forth in the following documents: Vegetation Treatment on BLM Lands in Thirteen Western States FEIS and ROD (USDI 1991), Supplement to the Northwest Area Noxious Weed Control Program FEIS and ROD (USDI 1987), and the Burns District Noxious Weed Management Program EA #OR-020-98-05 (USDI 1998a).

The ODA has developed a classification system to provide guidelines for implementing and prioritizing noxious weed control programs, to assist in the distribution of limited funds, and to serve as a model for other weed classification systems (ODA 1997). This system defines three classes of noxious weed species: 1) weeds that pose a known economic threat and occur in infestations small enough to make eradication or containment possible; 2) weeds that pose an economic threat and whose regional abundance limits control techniques primarily to biological methods; and 3) weeds for which the ODA will implement a statewide management plan.

Harney County has listed and classified the noxious weeds currently present or that occur in close proximity to Harney County. The weeds are rated as A, B, or C pests. Weeds rated as “A” pests are of known economic importance, are known to occur in the county in small enough infestations to make eradication practicable, or are not known to occur but have “A” status in surrounding counties so that future occurrence seems imminent. Weeds rated as “B” pests are of known economic importance, are of limited distribution in the county, and are subject to intensive control or eradication where feasible at the county level. Weeds rated as “C” pests are of known economic importance and of general distribution that is subject to control, intensive control, or eradication as local conditions warrant. See Table 3.5.3 for the complete list of noxious weeds known to occur in the Planning Area.

3.6 Fish and Wildlife

As a public land administrator in Oregon, the BLM is responsible for managing a wide array of habitats used by native and introduced fish and wildlife species. The ODFW is responsible for managing animal populations. The BLM manages fish and wildlife and their habitats in cooperation with the ODFW. Management is directed toward maintenance, improvement, and expansion of habitat quality and quantity under multiple use considerations. Management programs designed to benefit wildlife consider both population and habitat.

Table 3.5.3: Noxious Weed Species in the Planning Area

Common Name	Scientific Name	County Rating	Reported in AMU	Reported in CMPA	No Reports in Planning Area
Bindweed, field	*Convolvulus arvensis*	C	X	X	
Black henbane	*Hyoscyamus niger*	A	X		
Bull thistle	*Cirsium vulgare*	NR	X	X	
Canada thistle	*Cirsium arvense*	C	X	X	
Dalmatian toadflax	*Linaria dalmatica*	B	X	X	
Diffuse knapweed	*Centaurea diffusa*	A	X	X	
Halogeton	*Halogeton glomeratus*	C	X		
Leafy spurge	*Euphorbia esula*	A			X
Mediterranean sage	*Salvia aethiopis*	B	X	X	
Medusahead	*Taeniatherum caput-medusae*	B		X	
Musk thistle	*Carduus nutans*	A			X
Perennial pepperweed	*Lepidium latifolium*	B	X	X	
Puncturevine	*Tribulus terrestris*	B	X		
Purple loosestrife	*Lythrum salicaria*	A			X
Rush skeletonweed	*Chondrilla juncea*	A			X
Russian knapweed	*Acroptilon repens*	B	X	X	
Scotch thistle	*Onopordum acanthium*	B	X	X	
smallflower tamarisk	*Tamarix parviflora*	A	X	X	
scotchbroom	*Cytisus scoparius*	A			X
spotted knapweed	*Centaurea maculosa*	A	X	X	
squarrose knapweed	*Centaurea virgata var. squarrosa*	A			X
Klamathweed	*Hypericum perforatum*	C	X	X	
tansy ragwort	*Senecio jacobaea*	A		X	
whitetop	*Cardaria draba*	C	X	X	
yellow starthistle	*Centaurea solstitialis*	A	X	X	
yellow toadflax	*Linaria vulgaris*	A		X	

3.6.1 Fish and Aquatic Habitat

Fish inhabit perennial and intermittent streams, springs, ponds, lakes, and reservoirs throughout the Planning Area. The AMU and CMPA contain approximately 430 miles and 370 miles of perennial streams, and 58,600 acres and 1,337 acres of reservoirs, ponds, and lakes, respectively.

Public land in the Planning Area provides habitat for a total of 11 native fish species, distinct subspecies or distinct populations, and several introduced fishes (Table 3.6.1). A high proportion of the native fish fauna is endemic to relatively localized regions, primarily due to the unique post-Pleistocene climatic and geologic history of the Great Basin.

Of the 11 native fish populations, four have distributions that are restricted to the Planning Area for a major portion of their range (the Catlow Valley population of Great Basin redband trout, Borax Lake chub, Catlow Valley tui chub, Alvord chub). These four species are discussed in section 3.7.3.

Two fish found in the Planning Area are listed as threatened or endangered by both the State of Oregon and the federal government (Lahontan cutthroat trout and Borax Lake chub). Five species or populations are considered assessment, tracking, or sensitive by the BLM. One amphibian, the Columbia Spotted Frog, is a candidate for listing under the ESA and is discussed in the Wildlife Section of this document.

Table 3.6.1: Fish Species or Subspecies within the Planning Area

Common Name	Scientific Name	Status			Native
		BLM	State[1]	Federal[2]	
Lahontan cutthroat trout	*Oncorhynclus clarki henshawi*		T	T	X
Great Basin redband trout	*Oncorhynchus mykiss*	Tracking		S	X
Brook trout	*Salvelinus fontinalis*				
Brown trout	*Salmo trutta*				
Rainbow trout, generic	*Oncorhynchus mykiss*				
Mountain whitefish	*Prosopium williamsoni*				X
Malheur mottled sculpin	*Cottus bairdi ssp.*	Sensitive			X
Borax Lake chub	*Gila boraxobius*		E	E	X
Catlow Valley tui chub	*Gila bicolor spp.*	Tracking		S	X
Alvord chub	*Gila alvordensis*	Assessment			X
Longnose dace	*Rhinichthys cataractae*				X
Speckled dace	*Rhinichthys osculus*				X
Redside shiner	*Richardsonium balteatus*				X
Largescale sucker	*Catostomus macrocheilus*				X
Bridgelip sucker	*Catostomus columbianus*				X

[1]State Status (ODFW): E-endangered; T-threatened
[2]Federal Status (USFWS): T-threatened; S-Species of special concern with conservation agreements.

A variety of nonnative fish species have been introduced to the Planning Area. The ODFW periodically stocks hatchery rainbow trout in Krumbo Reservoir, Fish Lake, and three small stock-water reservoirs in the Planning Area; and Lahontan cutthroat trout in Mann Lake. The Kings River has a self-sustaining population of rainbow trout established from previous stockings. Past rainbow trout stocking of the Trout Creek system has resulted in a self-sustaining population of rainbow-cutthroat hybrids. Currently, the ODFW does not stock any streams within the Planning Area. Brook trout, hatchery rainbow trout, and mixed-strain Lahontan cutthrout trout occur within the Planning Area from past stocking. Other fish introductions include crappie, which have become established in Rock Creek Reservoir. Several other transplants (guppies and other aquarium fish, several types of sunfish) are commonly found in Great Basin aquatic systems, the result of unauthorized introductions by private individuals (Sigler and Sigler 1987). These species may be present in the Planning Area.

The Planning Area contains other native nongame species such as mountain whitefish and speckled dace, with a full complement of Malheur Lake fish species occurring in the Donner und Blitzen River and McCoy Creek.

The condition of fish populations is highly dependent on the quantity and quality of available habitat.

The condition of aquatic habitat, in turn, is a reflection of physical and biological processes operating throughout the watershed. Streams, for example, transport water and sediment through a watershed. Changes in rates of erosion in

upland areas can therefore affect stream ecosystems (e.g., increases in fine sediment supply to the stream negatively affect salmonid spawning and the production of aquatic macroinvertebrates, an important food source for all fish). The integrity of uplands in the watershed therefore may have consequences for the health of aquatic ecosystems.

Fish habitat is also dependent on the integrity of the stream channel, floodplain, and adjacent riparian vegetation. Riparian vegetation moderates water temperature, adds structure to the banks to reduce erosion, and provides overhead cover for fish. Intact vegetated floodplains dissipate stream energy, store water for later release, and provide rearing areas for juvenile fish. Well-established riparian woodlands also supply woody debris to the stream channel, an important component in developing habitat complexity in stream channels.

Since riparian vegetation and fish habitat are ecologically interconnected, the condition of riparian habitat is an indicator of the condition of fish habitat. Riparian Condition and Trend surveys conducted in the Planning Area during the 1970s and 1980s on 286.5 miles of riparian habitat indicated that 38 percent were considered "Good" to "Excellent" condition and 62 percent as "Fair" to "Poor" condition (Table 3.6.2). These surveys further indicated that 54 percent of the riparian habitat rated as "Fair" and "Poor" were in an improving trend. Subsequent observations and monitoring suggest further improvement in riparian condition of many stream reaches in the Planning Area.

Table 3.6.2: Riparian Condition Ratings during the 1970s and 1980s for Streams in the AMU and CMPA

	AMU		CMPA	
Condition Rating	**Miles**	**Percent**	**Miles**	**Percent**
Excellent	35.1	22	6.4	5
Good	41.1	26	26.3	21
Fair	63.4	39	55.6	44
Poor	21.6	13	37	30
Total	76.2	100	125.3	100

Water quality is another indicator of the condition of fish habitat. Several streams in the Planning Area in the Donner und Blitzen, Guano, and Alvord Lake Subbasins have been listed as water-quality limited for exceeding the temperature standard. Most of these streams contain special status fish species. Special status fish species are discussed in detail in Section 3.7.3.

Fisheries management in the Planning Area is ongoing to restore, maintain, or improve habitat to provide for diverse and self-sustaining communities of fishes and other aquatic organisms. Consistent with these management objectives, the Steens Act designated the RTR. These areas are discussed in section 3.7 (Special Status Species) and in section 3.24 (Wild and Scenic Rivers).

The area also provides habitat for the Columbia spotted frog, a Federal Candidate species, and the Pacific chorus frog.

3.6.2 Wildlife and Wildlife Habitat

The Planning Area provides diverse habitat including sagebrush steppe, riparian and wetlands, and juniper woodlands. Wildlife species utilizing the habitat include upland game bird species, Rocky Mountain elk, mule deer, pronghorn antelope, California bighorn sheep, cougars, raptors, waterfowl, shorebirds, wading birds, neotropical migratory birds, reptiles, amphibians, and invertebrates. A list of some of the wildlife species known to inhabit the Planning Area is included in Appendix L. The following section describes the major wildlife habitat and species found in the Planning Area.

3.6.2.1 Wildlife Habitat

The sagebrush steppe includes several upland vegetation communities with a shrubland character and a variable understory of grasses and forbs. The presence of a shrub overstory is associated with wildlife community diversity. Shrubby plants are important to most small and large wildlife because they supply food as well as hiding cover and

structure. Within the sagebrush steppe community, grasses and forbs provide food and cover for wildlife. Habitats that provide a mix of grasses and forbs meet the needs of a wide range of species.

Riparian areas consist of plant communities associated with streams and rivers. The structure, food, and water available in these areas make them the single most diverse and productive wildlife habitat. Well-developed riparian areas with trees, shrubs, grasses, forbs, sedges, and rushes provide valuable habitat for a wide array of wildlife species. Wetlands consisting of either permanently or seasonally wet areas, are associated with various landscape settings including reservoirs, sloughs, playas, meadows, springs, and seeps. Wetlands typically provide succulent green forage, insects, and drinking water for wildlife. Riparian and wetland areas that do not support diverse plant communities still provide important sources of water and food for wildlife.

The juniper woodlands provide habitat for a large number of species supported within the Planning Area. These woodlands vary greatly in their habitat value depending on factors such as height, density, and age of trees. Older trees may provide cavities for nesting birds while deer and elk use juniper for thermal and escape cover. The distribution of juniper (normally between 5,700 to 6,560 feet elevation) influences the condition and quality of neighboring wildlife habitat.

Forested habitat in the Planning Area is limited to 90 acres of a relic grand fir grove of which 20 acres occupy public land. This area contains a mature overstory with a large number of young trees in the understory with marginal commercial value.

3.6.2.2 Mule Deer

Mule deer are widespread throughout the Planning Area. They are typically associated with complex mid- to upper-elevation plant communities supporting a wide variety of sagebrush, mountain shrubs, aspen, juniper, and herbaceous vegetation. Mule deer browse on shrubs and forbs, which provide most of their annual diet.

Thermal cover is critical on winter range to provide protection from wind and other adverse elements. Grassy slopes, meadows, brush fields, and other early successional stages (artificially created and otherwise) provide the majority of deer forage. During hot summer weather, aspen stands and juniper/big sage/antelope bitterbrush shrublands function as thermal cover, reducing heat stress on the animals.

Transition range can be divided into spring and fall. The vegetation of the spring transition range is similar to winter range and consists of sagebrush and juniper woodland. Grasses and forbs are important components of the spring transitional ranges. The fall transitional ranges are vegetatively similar to summer ranges and consist primarily of aspen, shrub steppe, and juniper woodland communities. Maintaining migratory routes is critical to the seasonal deer movements.

The winter range, which encompasses 537,929 acres in the Planning Area, is concentrated along the east margin of Steens Mountain adjacent to the Alvord Desert, along the western lower elevations of Steens Mountain down to the east margin of Catlow Valley, along Pickett Rim, Malheur Wildlife Refuge, and in the lower elevations of the Pueblo Mountains and Trout Creek Mountains. The winter range occurs primarily in juniper woodland and sagebrush communities with interspersed grasses. Shrubs are a major component of the winter diet, primarily antelope bitterbrush, big sagebrush, curl-leaf mountain mahogany, and western juniper. When snow conditions make higher elevations unsuitable, deer will move to suitable habitat in lower elevations. Deer tend to remain at the highest possible elevations until forced to winter concentration areas by snowfall.

Mule deer numbers have been lower than management objective levels for several years with the Steens Unit at approximately 50 to 60 percent of management objective levels and the Juniper Unit at approximately 70 percent of management objective levels. The decline in numbers is probably due to a combination of factors including but not limited to drought, predators (ODFW information), and winter range condition.

3.6.2.3 Pronghorn Antelope

Pronghorn antelope are distributed throughout the Planning Area. Winter range for pronghorn antelope is concentrated in Catlow Valley, Hawks Valley, the southeast end of the Pueblo Mountains, the Fields area, along the eastern base of Steens Mountain, Krumbo Reservoir, and north of Frenchglen. During the summer, pronghorn antelope are widely distributed throughout the Planning Area in habitats having low structure and a mixture of grasses, forbs, and shrubs.

Sagebrush is used for both cover and forage. Seedings and wildland fires have converted some previously dense stands of sagebrush into suitable range.

BLM livestock water developments, particularly pipelines, have allowed pronghorn antelope to expand into formerly unoccupied areas. Forage competition with cattle and wild horses is slight due to forage preferences (Vavra and Sneva 1978). Lack of water at natural or developed sites can be a serious problem during periods of drought. BLM fence construction specifications allow pronghorn to move freely by having smooth bottom wires spaced at least 16 inches above ground level.

When coyote numbers are high, coyote predation of pronghorn kids appears to be a primary factor limiting fawn recruitment. Pronghorn populations within the Planning Area are currently slightly above the ten year average.

3.6.2.4 Raptors

Raptors, which include predatory birds such as hawks, eagles, falcons, and owls can be found throughout much of the Planning Area. Local areas provide exceptionally high-quality raptor habitat and support high-density breeding populations. Common breeding species include the red-tailed hawk, Swainson's hawk, prairie falcon, American kestrel, golden eagle, northern harrier, sharp-shinned hawk, Cooper's hawk, and long-eared owl. Other less common breeders that may be found locally include the ferruginous hawk, burrowing owl, and northern goshawk. Important nesting habitats are in juniper and quaking aspen vegetation types. Volcanic ledges and buttes are often excellent nesting sites for many species. Prey species are more likely to be available for a wide range of raptors when plant communities are structurally diverse and support mixtures of grasses, forbs, and shrubs.

Many breeding species also winter within the Planning Area. Species that only winter in the area include the rough-legged hawk and northern bald eagle. Rangeland treatments and power line locations and configurations are examples of actions that potentially threaten raptor reproduction and survival. Local utility companies have cooperated in the past to design power facilities which have greatly reduced the number of raptor electrocutions.

3.6.2.5 Neotropical Migratory Birds

The Planning Area supports a wide variety of neotropical migratory bird species (more than 110 species) that breed in the United States and winter in Central or South America. Populations of some of these species are declining as a consequence of global land use practices and other factors. Neotropical migratory birds exhibit variable habitat requirements and are found in several habitat types. Some of the birds in this category include song sparrow, chipping sparrow, Brewer's sparrow, downy woodpecker, hairy woodpecker, yellow-rumped warbler, yellow warbler, dusky flycatcher, Bullock's oriole, American robin, mourning dove, Cassin's finch, rufous hummingbird, Western tanager, pine siskin, violet-green swallow, and lesser goldfinch.

3.6.2.6 Waterfowl and Shorebirds

As many as 70 species of waterfowl, shorebirds, and wading birds may use the area due to the nearby wetland habitat of the Malheur NWR and private lands. Representative species include Canada goose, cinnamon teal, mallard, gadwall, American avocet, white-faced ibis, Wilson's phalarope, greater sandhill crane, great blue heron, and spotted sandpiper. These species exhibit variable habitat requirements and are found in several habitat types.

3.6.2.7 Rocky Mountain Elk

The Rocky Mountain elk is one of Oregon's primary big game species found in the Planning Area. Since elk are also valued by the public for wildlife viewing, interest is high relative to the population levels and habitat conditions. The elk population remains near ODFW population objectives. Approximately 400 adult elk summer at mid to upper elevations on Steens Mountain and winter at mid to lower elevations.

Juniper trees have allowed for the expansion of elk into areas not seen in the past by providing hiding cover that allows for escape from human disturbance.

Winter range is an important consideration in managing elk populations. The winter range in the Planning Area covers approximately 84,871 acres. During winter, elk use south-facing slopes and lower elevations because of warmer

temperatures, reduced snow depths, and available forage. During periods of hot summer weather, north-facing slopes, high elevation western juniper/shrub sites, and aspen stands provide important thermal cover.

3.6.2.8 Chukar

Chukar are one of the main upland game bird species found in the planning area. They inhabit sparsely vegetated rocky canyons, slopes, and hillsides and can be found in sagebrush flats, grasslands and open juniper canyon lands. Chukar are an introduced species to Oregon and are primarily a seed eater with cheatgrass seed being a favored food. Insects may also be part of the adult diet but chick diets may consist largely of insects. Seasonal use areas vary with climatic conditions and the availability of water.

Economically, chukar hunters spend approximately $1,000,000 per year on trip related expenses (transportation, food, lodging) in Harney County. This is approximately one-quarter of the amount spent annually for all hunting in Harney County.

3.6.2.9 Animal Damage Control

Animal damage control is an activity of the USDA-Agricultural Plant and Animal Health Inspection Service (APHIS). This activity is authorized by federal law under the Animal Damage Control Act (7 USC 426-426b) and by Oregon State Law under ORS 610.105, authority to Control Noxious Rodents or Predatory Animals.

The roles and responsibilities of the BLM and USDA-APHIS are specified under an MOU between the BLM and USDA-APHIS, which was signed on March 21, 1995. According to this memorandum, USDA-APHIS is responsible for environmental analysis documents associated with their control actions on public land. This EA was completed in 1996 for the John Day District, which covers eastern Oregon. The BLM identifies human safety areas or other resource management concerns where actions are proposed; therefore, this program will not be analyzed further. Areas of animal damage control activity are identified to the BLM on an annual basis.

3.7 Special Status Species

Special status species are plant or animal species known or suspected to be limited in distribution, rare or uncommon within a specific area, or vulnerable from activities which may affect their survival.

3.7.1 Plants

Table 3.7.1 lists 73 special status plant species found in the Planning Area. These species receive priority attention for inventory, research, and monitoring efforts. Federal, state, and nongovernmental agencies have been consulted to assure their protection and management. Special status plant surveys are made prior to land exchanges, range and wildlife projects, proposed mining operations, and other surface disturbing activities.

Nearly all of the plants on the list are rare in Oregon, but common or stable in areas outside of Oregon. There are no known threatened or endangered plant species in the Planning Area. Special status plant species occur in a variety of plant associations and on a variety of physical habitats, many of which have distinctive soil types. Several special status species often occur together. When a new location for a special status plant species is observed, the information is documented and reported to the Oregon Natural Heritage Program (ONHP), where it is permanently recorded.

Table 3.7.1: Special Status Species Plants in the Planning Area

Common Name	Scientific Name	BLM Status	ONHP Status	CMPA	AMU
Alvord milkvetch	*Astragalus alvordensis*	T	L4		X
alpine fescue	*Festuca brachyphylla*	T	L3	X	
alpine lily	*Lloydia serotina*	T	L3	X	
awned sedge	*Carex atherodes*	T	L4		X
Back's sedge	*Carex cordillerana*	A	L2	X	

Common Name	Scientific Name	BLM Status	ONHP Status	CMPA	AMU
Bellard's kobresia	*Kobresia bellardii*	A	L2	X	
Biddle's lupine	*Lupinus biddlei*	S	L4	X	X
Bigelow's four-o'clock	*Mirabilis bigelovii var retrorsa*	A	L2		X
capitate sedge	*Carex capitata*	T	L2	X	
Cusicks's draba	*Draba cusickii*	T	L2	X	
Cusick's hyssop	*Agastache cusickii*	A	L2	X	X
dark alpine sedge	*Carex subnigricans*	T	L2	X	
Davidson's penstemon	*Penstemon davidsonii var. praeteritus*	T	L4	X	X
Davis' peppergrass	*Lepidium davisii*	S	L1		X
desert needlegrass	*Achnatherum speciosum*	A	L2	X	X
desert chaenactis	*Chaenactis xantiana*	A	L2		X
discoid goldenweed	*Ericameria discoidea var discoidea*	T	L4	X	
Drummond willow	*Salix drummondiana*	T	L4	X	
dwarf evening primrose	*Camissonia pygmaea*	S	L1	X	
ephemeral monkey flower	*Mimulus evanescens*	S	L1	X	
flowering quillwort	*Lilaea scilloides*	T	L3		X
foetid sedge	*Carex vernacular*	A	L2	X	
fourwing milkvetch	*Astragalus tetrapterus*	T	L4		X
gray moonwort	*Botrychium minganense*	A	L2	X	
hairstemmed rush	*Juncus capillaris*	T	L3	X	
hairy wild cabbage	*Caulanthus pilosus*	T	L4		X
Hayden's cymopterus	*Cymopterus nivalis*	A	L2	X	
Hayden's sedge	*Carex haydeniana*	T	L4	X	
hedgehog cactus	*Pediocactus simpsonii var. robustior*	T	L4	X	X
iodine bush	*Allenrolfea occidentalis*	A	L2		X
Janish's penstemon	*Penstemon janishiae*	T	L3	X	
Kruckeberg's holly fern	*Polystichum kruckebergii*	T	L4	X	
lance-leaved grapefern	*Botrychium lanceolatum*	A	L2	X	
large-flowered chaenactis	*Chaenactis macrantha*	T	L4		X
least rush	*Juncus hemiendytus var. abjectus*	T	L3	X	
long-flowered snowberry	*Symphoricarpos longiflorus*	A	L2	X	X
lyrate malacothirx	*Malacothrix sonchoides*	T	L3		X
Malheur cryptantha	*Cryptantha propria*	T	L4		X
moonwort	*Botrychium lunaria*	A	L2	X	
montane pepperwort	*Lepidium montanum var. nevadense*	T	L3		X
moss gentian	*Gentiana prostrata*	A	L2	X	
mosslike dwarf rush	*Juncus bryoides*	T	L3	X	
naked-stemmed phacelia	*Phacelia gymnoclada*	A	L2		X

Common Name	Scientific Name	BLM Status	ONHP Status	CMPA	AMU
narrowleaf cottonwood	*Populus angustifolia*	T	L4	X	X
new sedge	*Carex nova*	A	L2	X	
nodding melic	*Melica stricta*	T	L4	X	X
ochre-headed buckwheat	*Eriogonum ochrocephalum ssp. calcareum*	T	L4		X
pale paintbrush	*Castilleja pallescens var. inverta*	T	L3		X
pinnate grapefern	*Botrychium pinnatum*	A	L2	X	
prickly poppy	*Argemone munita ssp. rotundata*	A	L2	X	X
purple cymopterus	*Cymopterus purpurascens*	A	L2		X
Rafinesque's pondweed	*Potamogeton diversifolius*	A	L2	X	X
Raven's lomatium	*Lomatium ravenii*	A	L2		X
Rocky Mtn. Helianthella	*Helianthella uniflora var. uniflora*	T	L3	X	
salt heliotrope	*Heliotropium curassavicum*	T	L3		X
short-fruited willow	*Salix brachycarpa var. brachycarpa*	T	L4	X	
short-lobed penstemon	*Penstemon seorsus*	T	L3	X	X
Siberian water-milfoil	*Myriophyllum sibiricum*	T	L3	X	X
Sierra willow	*Salix orestera*	T	L3	X	
Sierran springbeauty	*Claytonia nevadensis*	T	L4	X	
sky pilot	*Polemonium viscosum*	T	L4	X	
slender gentian	*Gentianella tenella*	A	L2	X	
slender wild cabbage	*Caulanthus major var. nevadensis*	S	L2		X
Steens Mountain paint brush	*Castilleja pilosa var. steenensis*	S	L4	X	
teacher's sedge	*Carex praeceptorum*	T	L3	X	X
thick-stemmed wild cabbage	*Caulanthus crassicaulis*	T	L4		X
Tiehm's rush	*Juncus tiehmii*	T	L3	X	
Torrey's malacothrix	*Malacothrix torreyi*	T	L4		X
two-stemmed onion	*Allium bisceptrum*	T	L4		X
verrucose seapurslane	*Sesuvium verrucosum*	A	L2		X
weak-stemmed stonecrop	*Sedum debile*	T	L4	X	
wedge-leaf saxifrage	*Saxifraga adscendens var.oregonensis*	A	L2	X	
white-flowered penstemon	*Penstemon pratensis*	T	L3	X	X

BLM Status

S=Sensitive - species that could easily become endangered or extinct in a state, are restricted in range, and have natural or human-caused threats to survival.

A=Assessment - species not presently eligible for official federal or state status but are still of concern and need protection or mitigation in BLM activities.

T=Tracking - species that may become of concern in the future, but more information is needed to determine status for management purposes.

ONHP Status

L1 - taxa threatened with extinction or presumed to be extinct throughout their range.

L2 - taxa threatened with extirpation or presumed to be extirpated from the State of Oregon.

L3 - taxa of conservation concern that need more information to determine status.

L4 - taxa which are of concern because they are rare and stable or common and declining.

3.7.2 Animals

Sixty-two species of special status animals occur on public lands, within the Planning Area (Table 3.7.2). Special status designations are assigned for many reasons including limited distribution, habitat loss resulting from environmental impacts, suspected or documented population declines, or some combination of these factors. These are priority species for various surveys to determine their distributions, abundance, and habitat preferences.

Table 3.7.2: Special Status Animal Species in Southeastern Oregon

Common Name	Scientific Name	Status				Location (CMPA or AMU)
		Fed	BLM	OR	ONHP	
Amphibian						
Columbia spotted frog	*Rana luteiventris*	FC			L2	CMPA
western toad	*Bufo boreas*		BT		L3	CMPA
Bird						
American white pelican	*Pelecanus erythrorhynchos*		BA		L2	Both
bank swallow	*Riparia riparia*		BT		L4	Both
black rosy finch	*Leucosticte atrata*		BT		L4	CMPA
black tern	*Chlidonias niger*	SoC	BT		L4	CMPA
black-throated sparrow	*Amphispiza bilineata*		BT		L2	Both
bobolink	*Dolichonyx oryzivorus*		BT		L4	CMPA
broad-tailed hummingbird	*Selasphorus platycercus*		BT		L4	Both
Columbia sharp-tailed grouse	*Tympanuchus phasianellus columbianus*	SoC	BS		L1	Both[#]
ferruginous hawk	*Buteo regalis*	SoC	BS		L2	Both
flammulated owl	*Otus flammeolus*		BS		L4	CMPA
Forster's tern	*Sterna forsteri*		BT		L3	Both
Franklin's gull	*Larus pipixcan*		BA		L2	Both
great egret	*Casmerodius albus*		BT		L3	Both
Greater sage-grouse	*Centrocercus urophasianus*	SoC	BS		L2	Both
greater sandhill crane	*Grus canadensis ssp.*		BT		L4	Both
horned grebe	*Podiceps auritus*		BT		L4	CMPA
least bittern	*Ixobrychus exilis*	SoC	BA		L2	CMPA
loggerhead shrike	*Lanius ludovicianus*		BT		L4	Both
mountain quail	*Oreortyx pictus*	SoC	BT		L4	Both
northern bald eagle	*Haliaeetus leucocephalus*	FT		ST	L1	Both
northern goshawk	*Accipiter gentilis*	SoC	BS		L3	CMPA
olive-sided flycatcher	*Contopus cooperi*		BT		L3	Both
peregrine falcon	*Falco peregrinus ssp.*		BS	SE	L1	CMPA
pinyon jay	*Gymnorhinus cyancephalus*		BT		L4	Both

Common Name	Scientific Name	Status				Location (CMPA or AMU)
		Fed	BLM	OR	ONHP	
sage sparrow	*Amphispiza belli*		BS		L4	Both
snowy egret	*Egretta thula*		BA		L4	Both
Swainson's hawk	*Buteo swainsoni*		BT		L4	Both
western burrowing owl	*Athene cunicularia*	SoC	BS		L2	CMPA
western snowy plover (inland)	*Charadrius alexandrinus*			ST	L2	AMU
white-faced ibis	*Plegadis chihi*	SoC	BT		L4	Both
willow flycatcher	*Empidonax traillii adastus*	SoC	BT		L4	Both
yellow-billed cuckoo	*Coccyzus americanus*	FC	BS		L2	CMPA
Fish						
Alvord chub	*Gila alvordensis*	SoC	BA		L2	Both
Borax Lake chub	*Gila boraxobius*	FE		SE	L1	AMU
Catlow Valley tui chub	*Gila bicolor ssp.*	SoC	BT		L3	Both
Great Basin redband trout	*Oncorhynchus mykiss ssp.*	SoC	BT		L3	Both
Lahontan cutthroat trout	*Oncorhynchus clarki henshawi*	FT		ST	L1	Both
Malheur mottled sculpin	*Cottus bairdi ssp.*	SoC	BS		L3	Both
Mammal						
California bighorn sheep	*Ovis canadensis ssp.*	SoC	BT		L4	Both
California wolverine	*Gulo gulo*	SoC		ST	L2	CMPA
Canada lynx	*Lynx canadensis*	FT			L2	CMPA*
fringed myotis	*Myotis thysanodes*	SoC	BT		L3	Both
gray wolf	*Canis lupus*	FE		SE	L2-ex	Extirpated
kit fox	*Vulpes velox*			ST	L2	AMU
long-eared myotis	*Myotis evotis*	SoC	BT		L4	Both
long-legged myotis	*Myotis volans*	SoC	BT		L3	Both
pallid bat	*Antrozous pallidus*	SoC	BT		L3	Both
Preble's shrew	*Sorex preblei*	SoC	BT		L3	Both
pygmy rabbit	*Brachylagus idahoensis*	SoC	BA		L2	AMU
silver-haired bat	*Lasionycteris noctivagans*	SoC	BT		L3	Both
spotted bat	*Euderma maculatum*	SoC	BA		L2	Both
Townsend's big-eared bat	*Corynorhinus townsendii*	SoC	BS		L2	Both
western small-footed myotis	*Myotis ciliolabrum*	SoC	BT		L3	Both
white-tailed antelope ground squirrel	*Ammospermophilus leucurus*		BT		L3	Both
white-tailed jackrabbit	*Lepus townsendii*		BT		L3	Both
Yuma myotis	*Myotis yumanensis*	SoC	BT		L4	Both

Common Name	Scientific Name	Status				Location (CMPA or AMU)
		Fed	BLM	OR	ONHP	
Reptile						
desert horned lizard	*Phrynosoma platyrhinos*		BT		L3	Both
long-nosed leopard lizard	*Gambelia wislizenii*		BT		L4	Both
Mojave black-collared lizard	*Crotophytus bicinctores*		BT		L3	Both
northern sagebrush lizard	*Sceloporus graciosus*	SoC	BT		L4	Both

Status:
FE=Federal Endangered: A species which is in danger of becoming extinct within the forseeable future throughout all or a significant portion of its range.
FT=Federal Threatened: A species that is likely to become endangered within the forseeable future.
FC=Federal Candidate: A species for which the USFWS or National Marine Fisheries Service have sufficient information to support a proposal for listing as Threatened or Endangered under the ESA.
SoC=Species of Concern: A former C2 candidate species which needs additional information in order to propose as threatened or endangered under the ESA. The USFWS is reviewing species information for consideration as Candidates for listing under the ESA.
SE=State Endangered: A species which is in danger of becoming extinct within the foreseeable future throughout all or a significant portion of its range. This species may be extirpated from its range within the state.
ST=State Threatened: An animal that could become endangered within the foreseeable future within all or a portion of its range.
BS=Bureau Sensitive: Species that could easily become endangered or extinct in a state, are restricted in range, and have natural or human-caused threats to survival.
BA=Bureau Assessment: Species not presently eligible for official federal or state status but are still of concern and need protection of mitigation win BLM activities.
BT=Bureau Tracking: Species that may become of concern in the future, but more information is needed to determine status for management purposes.
Oregon Natural Heritage Program (ONHP):
L1=List 1: Taxa that are threatened with extinction or presumed to be extinct throughout their entire range.
L2=List 2: Taxa that are threatened with extirpation or presumed to be extirpated from the state of Oregon.
L3=List 3: Species for which more information is needed before status can be determined, but which may be threatened or endangered in Oregon or throughout their range.
L4=List 4: Taxa which are of concern, but are not currently threatened or endangered.
# - No longer found in the Planning Area.
* - Trapped once in the Steens Mountain, which is outside its normal range of habitat.
Extirpated - no longer within the original range of the species in Oregon. Outside of the recovery zone for gray wolves.

3.7.2.1 Northern Bald Eagle

The bald eagle was listed in 1978 as a federal threatened species in Oregon under the Federal ESA of 1973. The Planning Area supports a wintering population of northern bald eagles, but no breeding pairs. The Planning Area supports approximately ten wintering eagles, primarily in areas associated with major river systems and large reservoirs.

Some systematic winter inventories have been conducted in the Planning Area's one known winter roost site. Whether this site is used consistently or sporadically due to weather conditions and available prey is unknown. Bald eagles in the Planning Area are primarily associated with public land near the Malheur NWR.

3.7.2.2 American Peregrine Falcon

The American peregrine falcon was federally listed as an endangered species throughout its range under the Federal ESA of 1973, and as a state endangered species under the Oregon ESA (ORS 1987). The peregrine falcon was delisted in 1999 after reaching the recovery goals set forth in the 1982 Pacific Coast Recovery Plan for the American peregrine falcon.

The peregrine falcon is a cliff-nesting species. Nest sites are usually associated with cliffs near water with an abundant population of nongame birds, shorebirds, and waterfowl, the peregrine's primary prey. American peregrine falcons are occasionally seen along the Catlow Rim during fall or spring migration, but no recent nesting activity has been documented. A USFWS monitoring plan for the peregrine falcon requires the BLM to monitor actions to conserve this species.

3.7.2.3 Northern Kit Fox

The northern kit fox is a state threatened species that is present within some of the salt desert shrub habitat of the Planning Area and has a range of approximately 254,691 acres. According to ODFW data, kit fox populations are currently low but are higher than when the species was added to the state list of threatened species. Kit fox populations in Oregon are thought to be naturally limited by the amount of salt desert habitat available. The kit fox is common in Nevada and some other western states. USDA-APHIS animal damage control actions avoid kit fox occupancy areas.

3.7.2.4 Columbia Spotted Frog

Columbia spotted frogs inhabit ponds, lake edges, slow moving streams, or perennial warm marsh habitats with few or no cold springs. They are known to occur on the Donner und Blitzen River and some of its tributaries, on McCoy Creek, in Fish Lake, and in Lily Lake. Spotted frogs are also often associated with non-woody wetland plant communities and use algal mats for resting. Egg masses are usually piled on the stream bottom in very shallow water in late spring, sometimes by several females in the same location in successive years. Egg masses often rise above the surface of the water. Froglets and adults occur in well-vegetated ponds, marshes, and slow streams, but have been found in disturbed habitats with reduced vegetation.

Spotted frogs become active as early as February. Males are not territorial and call during the day using a series of six to nine low clucking sounds. Egg laying has been documented as early as March in southwestern British Columbia and as late as June 30th in higher elevations. In mountain and interior sites, spotted frogs have been known to overwinter as larvae, metamorphosing the following spring (Nussbaum et al. 1983). This phenomenon has not been documented in the Planning Area. When disturbed, spotted frogs will move to deeper water on the stream bottom and conceal themselves in dense vegetation or bottom debris.

3.7.2.5 Greater Sage-Grouse

The western subspecies of the Greater sage-grouse was federally listed as a Category 2 candidate species by the USFWS until the classification was dropped from the list. The Greater sage-grouse is currently a BLM sensitive species.

Sage-grouse populations have exhibited long-term declines throughout North America, declining by 33 percent over the past 30 to 40 years. The species has disappeared in five states (Arizona, New Mexico, Oklahoma, Kansas, Nebraska) and one province (British Columbia). It is "at risk" in six other states (Washington, California, Utah, Colorado, North Dakota, South Dakota) and two provinces (Alberta, Saskatchewan). Even in states where the species is considered to be “secure" (Oregon, Nevada, Idaho, Wyoming, Montana), long-term population declines have averaged 30 percent (Connelly and Braun 1997; Crawford and Lutz 1985). The ODFW has indicated that the population is stable in Oregon (Willis 1993).

The Oregon BLM is committed to the implementation of the “Greater Sage-Grouse and Sagebrush-Steppe Ecosystem Guidelines” (2000). While these guidelines focus on the Greater sage-grouse as an icon, they are dedicated to all of the shrub-steppe obligate species that have been the focus of the ICBEMP effort. The guidelines incorporated information from the Guidelines to Manage Sage-Grouse Populations and Their Habitats (Connelly et al. 2000).

Sage-grouse depend on sagebrush-grassland communities. Big sage, the primary species upon which sage-grouse depend in Harney County, is usually associated with western juniper, although juniper is not a necessary habitat component. Sage-grouse are most frequently found in sage covered flatlands or gently rolling hills. Free water is also a component of sage-grouse habitat, but it is not required for daily survival. Water is used when available from late spring through late fall. Sage-grouse attain their highest population densities in areas that contain abundant and well distributed surface water and rely on snow and ice during the winter months and moisture from succulent plants when available.

Migratory sage-grouse populations may travel great distances seasonally. Summer and winter ranges may be as far as 50 miles apart, or more. If deep snow covers spring and summer ranges, the birds may migrate to lower elevations to find food and cover. Sage-grouse may nest and raise their broods in sage covered mountain valleys at high elevations. A variety of sage stand conditions are necessary for good sage-grouse habitat. In general, good habitat should contain openings less than 300 yards in circumference, some dense stands, and approximately equal amounts of tall and short sagebrush plants. Sage-grouse use three habitat types throughout the year: breeding habitat, brood-rearing habitat, and wintering habitat.

Lek sites, or sage-grouse strutting and mating grounds, are usually small open areas from less than an acre to ten acres in size, with low, sparse sagebrush or areas devoid of vegetation. Grassy swales, natural and irrigated meadows where grass has been removed, burned areas, cultivated fields adjacent to sagebrush-grass rangelands, and dry lakebeds are often used as leks. Approximately 60 active sage-grouse leks or lek complexes are known in the Planning Area at this time. There are several historic lek sites that no longer have males strutting on them. This may be due to a continued disturbance (proximity to a road) or event such as a wildland fire. A lek complex consists of several known leks that are located less than one mile apart. Males may move from one lek to another during the breeding season or from one year to the next.

Optimum sage-grouse nesting habitat consists of sagebrush stands containing plants 16 to 32 inches high with a canopy cover ranging from 15 percent to 25 percent, and an herbaceous understory of at least 15 percent cover that is at minimum seven inches tall. These conditions should be found on 80 percent of the breeding habitat for any given population of sage-grouse (Klebenow 1969; Wallestad and Pyrah 1974).

Early brood rearing generally occurs relatively close to nest sites, but movements of individual broods may be highly variable (Connelly 1982; Gates 1983). Sage-grouse chick diets include forbs and invertebrates. Insects, especially ants and beetles, are an important component of early brood rearing habitat. Brood habitats containing a variety of plant species tend to provide an equivalent diversity of insects, which are important chick foods. As sagebrush habitats dry up and herbaceous plants mature, hens move their broods to moister sites during June and July where more succulent vegetation is available (Klebenow 1969; Gill 1965; Connelly et al. 1988). Optimum brood-rearing habitat consists of sagebrush stands that are 16 to 32 inches tall with a canopy cover of ten to 25 percent and an herbaceous understory of 20 percent (ten percent grasses and ten percent forbs). This type of habitat should be found on at least 40 percent of an area that is considered brood habitat.

As fall progresses toward winter, sage-grouse start to move toward their winter ranges. At such times, their diet shifts primarily to sagebrush leaves and buds (Connelly et al. 1988). Timing of movement depends on weather severity and snow depth. Sage-grouse winter habitats are relatively similar throughout most of the species range. Since the sage-grouse winter diet consists almost exclusively of sagebrush, winter habitats must provide sagebrush that is exposed at least ten to 12 inches above snow level (Hupp and Braun 1989). Such conditions provide both food and cover for wintering sage-grouse, which tend to prefer areas of high canopy cover as well as taller Wyoming big sagebrush. They will select the plants with the highest protein content. In situations where snow covers the sagebrush, the birds will move to areas where it is exposed. Sagebrush of varying heights should be found on 80 percent of the wintering range of a given population to guarantee that enough forage will be available.

The greatest negative impact on sage-grouse is the destruction or adverse modification of their habitat. Presently, sage-grouse in reduced numbers occupy most of their historic range in the Planning Area but have disappeared from areas on the periphery of former ranges where large areas of sagebrush have been removed. During the past 40 years, many sagebrush covered valleys and foothill ranges have been sprayed, plowed, chained, burned, disked, or cut in an attempt to convert these ranges to grasslands.

3.7.2.6 California Bighorn Sheep

California bighorn sheep were eliminated from Oregon by 1915. Current populations are the result of numerous ODFW-directed reintroductions and supplemental releases during the past two decades. Bighorns from Steens Mountain have been captured and used for relocations within Oregon and in other western states. Although populations within the analysis area have recently increased, the current distribution in Oregon still represents a small percentage of the former historic bighorn range (Oregon's Bighorn Sheep Management Plan 1992-1997).

Approximately 775 bighorns reside within the Planning Area in seven primary locations including the CMPA. Small herds occupy other regions of the Planning Area. Bighorn range covers 436,715 acres in the Planning Area and 101,168 acres in the CMPA. Summering bighorns from the Alvord Peak area and Pueblo Mountains usually winter in the low mountains east of Fields. This is the only major migratory bighorn movement known in eastern Oregon.

Disease transmission between domestic sheep and bighorns can cause rapid and massive bighorn losses, which results in public controversy. No licensed sheep grazing permits overlap with currently occupied bighorn range, nor has the ODFW indicated any problems with disease transmission between cattle and bighorn sheep. However, domestic sheep grazing does occur on predominantly private land south of Fish Lake on Steens Mountain which is approximately four

miles from occupied bighorn sheep habitat. This close proximity poses some additional risk that disease transmission could happen in the future. Due to this potential, transplants of bighorn sheep into sites identified in Oregon's Bighorn Sheep Management Plan in Little Blitzen, Big Indian, and Lower Blitzen canyons have been postponed by the ODFW.

In accordance with an approved state management plan, the ODFW wishes to continue releasing bighorns into suitable unoccupied habitat and to conduct supplemental releases into currently occupied habitat. Should bighorn populations exceed management objectives in the future, the ODFW would like to continue removing bighorns by capture for release into other suitable habitat in Oregon and elsewhere.

3.7.3 Fish

The following section is a description of special status fish species found in the Planning Area. It includes a discussion of distribution and current status, important habitat relationships, and key factors influencing status. Much of the following discussion is excerpted from the Draft SEORMP (USDI 1998b) and the ICBEMP Scientific Assessment (USDA/USDI 1996).

3.7.3.1 Redband Trout

Redband trout are a subspecies of rainbow trout. The rainbow trout is a widely distributed western North America native salmonid. Rainbow trout have been segregated into these three forms: 1) Coastal rainbow trout west of the Cascade/Sierra mountain divide; 2) Interior Columbia River redband trout upstream of Celilo Falls, including the Fraser and Athabasca rivers in Canada, the upper Klamath River Basin, and the isolated interior basins of Oregon; and 3) the Sacramento-San Joaquin redband trout (Behnke 1992). Although the systematics are incomplete, physical characteristics and genetic studies support the view that these three rainbow trout forms warrant subspecific recognition (Allendorf 1975; Allison and Bond 1983; Berg 1987; Stearley and Smith 1983). The USFWS (FR Vol. 65, No. 54, pp. 14932-14936) recognizes the redband trout within the Planning Area as Great Basin redband trout.

Redband trout occupy a wide array of habitats (Scott and Crossman 1973). Research suggests that redband trout are found in a wide range of conditions, often more extreme than those associated with other species. Populations found in the southern Oregon deserts inhabit turbid and alkaline waters that range from near freezing to over 77º F (Johnson et al. 1985; Kunkel 1976; Zoellick 1995). Redband trout tolerate warmer waters than many other salmonids (Gamperl 2003); however, in warmer and drier environments the loss of riparian cover has been associated with reduced numbers and production of fish (Li et al. 1994; Tait et al. 1994).

Relatively little work has been completed to define habitat use for this fish, but patterns are generally similar to other salmonids. Thurow (1988) found redband trout most abundant in pool habitats and in association with cover components including undercut banks, large woody debris, and over-hanging vegetation. Some have suggested that redband trout, like steelhead, may be associated with higher gradient channels, often in riffles or with substrates dominated by boulders, cobbles and pocket water (Kunkel 1976).

Redband trout are widely distributed throughout the Interior Columbia Basin, including southern Oregon closed desert basins. In the Planning Area, it occupies the Donner und Blitzen River system, including Kiger Creek and McCoy Creek drainages; the Riddle Creek watershed; and Home, Threemile and Skull Creeks in the Catlow Valley. The Donner und Blitzen River system demonstrates three life forms of redband trout depending on water conditions in Malheur Lake: resident, fluvial and adfluvial.

Redband trout are considered a species of special concern by the American Fisheries Society and all states in the historical range, and are classified as a tracking species by the BLM (Williams et al. 1989). Six Great Basin populations, including populations in the Planning Area, were petitioned for listing as threatened or endangered under the ESA in 1997. The USFWS found that the most appropriate grouping of the six populations under consideration was as a single Distinct Population Segment, the biological unit managed for protection under the ESA. In March of 2000, the USFWS published a finding which stated that listing for these populations is not currently warranted (FR Vol. 65, No. 54, pp. 14932-14936). This determination was based, in part, upon evidence of moderate to high densities of redband trout in each of the six subbasins (Dambacher et al. 2001).

The limited distribution and small population sizes of redband trout located in Catlow Valley streams, as well as the Catlow tui chub, prompted the August 1997 completion of the "Catlow Redband Trout and Catlow Tui Chub Conservation Agreement and Strategy." This Conservation Agreement was entered into by the BLM, USFWS, Malheur

NWR, ODFW, and a private land owner in order to expedite conservation measures needed for the recovery of the species. The agreement, which focuses on the fishes' habitat in Home, Threemile, and Skull Creeks, has these two objectives: 1) to reduce and eliminate significant threats; and 2) to enhance and stabilize specific stream reaches of occupied and unoccupied historic habitat. The public land portions of Threemile Creek and Home Creek are within the CMPA, and are included in the area covered by the Conservation Agreement. These efforts further contributed to the USFWS finding that the Great Basin redband trout did not warrant listing pursuant to the ESA (FR Vol. 65, No. 54, pp. 14932-14936).

Hybridization and competition are potential biotic factors influencing redband trout throughout their range. Introduced fishes create risks of genetic introgression, competition for food and space, predation, and increased exposure to disease (Fausch 1988; Reisenbichler 1977). Introduced rainbow trout are now the most widely distributed fish in the Inter-Columbia Basin and have contributed to losses of the native redband trout genotype through introgression (Behnke 1992; Campton and Johnston 1985). However, current information indicates that hybridization and competition are not impacting trout genetics, abundance, or distribution in the Planning Area. In the Planning Area, documented hatchery rainbow trout stocking within the distribution of redband trout is limited to the Donner und Blitzen River subbasin. However, hatchery supplementation in the Donner und Blitzen River was discontinued upstream of the Page Springs gauging weir in the 1940s (ODFW 1983) and downstream of the weir in 1992. Rainbow trout continue to be stocked in Krumbo Reservoir, Fish Lake and two small BLM reservoirs in the Donner und Blitzen River subbasin. The ODFW (1999) indicated a limited likelihood of hatchery trout escaping these waters and concluded a low risk of introgression with redband trout. Coordinated fish composition surveys conducted in the Donner und Blitzen River indicated no presence of hatchery rainbow trout upstream of the Page Springs gauging weir or in tributary streams upstream of Fish Creek (ODFW 1983). These surveys were conducted during the period when ODFW actively stocked rainbow trout in the Donner und Blitzen River. The ODFW (1983) further suggested that the redband trout gene pool is relatively unaltered upstream of the Page Springs gauging weir, which functions as a barrier to hatchery stocked rainbow trout. This report further recognizes hatchery rainbow trout as poorly adapted to the warm and often alkali waters of the Great Basin streams, where the native trout are more adapted to these environments (Bowers et. al. 1979). Genetic analysis of redband trout in Mud Creek and Bridge Creek, tributaries of the Donner und Blitzen River downstream of the Page Springs gauging weir, suggest limited to no genetic introgression from hatchery rainbow trout (Currens, unpublished report on file with ODFW). Although brook trout previously stocked in Fish Lake are reported to have moved into Fish Creek (ODFW 1980), a tributary of the Donner und Blitzen River, the ODFW (1983) did not observe brook trout in the Donner und Blitzen River. However, other fish species, such as carp and sunfish, that may compete for resources or prey upon redband trout are present downstream of the Page Springs gauging weir.

Fragmentation and isolation of habitats influence redband trout distribution and abundance. If watershed disturbances result in loss of corridors or connecting habitats, remaining redband trout populations can be progressively isolated into smaller and smaller patches of productive habitats. Corridors that provide habitat for migration, rearing, and over-wintering may be critical to the conservation of species where connections among population are important (Hanski and Gilpin 1991; Rieman et al. 1993).

Habitat degradation is a third factor influencing redband trout status. Great Basin redband trout habitats have been altered by a host of land use practices (Moskowitz and Rahr 1994; Williams et al. 1989). Thurow (1988) reported four principle effects from water diversions: dewatering of stream reaches, loss of fish in unscreened diversions, blockage of migration corridors, and alteration of stream channels by earthmoving equipment. The loss or conversion of riparian cover has been caused by grazing, mining, urbanization, and agriculture (Meehan 1991). In desert climates, the loss of riparian canopy has been associated with excessive temperature and reduced redband trout abundance (Li et al. 1994; Tait et al. 1994). Channel alterations adversely affect stream hydraulics (Bottom et al. 1985), nutrient pathways (Schlosser 1982), invertebrate production (Benke et al. 1985), and fish production.

The Malheur NWR, in coordination with the ODFW, Trout Unlimited, and Oregon Trout, has been improving conditions for redband trout in the Donner und Blitzen River system through maintenance and modification of fish passage and screening at diversion facilities on the Malheur NWR (ODFW 1999).

3.7.3.2 Lahontan Cutthroat Trout

The Lahontan cutthroat trout is native to the Pleistocene Lake Lahontan Basin of northwestern Nevada, northeastern California, and a small adjacent portion of southeastern Oregon. It has been introduced elsewhere in southeastern Oregon and eastern Washington.

During the 1970s, Lahontan cutthroat trout from Willow and Whitehorse creeks were introduced into Denio, Van Horn, Pike, Mosquito, Little McCoy, Big Alvord, Little Alvord, Cottonwood, and Willow creeks in the Alvord Lake Subbasin. Surveys conducted in 1991 confirmed that many of the introduced Lahontan cutthroat trout still persist. A population of hatchery-produced Lahontan cutthroat trout also inhabits Mann Lake, Wildhorse Lake, and Wildhorse Creek. Since these fish originated from hatchery stock, they are not considered pure-strain Lahontan cutthroat trout and not considered a protected species.

Pursuant to the ESA, this subspecies is federally listed as threatened throughout its range. The BLM and the USFWS conduct interagency consultation pursuant to Section 7 of the ESA regarding authorization of grazing permits where Lahontan cutthroat trout are present and may be affected, except for hatchery produced populations. These consultations have concluded that current grazing practices are not likely to jeopardize the continued existence of the trout. The USFWS Biological Opinions (USFWS 2001, 1999, and 1995) further recognize that current livestock grazing practices associated with these permits allow for the continued improvement of instream and riparian conditions. In 1995, the USFWS office in Reno, Nevada formalized a cooperative management agreement among the ODFW, the Nevada Division of Wildlife, the USFS, and the BLM for the coordination and performance of activities identified in the Lahontan Cutthroat Trout Recovery Plan. The primary purpose of the agreement was to provide specific direction to conserve the trout and reduce or remove threats that could prevent its recovery.

Although somewhat hardier than other cutthroats, the Lahontan subspecies requires cool water temperatures, deep-water refuges, and silt-free gravels for spawning. Optimal riverine habitat for Lahontan cutthroat trout is characterized as clear, cold water with an average maximum summer temperature of less than 22º C; an approximate one-to-one pool-to-riffle ratio; well-vegetated, stable stream banks; at least 50 percent of the stream area providing cover; a relatively stable water flow regime; and a relatively silt-free rocky substrate in riffle-run areas (USFWS 1995b).

Habitat degradation, especially loss of riparian vegetation, is identified as a key factor in declining Oregon stream populations. Loss of vegetation has, in some cases, contributed to increases in stream temperatures that exceed those considered optimal for the sub-species. Drought conditions coupled with extremely low temperatures and limited riparian cover may cause stream segments to freeze completely during winter. Loss of vegetation has resulted in the loss of forage organisms and cover (Hanson et al. 1993). Excessive turbidity and sedimentation also contribute to habitat degradation problems because of their effects on food production, spawning areas, and feeding ability (Hanson et al. 1993).Observations and assessments of public land stream reaches in the Planning Area occupied by Lahontan cutthroat trout indicate that riparian and stream habitat conditions are naturally resilient to disturbance or have improved over recent historic conditions. The introduction of nonnative salmonids is also recognized as a key factor throughout their range. The presence of nonnative salmonids could result in a combination of predation, competition or genetic introgression. The only known presence of nonnative salmonids associated with Lahontan cutthroat trout in the Planning Area are brown trout in Van Horn Creek.

3.7.3.3 Borax Lake Chub

The Borax Lake chub is a small minnow restricted to the Borax Lake ecosystem of southeastern Oregon. Due to its restricted distribution and threats to its remaining habitat, it is listed as an endangered species by the USFWS and the State of Oregon. The BLM will continue to consult with the USFWS on any of its activities that may affect the Borax Lake chub or its critical habitat.

This species is known only from Borax Lake and associated waters in Harney County, Oregon. The Borax Lake chub is a sister taxon of the Alvord chub from which it became isolated as the waters of pluvial Lake Alvord receded (Williams and Bond 1983). The Borax Lake chub occurs in Borax Lake, which covers ten acres and is located within a 60-acre parcel of private land, and surrounding marsh and pool areas. The outflow channel and Lower Borax Lake Reservoir (public land) has provided habitat in the past; however, the species is not believed to be present at this time.

From 1986 to 1988, population estimates for the Borax Lake chub ranged from 3,934 to 13,319 depending on the year and season (Williams 1995). Based on water conditions, hundreds of chub may occur in outflow creeks, and during wet years, up to a few thousand may occur in Lower Borax Lake.

The Borax Lake chub is restricted to the thermal waters of Borax Lake and its outflows. Waters flow out from the elevated rim of Borax Lake in many directions, but more typically to the southwest, where they enter a marsh and then flow into Lower Borax Lake (a reservoir). Reproduction is limited to Borax Lake; Borax Lake chub in other habitats gain

access through interconnected out-flows and marshes. In Borax Lake, the species occurs throughout the lake except in hot spring inflows, where temperatures exceed approximately 34º C.

Threats of geothermal energy exploration and manipulation of surface flows from Borax Lake were the primary factors that resulted in the 1980 listing of the species by emergency provision under the ESA. Changes in thermal flows that enter the lake could cause slight temperature increases or decreases that could be detrimental to the species. Alterations in surface flows from Borax Lake could isolate subpopulations adjacent to the lake causing their desiccation. Due to the restricted size of the lake, threats also exist from introductions of chemicals or nonnative species. Protection of the fragile salt crusts that maintain water level at Borax Lake is also critical (USFWS 1987). Livestock grazing and physical damage from OHVs, mechanized vehicles and humans are the primary risks to shoreline salt crusts. The species is also at risk because of its highly restricted range and specialized habitats. Borax Lake, lower Borax Lake, and the surrounding block of land totaling 640 acres is designated critical habitat for the Borax Lake chub.

3.7.3.4 Alvord Chub

Alvord chub are endemic to the Alvord Basin of southeastern Oregon and northwestern Nevada. It is a moderately sized minnow that inhabits marshes, creeks, and springs with little or no current. The American Fisheries Society considers the Alvord chub to be a species of special concern (Williams et al. 1989), and it is a BLM assessment species.

The Alvord chub is widely distributed within springs, creeks, and lakes in the Alvord basin. Williams and Bond (1983) reported Alvord chubs from 16 localities within the basin, including Serrano Pond, Trout Creek, Alvord Lake, and Pueblo Slough (in the Planning Area) in Oregon, as well as Bog Hot Creek, Bog Hot Reservoir, Thousand Creek Spring, Thousand Creek, Continental Lake, Warm Spring, Dufurrena Ponds, Gridley Springs, and West Spring in Nevada. The current distribution of this species has apparently changed little during the past 100 years except for a recent report of Alvord chubs in Juniper Lake, Oregon (Bond 1974), where they were introduced and subsequently disappeared, and the elimination of the Alvord chub population from Thousand Creek Spring.

The Alvord chub occurs in a wide variety of available habitats such as isolated springs, cool and warm water creeks, reservoirs, and lakes. Within the principal creek systems in the Alvord Basin, Trout Creek in Oregon and the Thousand-Virgin Creek system in Nevada, chubs occur commonly in the mid and lower elevation sections, but are rare or absent entirely from high elevations. Within spring systems, the Alvord chub occupies a variety of spring habitats except springs with water temperatures above 31º C. Alvord chubs are absent from Bog Hot Springs, which is fishless, and from Borax Lake, which is occupied by the Borax Lake chub.

Alvord chub appears capable of occupying a wide range of habitat conditions as long as relatively clean water persists that is free of introduced species. The Alvord chub has been eliminated from Thousand Creek Spring because of the presence of introduced guppies. Alvord chubs are absent from some ponds at Dufurrena, which are dominated by introduced sunfish (Williams and Bond 1983). Introductions of nonnative fish and diversion of stream flows pose the greatest immediate risk to populations. Maintenance of the integrity of aquifers that feed surface waters in the Alvord Basin is critical to the long-term persistence of this species.

3.7.3.5 Catlow Tui Chub

The Catlow tui chub, a small- to medium-sized minnow, is a recognized though undescribed subspecies of the more widespread tui chub. Genetic analysis of the Catlow tui chub is underway at Oregon State University. Due to its restricted distribution and threats to remaining habitat, the subspecies is considered of special concern by the American Fisheries Society (Williams et al. 1989), and it is also a BLM tracking species.

Historically, Catlow tui chubs occurred in three streams (Threemile, Skull, and Home Creeks) that drain the west flank of the Catlow Rim and in Rock Creek along the western edge of Catlow Valley (Bills 1977; Kunkel 1976). The Catlow tui chub has a restricted range, but appears to be locally abundant in streams and in Threemile Reservoir. An exception is Rock Creek, where only a few were found in 1994. The limited distribution of the Catlow tui chub, as well as the Catlow redband trout, prompted the August 1997 "Catlow Redband Trout and Catlow Tui Chub Conservation Agreement" (see discussion above under Redband Trout).

Little is known about the habitat relationships of the Catlow tui chub. Their preference for low gradient reaches of Skull, Threemile, and Home Creeks suggests an affinity for low velocity habitats, which is typical of most tui chubs. They also

appear to be well-adapted to Threemile Reservoir, at the downstream end of Threemile Creek. Catlow tui chubs occur in streams occupied by redband trout (Kunkel 1976).

Diversions of creek flows for irrigation reduce Catlow tui chub habitat. Due to the Catlow tui chub's restricted distribution, disturbances such as drought, fire, and human land use practices place populations at risk.

3.7.3.6 Malheur Mottled Sculpin

Malheur mottled sculpin is a recognized, though undescribed, subspecies of the more widespread mottled sculpin. The Malheur mottled sculpin is endemic to the Harney Basin of southeastern Oregon, including the Silvies and Blitzen river systems. It is listed as a sensitive species by the State of Oregon and the BLM.

Historic distribution includes the Blitzen River and tributary streams on Steens Mountain, the Silver Creek drainage, the Silvies River and tributary streams, and the isolated drainages of Poison and Rattlesnake creeks. The sculpin in the Harney Basin is considered by Bailey and Bond (1963), Bond (1974), and Markle and Hill (2000), to represent an undescribed relative of the mottled sculpin in the Snake River drainage. Malheur mottled sculpin historically inhabited Harney Basin (Malheur Lake Basin) when it was connected to the upper Snake River, and became isolated in small creeks when the basin dried up perhaps as recently as 8,000 years ago. Through more recent geologic events, mottled sculpin from the lower Columbia River drainage have entered the basin. This recent form of mottled sculpin has been hybridizing with the older, previously isolated form, though hybridization seems to be occurring mainly in northern Harney Basin. Samples collected within the Planning Area mostly resemble preliminary descriptions of Malheur mottled sculpin (Markle and Hill, 2000).

Very little is known about the life history of the Malheur mottled sculpin, but it is assumed to be comparable to that of other mottled sculpins. According to Bond (1974), the Malheur mottled sculpin requires cool-water streams with large gravel or rubble substrates for cover and spawning. It requires water temperatures below 26º C, with high dissolved oxygen and very low turbidity. Given these characteristics, the Malheur mottled sculpin can occupy small headwater streams and larger rivers such as the lower Donner und Blitzen River.

Malheur mottled sculpin appear to be very sensitive to changes in water quality, including increases in temperature, sediments, and turbidity. Biotic interactions are not specifically known, but the occurrence of the Malheur mottled sculpin would appear to be negatively correlated with the presence of introduced warm-water fishes such as catfish and sunfish, which are more tolerant of turbid water conditions. Elevated water temperature, increased turbidity, and sediment transport caused by activities such as livestock grazing, road construction, and timber harvest activities are detrimental to the sculpin and have been cited by the BLM as causes for the decline of Malheur mottled sculpin populations in Silvies, Hay, Yellowjacket, and Emigrant Creeks within the Silvies Basin.

3.7.4 Redband Trout Reserve

Portions of the Donner und Blitzen River located in the Steens Mountain Wilderness provide habitat for unique populations of wildlife, waterfowl, and fish, including a population of redband trout. The RTR was created by the Steens Act to conserve, protect, and enhance the Donner und Blitzen River population of redband trout and the unique ecosystem; and to provide opportunities for research, education, and fish and wildlife-oriented recreation. The RTR consists of the Donner und Blitzen WSR above its confluence with Fish Creek and the adjacent riparian areas on public land within the Steens Mountain Wilderness.

The management of this area is guided by the Steens Act, the WSR Act, and the Wilderness Act, in addition to the required consultation with the SMAC and the ODFW. Recreation would be allowed in the RTR as long as it is consistent with the previously mentioned acts and management guidelines, as well as specific management criteria developed in this Proposed RMP/FEIS.

3.8 Paleontological Resources

Paleontological resources are defined as the fossilized remains of plants and animals. Of particular interest are vertebrate fossils such as those of camels, saber toothed cats, rhinos, mammoths, giant sloths, turtles, and horses. Fossil localities have been reported on public land in the Planning Area. Most of the finds have been exposed by wind or water erosion, and are widely dispersed. Several localities are the subject of ongoing academic research. Small exposures of Miocene

sedimentary rocks are exposed at the base of the east face of Steens Mountain, west of the East Steens Road. Known locations of plant fossils are on private and public land, as well as several unexplored exposures that are likely to contain animal fossils.

A survey of known paleontological localities was conducted in May of 1999 within and outside the CMPA. Animal remains from sabertooth cats, mastodons, giant camels, small camels (llama-like), horses, and horned rodents were found. A plant locality within the area was reassessed and yielded a flora composed of the following plants: true fir, spruce, pine, Douglas fir, juniper, cottonwoods, willow, hornbeam, barberry, serviceberry, mountain mahogany, cherry, rose, mountain ash, indigo bush, sumac, maple, buckbrush, and madrona. This flora would normally occur in a small lake environment in a slightly warmer, more temperate climate than exists in the area today.

A new fossil locality was found in the fall of 1999 in Catlow Valley west of the CMPA. Animals identified in the preliminary analysis are beaver, peccary, camel, and cat. This find dates to the late Miocene to early Pliocene period (five to seven million years ago) and indicates that the Catlow Valley was then much wetter than it is today.

These fossil localities, especially the known and potential localities, are highly significant because they are a window to an environment that existed millions of years ago. They are nonrenewable, extremely fragile, and usually small in areal extent. The precise number of acres encompassed by these localities is unknown because they have not been completely described and mapped.

3.9 Cultural Resources

A cultural resource is generally defined by federal agencies as any location of human activity that occurred at least 50 years ago, and that is identifiable through field survey, historical documentation, or oral evidence. Native American traditional practice areas are a special category of cultural resources. Some cultural resources may be less than 50 years old, but have cultural or religious importance to American Indian tribes or paramount historic interest to the public.

Federal antiquity laws require consideration of cultural resource values through consultation, a process designed to encourage protection of cultural properties prior to project approval. This often necessitates intensive surveys and recording where existing data are insufficient to make an assessment. If significant sites cannot be avoided during construction activities, the adverse effects are mitigated through data recovery by excavation, surface collection, photography and recording, and analysis.

Prehistoric, or pre-Euro-American contact, cultural resources include lithic scatters, rock shelters, midden deposits, house depressions, petroglyphs, hearths, and rock alignments. Historic cultural resources include buildings and building ruins, wagon roads, irrigation ditches and associated structures, dams, and archaeological deposits such as trash scatters.

Almost all of the cultural resource inventories in the Planning Area have been for project-specific activities, rather than initiated by the Cultural Resource Program; therefore, the surveys are not necessarily in areas of highest site potential. Only seven percent of the public land in the Planning Area has been inventoried for cultural resources. Earliest inventories and site records are of poor quality and do not conform with more recently approved data standards of the State Historic Preservation Office or the BLM Cultural Resource Program.

The archaeological record in the Planning Area is extensive in terms of the numbers of sites and their antiquity. Evidence exists in the Planning Area of some of the earliest occupation in North America, 11,500 years ago. Prehistoric sites are those older than about 1850 A.D. and include the following: stone flake scatters, habitation sites, toolstone quarries, rock shelters and caves, rock art and rock structures such as rock rings (wickiup supports), and hunting blinds. Historic sites post-date 1850 A.D. and include the following: abandoned and intact townsites, homesteads, buildings, stone or wood structures, wagon roads, military sites, and trash scatters.

Since the late 1970s, 658 cultural properties have been recorded in the Planning Area (163 in the CMPA and 495 in the AMU). Cultural resources have been degraded by natural processes such as erosion and by human actions such as road construction, livestock grazing, rangeland development, recreation, OHV and mechanized vehicle travel, and illegal artifact collection and excavation. In recent decades, federal agencies have attempted to minimize damage to significant National Register of Historic Places eligible cultural resources. Table 3.9.1 summarizes the condition of sites in the Planning Area.

Table 3.9.2 summarizes the occurrence of various impacts to archaeological sites in the CMPA and the AMU. Multiple impacts were reported at a number of sites. The number of occurrences exceeds the number of sites in each management unit. Impact agents totaling less than one percent were not summarized.

Table 3.9.1: Archaeological Site Condition

Management Unit	No Report	Excellent	Good	Fair	Poor	Destroyed	Total
CMPA	0	30	94	12	20	7	163
Percent of Total	0%	18%	58%	7%	12%	4%	99%
AMU	77	123	204	47	35	9	495
Percent of Total	16%	25%	41%	9%	7%	2%	100%
Planning Area	77	153	298	59	55	16	658

Table 3.9.2: Occurrence of Various Impacts to Archaeological Sites

Management Unit	Erosion	None	Grazing	Illegal Collecting and Excavation	Unknown	Road	Weathering	Archaeological Research	Fire	Range Improvements	OHV	Recreation Activites	Animal Burrowing	Total Occurrences
CMPA	33	34	43	61	13	10	7	6	8	2	2	5	6	230
% of Total	**13**	**14**	**18**	**26**	**5**	**4**	**3**	**3**	**3**	**1**	**1**	**2**	**3**	**96**
AMU	214	111	98	57	46	28	29	19	19	12	14	9	10	666
% of Total	**32**	**16**	**14**	**8**	**7**	**4**	**4**	**3**	**3**	**2**	**2**	**2**	**1**	**98**

3.10 Native American Traditional Practices

Prior to Euro-American settlement, the Planning Area was occupied and used by Northern Paiute bands. Many of their descendants now live on the Burns Paiute Reservation in Burns, Oregon; the Warm Springs Reservation in Warm Springs, Oregon; and the Fort McDermitt Reservation in McDermitt, Nevada.

No specific Native American traditional practice areas have been identified to BLM staff in the Planning Area. However, according to the Burns Paiute Tribal Cultural Resource Manager, traditional resource areas and spiritual locations are used by tribal members and known tribal historic sites do exist in the Steens Mountain area. In addition, Steens Mountain served as a hideout or refuge during and after the Bannock War of 1878. Some of the Burns Paiute Elders refer to Steens Mountain as "Old Man" and consider it a sacred site. Specific traditional practice site location information has not been released to the BLM because the tribe is concerned about data security.

Resources traditionally used in the Planning Area include a wide variety of plant and animal foods, as well as materials for making tools and shelter. Edible roots include biscuitroot, bitteroot, camas, carrots, and onions. Available in the area are seeds of goosefoot, Indian rice grass, Great Basin wild rye, and berries such as chokecherry, currants, and elderberry. Game animals include various waterfowl, trout and chub, marmots, antelope, and big horned sheep, which are found in specific habitats in the Steens Mountain area. Other game such as mule deer, waterfowl, sage-grouse, rabbit, and ground squirrel have more widespread distribution. Plants such as red osier dogwood, willow, tules, and cattails are found in riparian or marshland settings, while grasses for basketry and food seeds are encountered in upland and sand dune environments. The wide bands of quaking aspen on the mid-slopes of Steens Mountain are sources of posts for hide working, and mountain mahogany for bows and digging sticks grows on the rocky ridges at and above the juniper zone. Obsidian, basalt, and cryptocrystalline silicate toolstone sources are found at various locations in the Planning Area.

3.11 Visual Resources

The FLPMA requires the BLM to consider the effects of management actions on the visual quality of the landscape. VRM classes are determined from visual resource inventories. The objectives for each of four VRM classes are listed below.

Class I - The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention. Class I is assigned to those areas where a management decision has been made to preserve a natural landscape. This includes areas such as wilderness, wild sections of WSRs, and other congressionally and administratively designated areas (i.e., WSAs).

Class II - The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III - The objective of Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV - The objective of Class IV is to provide for management activities that require major modification of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every effort should be made to minimize the impact of these activities through careful location activities, minimal disturbance, and repeating the basic landscape elements.

This Proposed RMP/FEIS reassesses the VRM classes under which public land would be managed. Thus, the proposed VRM class may differ from the class indicated by the current inventory.

VRM Class I is assigned to those areas for which a previous decision has been made to maintain a natural landscape. This includes wilderness and other congressionally and administratively designated areas. BLM policy includes WSAs until such time as these areas are designated as wilderness or released by Congress for other uses. Since many WSAs do not necessarily have exceptionally high scenic values, the primary objective of WSA management is to preserve the natural landscape essentially unaltered by humans. If a WSA is designated as wilderness, the area would continue to be managed as VRM Class I; however, if a WSA is released to multiple use management, the RMP would need to be amended and appropriate VRM class(es) assigned. This policy applies to all future plans and plan amendments.

To help meet the management objective of a VRM class, the BLM's visual contrast rating system is employed for proposed projects and activities to help analyze and mitigate any visual impacts to the existing landscape. This systematic process uses the basic design elements of form, line, color, and texture to compare the proposed project/activity with the features of the existing landscape.

3.12 Social and Economic Values

The AMU encompasses a large segment of southern Harney County and a small portion of southwestern Malheur County. The CMPA lies entirely within Harney County. Part of the Mineral Withdrawal Area lies within Malheur County and the Vale District's Jordan RA; however, the effects of the withdrawal in that RA have been addressed in the SEORMP. To compile an economic profile of the management units within the Planning Area, Harney County was selected as the analysis unit. The portion of Malheur County within the Planning Area is remote, with no human habitation and little economic activity.

Harney County encompasses 10,134 square miles. The cities of Burns and Hines comprise the primary economic center of Harney County. Over 61 percent of the county's population resides in these two adjacent cities. Burns and Hines are located approximately 290 miles from Portland in southeastern Oregon. Burns is the county seat of Harney County and both Burns and Hines are the location of many federal, state, and local government offices. Most basic goods and

services are available in Burns/Hines. Redmond, Oregon is the nearest community with commercial air service. No passenger train service is available to Burns or Hines.

Several smaller communities are also located within the Planning Area, including Frenchglen and Fields. Services for residents and visitors are limited, but do include fuel, campground, motel or resort facilities, a small store, a restaurant, and one or two churches.

The following are social and economic goals and strategies taken from the Harney County Strategic Plan for 2002. The goals of the Harney County Comprehensive Plan were also considered.

Goal for Quality of Life - The quality of life in Harney County is characterized by maintaining the following: clean air and water and starry nights; vast open spaces of great natural beauty; warm, western atmosphere; and friendly, hospitable communities, each with its own beauty and character.

Strategy - The quality of life in Harney County is characterized by promoting the following: social amenities in cultural, spiritual and civic opportunities; every generation contributing to the balanced community; proactively eliminating social and substance abuses; lowering crime rates by concerted efforts at prevention, enforcement and rehabilitation; and fostering respect for diverse cultural and ethnic contributions.

Goal for the Economy - Harney County is creating an economy in which per capita income meets or exceeds Oregon annual average with unemployment rates at or below Oregon's annual average.

Strategies - Harney County has implemented or maintained the following strategies: 1) promote tourism to meet economic goals; 2) create jobs and promote a sustainable economy; 3) maintain and invite diverse industries that are clean, supportive of the community, and that offer a wide salary range to an exceptional workforce; 4) attract a diversified mix of resource based industries which provide a sustainable economy; 5) develop energy resources to support a sustainable economy; 6) foster cooperation between public and private interests to strengthen economic opportunities and acts as a base for government jobs to manage southeastern Oregon public lands; 7) develop and maintain infrastructure capacity to meet or exceed demand for the following: water, transportation, sewer, education, energy, health care system, telecommunications, community facilities, and social and government service.

3.12.1 Economic Findings from the ICBEMP

The ICBEMP included an examination of Harney County generally and the communities of Burns and Hines specifically. Smaller unincorporated communities were not examined. The Draft Eastside EIS concludes that Harney County, located in the Boise trade center, is an area of low economic and social resiliency. This determination is based on the county's dependence on public land timber and forage and the fact that 21 percent of the county budget is derived from federal land payments (USDA/USDI 1997). USFS lands are eight percent of the land base while BLM administered lands represent 62 percent of the land base.

Burns and Hines are analyzed in the subsequently released document, Economic and Social Conditions of Communities: Economic and Social Characteristics of Interior Columbia Basin Communities and an Estimation of Effects on Communities from the Alternatives of the Eastside and Upper Columbia River Basin Draft EISs (Reyna 1998). In the document, Burns was found at that time to have high timber employment specialization and medium agricultural employment specialization. Hines was also found at that time to have very high timber employment specialization and high agricultural employment specialization. Timber is no longer a major source of employment in Burns or Hines.

3.12.2 Population, Age Distribution, and Ethnicity

Harney County is among Oregon's least populated counties, with 0.8 persons per square mile. Except for Burns, Hines, and a few other population centers, the county is rural in character. Table 3.12.1 displays the census population in 2000 for Oregon, Harney County, Burns, and Hines, as well as the population estimates for Oregon and Harney County in 2001 (U.S. Department of Commerce 2002). The population declined 2.7 percent in Harney County between 2000 and 2001 while the state population increased 1.5 percent.

A relatively high percentage of Harney County’s population is age 65 or older. In 2000, there were 1,141 individuals 65 or over, comprising 15 percent of the population, compared to 12.8 percent for the State of Oregon; 26 percent of the

population was under 18 and Harney County's median age in 2000 was 38.9. Age distribution for the state in 2000 showed a slightly younger population trend overall; in Oregon, 24.7 percent of the population was under 18 and the median age was 36.3 (U.S. Department of Commerce 2002).

Table 3.12.1: Census Population in 2000 and 2001 Population Estimates for Selected Areas

Geographic Area	Population (2000)	Population Estimates (2001)
Oregon	3,421,399	3,472,867
Harney County	7,609	7,404
Burns	3,064	
Hines	1,623	

Harney County has limited ethnic diversity with small populations of Hispanic and American Indian residents. Table 3.12.2 shows the approximate population percentages (for individuals recorded under the single race heading in the 2000 census data) for the White, American Indian, and Hispanic sectors of the population in Harney County; the three Census County Divisions (CCDs) in the county, as well as the State of Oregon (U.S. Department of Commerce 2002).

The Diamond CCD covers the southern portion of Harney County and includes the Planning Area. The American Indian population is substantially lower in this CCD as compared to the rest of Harney County and the state. The Hispanic population is higher in this CCD as compared to the rest of Harney County, but lower than the state as a whole.

3.12.3 Employment and Wages

In 2001, nonfarm payroll employment averaged 2,610 in Harney County. The average total employment was 3,323. Federal, state, and local governments (government sector) employed the greatest number of people with average employment of 1,170. The wholesale and retail trade sector employed an average of 510 people, while the services sector employed an average of 380 people (Oregon Employment Department 2002). Employment in the government sector declined between September 2001 (1,230) and September 2002 (1,160). The trade sector employment during this same time increased from 510 workers in September 2001 to 520 workers in September 2002. The services sector employment increased from 400 in September 2001 to 420 in September 2002. Total nonfarm payroll employment peaked at 2,950 in 1999 followed by an average decline of 5.0 percent in 2000 and 9.0 percent in 2001. Harney County lost 400 jobs between 1999 and 2001, most of which were in the manufacturing sector. In 2001, agricultural employment in Harney County was estimated to be 520 (Oregon Employment Department 2002).

There were great fluctuations in unemployment in Harney County during 2001. The average unemployment for 2001 was 14.1 percent, with a low of 10.6 percent in October 2001 and a high of 19.8 percent in February 2001. Overall unemployment in Harney County declined between September 2001 and September 2002, dropping from 11.0 percent to 6.3 percent. This improvement can be attributed to some level of recovery in the job market as well as attrition from the local labor force. Estimates state that the Harney County Labor force declined by 160 individuals between 2000 and 2001 and it appears that the same trend is continuing in 2002 with an estimated decline of an additional 270 individuals (Oregon Employment Department 2002). The most current data from the Oregon Employment Department states that Harney County had an estimated unemployment rate of 14.3 percent in April 2003 with 3,274 persons employed and 545 unemployed (2003). Unemployment was higher for April 2003 than either March of 2003 (3,295 employed) or April of 2002 (3,325 employed). It is unusual for the unemployment rate in Harney County to increase between March and April. This has not been the case historically. April 2003 also marks the seventh month the unemployment rate has increased in Harney County.

The median household income for Harney County was lower than the median income for the state of Oregon in 1999. Harney County had a median household income of $30,957 in 1999, which was approximately $10,000 less than the state of Oregon at $40,916.

Table 3.12.2: Population Percentages in Harney County

Geographic Area / Population	Race (percent of total in area[1])		
	White	Hispanic	American Indian
Oregon - 3,421,399	86.6	8.0	1.3
Harney County - 7,609	89.7	4.2	4.0
Burns CCD[2] - 5,621	88.6	4.1	4.9
Drewsey CCD - 658	93.2	3.6	1.5
Diamond CCD - 1,330	91.8	6.1	0.8

[1] Population percentages do not include responses from the two or more race category in the 2000 census data; rather, they were derived from the single race category.
[2] CCDs are Census County Divisions. Burns equates to the northwestern portion of the county, Drewsey to the northeastern portion of the county, and Diamond to the southern portion of the county and includes the Planning Area.

3.12.4 Per Capita Income and Poverty Rates

The per capita personal income in Harney County was $21,119 in 2001, lower than Oregon's statewide level of $28,222 (Oregon Employment Department 2003). Harney County also has a higher portion of income derived from transfer payments (19 percent) than the state as a whole (13 percent). Transfer payments include Social Security, Aid to Families with Dependent Children, unemployment compensation, disability, and other government payments. Typically, transfer payments are a major source of income for retirees and low-income people. Total income derived from dividends, interest, and rent (22 percent) in Harney County was the same as that type of income statewide (22 percent). This income represents returns on accumulated assets held by individuals and is often a large portion of income for the self-employed and retirees. Earned income, typically wages and salaries, was 48 percent of income in Harney County, below the statewide proportion of 56 percent (Oregon Employment Department, No Date).

Poverty rates in Harney County are similar to the state as a whole. In 1999, 8.6 percent of families and 11.8 percent of individuals were below poverty status in Harney County, with 7.9 percent of families and 11.6 percent of individuals below poverty status in Oregon.

3.12.5 Economic Activity Generated by Public Land Resources

The BLM and other public land management agencies often make commodities available for use by the private sector. Both the BLM and the USFS make rangelands available to private ranching concerns on a renewable permit basis. A fee is collected for each grazing head of livestock. Similarly, the BLM and the USFS sell timber to private firms; however, no USFS lands or other commercial forest lands exist in the Planning Area portion of Harney County. For this reason, timber harvests from BLM land within the Planning Area have not been a source of economic revenue.

Since no locatable or leasable energy or minerals facilities are operating in the Planning Area portion of the county, these are not a source of economic revenue. Salable minerals sources are a small source of revenue where sand and gravel and rock aggregate are sold for use on private land and they contribute to the economy of the area where they are used on state, county, and BLM roads under a free use permit.

The BLM conducts wild horse gathers approximately every three to four years. These animals are made available for adoption through the Wild Horse Adoption Program. The contractors hired to conduct the gathers, are from out of the area and the money raised through the adoption fees is sent directly back to the national program. Harney County does not see a direct economic benefit from these activities; however, there are indirect benefits associated with the rare horse breeds and the adoption activities, which attract visitors and attention to the area and lead to local spending that would not otherwise occur.

Agricultural activities in Harney County are not considered highly labor intensive, and are limited primarily to production of hay, forage, and livestock. Harney County agriculture focuses on the following products: (1) beef, with sales of $41,129,000 in 2001 and (2) alfalfa, with 2001 sales of $13,068,000 (Oregon Agricultural Information Network 2002). The highest individual agricultural sales revenue in Harney County is derived from cattle ranching, which is

inextricably linked to the commodity value of public rangelands. The BLM collected an average of approximately $145,000 annually in livestock grazing fees over the past ten years. This number is based on 107,000 AUMs at $1.35 per AUM. The current (2004) AUM is valued at $1.43. The average number of livestock grazing public land each year is 24,500. The BLM spent $93,680 on range improvement projects in 2002, of which 84 percent went to local contractors.

The 1997 Census of Agriculture stated that there were 504 farms in Harney County and that approximately 75 percent were owned by families or individuals. Total gross farm sales in Harney County totaled $58,618,000 in 2001 (2002). Crop sales were $15,317,000 and animal product sales made up the rest ($43,301,000). The United States Bureau of Economic Analysis estimated a net farm income of $2,716,000 for Harney County in 2000, which had gross sales of $50,418,000. According to Harney County website, the "cattle industry is counted on to provide an average of $28,000,000 per year to the economy of the county" (www.harneycounty.com 2003). In addition, nearly half of the county taxes come from the ranching community (www.harneycounty.com 2003).

The Planning Area fire management strategy focuses on wildland fire suppression and prescribed fire. The wildland fire season generally runs from mid-May through mid-September, while prescribed fires are usually planned for periods before and after the wildland fire season. Approximately 55to 60 temporary firefighters are employed each year during the fire season. In addition, local contractors are hired to assist with fire suppression and prescribed fire activities. Between $25,000 and $275,000 is spent each year on local contracts for fire management depending on the severity of the fire season.

Management of the lands, realty authorizations, and ROWs in the Planning Area has economic implications for the county and local economy. Fees are collected by the BLM for land use authorizations and ROWs. Land sales and retention and purchases can affect property tax revenues and potential commodity production; PILT are paid directly to the county. The average annual fees collected for land use authorizations and ROWs are $15,000. Property taxes collected in Harney County in 2002 totaled $4.9 million. Harney County also received $518,880 in PILT in 2002.

The Planning Area has private, state, county, and BLM roads. Some roads are maintained to a high standard while others are primitive routes which receive little or no maintenance. The Steens Loop Road (52.59 miles in length) maintenance contract is made available for bid to local companies and amounts to an average annual contracting expense of $40,000. Materials are purchased locally. Maintenance expenses are approximately $760 per mile for roads in the CMPA. Some of the road uses (e.g., recreation and livestock management) also contribute to the local economy. The revenues from recreation and ranching are discussed under those activities.

OHV and mechanized vehicle use is a form of recreation and is often associated with hunting and fishing. No data are available on OHV and mechanized vehicle use in the Planning Area or expenditures by OHV and mechanized vehicle enthusiasts in the local economy. However, it can be assumed that these recreationists contribute to the economy through the purchase of goods and services such as gas, food, equipment, and lodging.

Hunting and other types of recreation also provide income to the county and local communities. According to data obtained from ODFW hunter surveys, Oregon's Mule Deer and Elk plans, and the 2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation (published by the USFWS), annual hunting trip-related expenditures were estimated at approximately $3,905,312 and $530,987 for Harney County and Steens Mountain, respectively. These expenditures include such things as transportation, food, and lodging and are based on 13,924 hunters in Harney County and 2,607 hunters in the Steens Mountain area spending 74,743 and 11,386 recreation days in Harney County and the Steens Mountain area, respectively. Numbers for wildlife viewing were not available for the county; however, estimates indicate that 1,680,000 participants spent $304,990 on trip-related expenses in 2001 in the State of Oregon.

The BLM collects recreation fees for campground use and SRPs. In 2002 a total of $40,488 was collected, down from $46,135 in 2001. This was consistent with the nationwide decline in travel and recreation in 2002. SRP fees collected over the past five years have ranged from a high of $4,130 in 1999 to a low of $3,227 in 2002. The fees collected in 2002 for the individual campgrounds were as follows: Page Springs Campground, $21,645; Fish Lake Campground, $9,776; South Steens Campground, $4,542; and Jackman Park Campground, $1,315.

The tourism industry in this area is small compared to other Oregon regions; however, tourism in Harney County provides a critical monetary inflow to the economy. For people seeking outdoor recreation and solitude, public lands in Harney County have much to offer. A 2001 report prepared for the Oregon Tourism Commission, Oregon Travel

Impacts, 1991-2000, estimated that travel-related spending in Harney County totaled $18,000,000 with $2,500,000 attributed to travelers staying in public campgrounds during 2000 (Dean Runyan and Associates 2001). Travel is responsible for 6.5 percent of the employment in Harney County. Updated estimates show that travel-related spending in Harney County in 2001 was $18,300,000 and was responsible for 7.4 percent of employment. Travel-related spending in Harney County increased 5.2 percent between 1991 and 2001. Revenues from travel accounted for $3,900,000 in earnings and 340 jobs in Harney County for 2001 (Oregon Tourism Commission 2003).

The 1994 Oregon High Desert Interpretive Center Economic Feasability and Impact Analysis for Harney County and Burns, Oregon (Dean Runyan and Associates et al. 1994) stated that approximately 50,000 people visited both the Steens Mountain area and the Malheur NWR in 1993. Assuming visitation has remained similar between the two destinations and based on numbers determined in the Regional Economic Benefits of Ecotourism and Operations Associated with the Malheur NWR (Northwest Economic Associates [NEA] 2002), visitation to the CMPA may have been as high as 62,700 between October 1, 1999 and September 30, 2000. The NEA analysis found that visitor expenditures in Harney County amounted to over $1,900,000; this equated to $1,200,000 of direct spending within the county (NEA 2002).

It is likely that tourism and visitation to the Planning Area will continue to increase in the long term due to population growth within a day's driving time of the area and the increased publicity the Steens Mountain area is receiving.

The designation of the Steens Mountain Wilderness may attract additional visitors and contribute to the local economy. In a study conducted by Loomis and Richardson (2001), dollar values were determined for recreation benefits, visitor expenditures, and passive use values associated with wilderness in the United States. The average value derived from recreation benefits (benefits to visitors based on their willingness to pay over and above their current trip costs) is $40 per visitor day. Visitor expenditures (eg. gas, food, lodging, fees, and equipment) average $30 per day. Recreation benefits and visitor expenditures cannot be calculated for the Steens Mountain Wilderness because the wilderness area is too new to have quantified visitor use data. Economic benefits may be realized from the presence of wilderness through attraction of new residents and businesses and increased property values for those lands adjacent to the wilderness (Loomis and Richardson 2001; Rudzitis and Johnson 2000; Lorah 2000). Ecological services, which have been quantified in a number of studies, are additional benefits associated with wilderness. They include watershed protection, carbon storage, nutrient cycling, and fish and wildlife habitat (Loomis and Richardson 2001; Loomis 2000).

3.13 Energy and Minerals

For renewable energy permitting, see Lands and Realty at Section 3.17. The primary form of authorization for wind and solar energy development would be a ROW or other realty use authorization.

The BLM manages energy and mineral resources on 1,649,000 acres of land that has both federal surface and federal subsurface (mineral estate) ownership within the Planning Area ("Public Lands" in Table 3.13.1 and Map 3.13.1). There is nonfederal mineral estate ownership on 552,000 acres of land within the Planning Area, which is 25 percent of the land. Detailed information is on master title plats that are viewable electronically in each BLM DO.

The BLM manages a total of 72,000 acres of land with nonfederal surface and federal subsurface (mineral estate) ownership within the Planning Area and this split estate land is not analyzed in the Proposed RMP/FEIS. The BLM also manages a total of 1,000 acres of land with nonfederal surface and partial federal subsurface ownership (ownership of specific mineral resources such as oil and gas resources) in the Planning Area and this split estate land is not analyzed in the Proposed RMP/FEIS.

The existence of split estate land with federal mineral estate may be either due to patenting of the surface estate under the Stock Raising Homestead Act or to sale or exchange of public land. There are approximately 13,728 acres of Stock Raising Homestead Entry lands within the Planning Area and outside of the Mineral Withdrawal Area. There are approximately 14,314 acres of split estate land due to sale or exchange of public land within the Planning Area and outside of the Mineral Withdrawal Area. Leasable and salable minerals on split estate lands with federal mineral estate are managed under the leasable and salable mineral regulations listed in Section 2.13. When we identify areas for the various leasing categories and areas closed to salable minerals in the RMP process they are based on resource values and these same standards would be applied to split estate land.

Table 3.13.1: Mineral Ownership by Acres

Andrews RMP Planning Area	Total
Planning Area	
Public lands[1]	1,649,000
All minerals reserved[2]	72,000
Partial minerals reserved[3]	1,000

[1]Public Lands = Surface and mineral estates both under BLM administration.
[2]All Minerals Reserved = Nonfederal surface, 100 percent federal mineral estate.
[3]Partial Minerals Reserved = nonfederal surface, less than 100 percent federal mineral estate.

Locatable minerals on Stock Raising Homestead Entry lands are managed under the special procedures of PL 103-23, which is the Stock Raising Homestead Act Amendment of April 16, 1993. Locatable minerals on split estate land due to sale or exchange may be open to operation of the mining laws if a land use planning decision expressly restores the land to mineral entry and BLM publishes a notice to inform the public (43 CFR 3809.2(a)). BLM has consulted with the Division of State Lands and has their concurrence to open land with state surface and federal mineral estate to the mining laws. As a consequence, all past and future public lands in the Planning Area sold or exchanged with state surface estate, where minerals are reserved to the United States, shall be opened to operation under the mining laws upon publication in the *Federal Register* of the approval of the Final RMP/ROD, unless otherwise closed to the land and mineral laws in accordance with the Steens Act, other applicable law, or land use planning decisions. BLM will consult with other nonfederal surface landowners on a case-by-case basis after interest in the federal mineral estate is shown and will consider site specific surface estate values and socioeconomic uses before opening any other split estate land with federal mineral estate to locatable mineral entry.

The Mineral Withdrawal Area designated by the Steens Act encompasses 1,181,362 acres and includes the entire CMPA and Steens Mountain Wilderness, as well as the eastern portion of the AMU, a section of the Jordan RA in the Vale District, and the Diamond Craters area of the Three Rivers RA (Map 3.13.1). Subject to valid existing rights, no mining or exploration will be permitted anywhere in the Mineral Withdrawal Area except at those sites specifically identified in the Steens Act as follows: Section 401(b) of the Steens Act "... The Secretary may permit the development of salable mineral resources, for road maintenance only, in those locations identified... as an existing 'gravel pit' within the mineral withdrawal boundaries (excluding the Steens Mountain Wilderness, WSAs, and designated segments of the National WSR System) where such development was authorized before the date of enactment of this Act." The salable minerals sites specifically identified in the Steens Act cover 513 acres within the Mineral Withdrawal Area. There are six grandfathered mining claims covering 120 acres in the Mineral Withdrawal Area. They are outside of the Steens Mountain Wilderness, WSRs, and WSAs in the eastern part of the Planning Area in the AMU. Those mining claims are undergoing a validity exam to determine valid existing rights.

No grandfathered mining claims, mineral leases, or salable mineral sites are located in the Steens Mountain Wilderness, WSRs, or WSAs except for one salable minerals source. Red Point School Materials Source is a grandfathered sand and gravel source in the Pueblo Mountains WSA and it is located approximately 15 miles south of Fields adjacent to the paved Fields-Denio Road in the AMU.

Historic mining (for mercury, thundereggs, and moss agate) and prospecting (for mercury, uranium, gold, and copper) were almost entirely located in areas that are now within the Mineral Withdrawal Area and WSAs. Most of the potentially hazardous sites are within the Mineral Withdrawal Area and WSAs. Some of the potentially hazardous sites are abandoned mine shafts and adits that will be remediated after activity-level analysis and some are areas of naturally-occurring levels of arsenic and mercury detected in sediment analyses by USGS that are typical of mineralized areas.

Eligible WSRs are withdrawn from locatable, leasable, and salable mineral exploration and development where they are within the Mineral Withdrawal Area. Eligible WSRs that are outside of the Mineral Withdrawal Area are Van Horn Creek and Little Cottonwood Creek in the Pueblo Mountains and Big Trout Creek in the Trout Creek Mountains, all of which are in WSAs. Although these areas are open to claims, they are subject to the WSA IMP, including the nonimpairment criteria, and are closed to leasable and salable minerals activities. No grandfathered claims, leases nor salable minerals sources are located along the eligible WSRs.

Most of the ACECs in the Planning Area are within the Mineral Withdrawal Area and are already withdrawn from locatable, leasable, and salable mineral exploration and development. Three ACECs are outside of the Mineral Withdrawal Area but inside WSAs: Long Draw ACEC, Pueblo Foothills ACEC, and East Fork Trout Creek ACEC (see Table 2.21.1) and they are open to mining claims but closed to surface disturbing exploration and development activities for locatable minerals under a notice or plan of operations; they are closed to leasable and salable mineral exploration and development activities. Under Alternative C, Picket Rim ACEC and Tum Tum Lake ACEC are the only ACECs located outside of the Mineral Withdrawal Area and outside of WSAs. Under the Proposed RMP, Tum Tum Lake ACEC is the only ACEC located outside of the Mineral Withdrawal Area and outside of WSAs.

Creeks that contain federally-listed T&E fish species (Lahontan cutthroat trout) outside of the Mineral Withdrawal Area are Denio Creek and Van Horn Creek. Van Horn Creek is within the Pueblo Mountains WSA and although it is open to claims it is subject to the WSA IMP, including the nonimpairment criteria, and is closed to leasable and salable minerals activities. There are no grandfathered claims, leases, nor salable mineral sources along Van Horn Creek. Periodically there are mining claims along Denio Creek. No minerals activities, including casual use activities, may result in harm to the T&E fish or its habitat. Activities that would cause harm to habitat include water withdrawal from the creek and its tributaries and excavation operations that result in increased siltation to the creek.

Mineral potential maps and reports were provided by the U.S. Geological Survey (USGS) for the RMP and formed the basis of the mineral potential information. The BLM utilized the USGS as the data source on the Locatable and Leasable Mineral Potential map (Map 3.13.2). A full citation of the USGS reports are provided in the reference list in Chapter 6 of the Proposed RMP/FEIS under S.G. Peters and others, 1996 and Cole L. Smith 1994. The two administrative USGS reports have been combined into one report and that report is pending publication by USGS.

Table 3.13.2 summarizes the number of acres with high, moderate, or low potential for selected locatable and leasable minerals. The table acreages include lands within the Mineral Withdrawal Area and non-BLM administered lands.

3.13.1 Locatable Minerals

Locatable minerals in the Planning Area are gold, mercury, uranium, diatomite, copper, molybdenum, and sunstones. Exploration is sporadic. Currently, one exploration/mining area is active, containing sunstones. The sunstone claims are within the Mineral Withdrawal Area and are undergoing a validity exam to determine valid existing rights. In October 2001, 31 mining claims were located in the AMU outside of the Mineral Withdrawal Area and there was no surface disturbing activity on those claims.

Map 3.13.2 shows areas with high potential for locatable minerals within the Planning Area. Most of these areas are within the Mineral Withdrawal Area or within WSAs and subject to the WSA IMP, including the nonimpairment criteria, and are not available for exploration and development activities under a notice or plan of operations. Table 2.13.1 shows BLM administered acres outside of the Mineral Withdrawal Area and outside WSAs with high potential for locatable minerals in the Planning Area. Areas with high potential for porphyry type mineral deposits are entirely within the areas with high potential for hot springs type mineral deposits. There are 32,284 available BLM administered acres with high potential for hot springs type mineral deposits, zero acres with high potential for vein gold deposits, 1,313 acres with high potential for porphyry type deposits, zero acres with high potential for uranium deposits, and 1 acre with high potential for diatomite.

The USGS report by Peters and others provides estimated grade and tonnage for mineral deposits and shows that a typical gold deposit in this area would require mining of twice as much rock to obtain half as much gold compared to a typical gold deposit in the Oregon-Idaho Graben south of Vale, Oregon, so it is unlikely that a gold mine will be developed here. It is reasonably foreseeable that there will be a relatively small amount of locatable mineral exploration, mining, and occupancy in the future that may cover up to approximately 5 acres per proposal and there may be five such proposals in the next 20 years.

3.13.2 Leaseable Minerals

No oil, gas, or coal resources have been documented, and potential for oil and gas resources is low throughout the Planning Area. A Known Geothermal Resource Area (Alvord KGRA) with high potential for geothermal resources exists in the Planning Area, but the Alvord KGRA is located within the Mineral Withdrawal Area except for 332 acres northwest of Fields (Table 2.13.1 and Map 3.13.2). Twelve deep (greater than 1,000 feet) geothermal wells were drilled

within the Alvord KGRA before the Mineral Withdrawal Area was designated under the Steens Act. The remainder of the Planning Area has moderate potential for geothermal resources.

Sodium mineral resources have high potential in the Alvord Lake area (Map 3.13.2); Rose Valley Borax Company mined borax in that area 100 years ago. The borax mining operation lasted for ten years and shut down when sodium borate levels fell below economic levels. The Alvord Lake area is now within the Mineral Withdrawal Area. There is low potential for sodium mineral resources outside of the Mineral Withdrawal Area. Currently, there are no mineral leases in the Planning Area.

It is reasonably foreseeable that there may be leasable minerals activities on approximately 300 acres over the next 20 years. It is likely that those activities would consist of geophysical exploration and drilling wells for exploration and development of geothermal resources for direct heat applications such as heating of a business, residence, greenhouse, or swimming pool.

Table 3.13.2: Mineral Potential in Acres

Commodity	Low	Moderate	High	Total[2]
Leasables[1]				
Oil and gas	2,178,000	0	0	2,178,000
Geothermal	0	1,613,000	565,000	2,178,000
Sodium/potassium minerals	2,163,000	0	15,000	2,178,000
Locatables				
Hot springs gold and mercury	442,000	1,397,000	339,000	2,178,000
Uranium	509,000	1,559,000	110,000	2,178,000
Vein gold	2,105,000	73,000	0	2,178,000
Copper, gold and molybdenum (Porphyry)	2,157,000	14,000	7,000	2,178,000
Diatomite	2,148,000	0	30,000	2,178,000

[1]Variations in acreage totals between leasable minerals are due to differences in the mineral reservations; i.e., in many cases, only one of the leasable minerals (e.g., oil and gas) was reserved.
[2]Acreage includes land within the Mineral Withdrawal Area and non-BLM administered lands.

3.13.3 Salable Minerals

This group of minerals includes sand, gravel, and rock aggregate in this area. Petrified wood and obsidian are rare in the Planning Area. Demand for salable minerals is approximately 100,000 cubic yards annually within the Planning Area, predominantly for use on state and county roads.

The Steens Act allows for development of salable mineral resources within the Mineral Withdrawal Area, for road maintenance only, at locations identified in the Steens Act. Some of those identified sites are located in exchanged land or are exhausted and in reclamation status. Within the Mineral Withdrawal Area are three designated rock aggregate sources and four sand and gravel sources that may be developed.

In the Planning Area outside of the Mineral Withdrawal Area are eight designated sand and gravel sources, two rock aggregate sources, and two state ROW sites for use by the Oregon Department of Transportation on state highways.

Large amounts of sand, gravel, and rock aggregate are available in the Planning Area, but they are generally located in visually or ecologically sensitive areas. It is BLM policy to allow development of salable mineral sources to meet demand provided that adequate measures are taken to protect the environment based on the judgement of the BLM authorized officer. It is reasonably foreseeable that the existing sand, gravel, and rock aggregate sources will be expanded

over the next 20 years and approximately ten new sites will be identified for development covering approximately 40 acres each.

3.14 Wild Horses and Burros

The Wild Free-Roaming Horses and Burros Act of 1971 (PL 92-195), as amended, states: "It is the policy of Congress that wild free-roaming horses and burros shall be protected from capture, branding, harassment, or death; and to accomplish this they are to be considered in the area where presently found as an integral part of the Public Lands." After passage of this act in 1971, the Planning Area was inventoried for free-roaming horses and burros. Seven areas in the Planning Area were designated as Herd Areas where wild horses were found. No burros were found in these areas.

Past land use planning decisions designated the entirety of four of the Herd Areas as HMAs (Kiger, Riddle Mountain, Heath Creek-Sheepshead, Alvord-Tule Springs) and the majority of another as a HMA (South Steens) for the maintenance and management of wild horse herds. These planning decisions also determined that horses would not be maintained in two Herd Areas (Pueblo-Lone Mountain, South Catlow) and a portion of a third (South Steens). These three areas are considered to be in inactive status. Wild horses were not maintained in all or a portion of the three Herd Areas because of one or more of the following reasons: majority of the area was private lands; lack of publicly owned water sources; low number of horses precluded maintenance of a viable herd; conflicts with bighorn sheep; and the legal claim of horses by private parties.

Wild horses in the Heath Creek-Sheepshead HMA have unrestricted access to the adjacent Sheepshead HMA located in the Vale District. Horses in these two units mix and are one population. These HMAs were administered as two units due to the political District boundary between the Burns and Vale Districts. The SEORMP (USDI 1998b) determined that these two HMAs would be managed as one unit and provided guidelines and decisions for management of the combined Heath Creek-Sheepshead/Sheepshead HMA.

Wild horses in the Alvord-Tule Springs HMA have access to and freely mix with horses located in the adjacent Coyote Lake HMA that is in the Vale District. The two HMAs are separated by a partially unfenced political boundary between the Burns District and the Vale District.

Previous land use plans established AMLs for each HMA to maintain public land resources in a satisfactory condition. The Three Rivers RMP (USDI 1992) defined AML as the optimum number of wild horses and burros that contributes to a thriving natural ecological balance on public lands and protects the range from deterioration. In the previous land use plans for the Planning Area, AML is expressed as a numerical range with a low and high number that defines the number of wild horses to be managed in each HMA. In establishing the AML range (Table 3.14.1), the following issues were considered: maintenance of a thriving, natural ecological balance; biological/social need of the herds; economics of management actions; reasonable cycles of gathering; and the population at which resource deterioration could be expected. Monitoring data conducted throughout the duration of these plans support maintaining established AMLs. Forage allocations for horses in the HMAs were based on the maximum number of horses in the AML range except in the Heath Creek-Sheepshead HMA where horses migrate to the adjacent Sheepshead HMA during portions of the year.

Table 3.14.1: Wild Horse Herd Management Areas in the AMU and CMPA

HMA	BLM Total HMA Acres	BLM Acres in AMU	BLM Acres in CMPA	AML Range	Forage Allocation (AUMs)
Alvord/Tule Springs	343,201	343,201	0	73 to 140	1,680
Heath Creek/Sheepshead	62,427	54,599	7,828	61 to 102	408
Kiger	38,359	0	6,531	51 to 82	984
Riddle Mountain	28,346	0	25,328	33 to 56	672
South Steens	127,838	4,213	123,625	159 to 304	3,648
Total	**600,171**	**402,013**	**163,312**		**7,392**

To prevent resource overuse and to maintain a thriving ecological balance, gathering takes place as a herd reaches the maximum number in the established AML range, and when monitoring data indicate that an excess number of horses exists. Depending on reproductive rates, results of rangeland monitoring data, death rates, funding, public concern, and other special management considerations, horses are gathered and removed every three to four years. Horse populations are normally reduced to the minimum number of the AML range to avoid the need for frequent and costly gathering. Following minimum feasible management practices, all animals above the lower limit of the AML range are considered excess. Site specific details of gathering, including trap location, are determined at the time of each gather. Excess animals removed from the range are made available to the public through the BLM's Wild Horse Adoption Program.

The fencing that exists in the HMAs for control of livestock movement serves to contain wild horses within the HMAs, but also creates barriers to wild horse movement when livestock are present and gates are closed. After the livestock are removed at the end of the grazing season, gates are left open to provide the opportunity for horse movement within the HMA. The absence of reliable year-round water, especially in drought years, is a limiting factor in some HMAs.

Mature horses are 14 to 16 hands tall (in common horse terminology one hand equals four inches) and weigh 950 to 1,250 pounds. Mature stallions are usually larger than mares. Wild horses in these HMAs exhibit saddle stock conformation, but each herd has its own unique characteristics. Two herds exhibit Spanish mustang characteristics, one herd has a large component of horses with pinto coloration, and the other herds display a variety of colors.

Dominant colors in the Alvord-Tule Springs herd are bay, black, brown, sorrel, palomino, and buckskin. Historically, many of these horses have appeared to be of thoroughbred ancestry with some evidence of draft blood. Major colors in the Heath Creek-Sheepshead herd are dun, black, brown, bay, sorrel, and an occasional paint. All are of saddle stock conformation.

Horses located in the Kiger and Riddle Mountain HMAs are often referred to as the "Kiger Mustangs"and are managed for their Spanish Mustang characteristics. They possess the physical color characteristic referred to as the "dun factor." Most Kigers are dun in color, but grulla, buckskin, red dun, and variations of these colors are common. Other characteristics include dorsal stripes on the back and zebra stripes on the knees and hocks.

The South Steens HMA horses exhibit saddle horse conformation, and the most common colors are pinto variations, sorrel, bay, and red roan. Black, gray, chestnut, brown, blue roan, palomino, and dun horses are also present. These horses are frequently viewed by the public from Highway 205 and the South Steens Loop road.

3.15 Grazing Management

The Taylor Grazing Act was passed on June 28, 1934 to protect public land resources from degradation and also to provide orderly use and improvement/development of public rangelands. Following various homestead acts, the Taylor Grazing Act established a system for the allotment of grazing privileges to livestock operators based on grazing capacity and priority of use, and for the delineation of allotment boundaries. This act also established standards for rangeland improvements and implemented grazing fees. Approximately 142 million acres of land in the western United States were placed under the jurisdiction of the Grazing Service, which became the BLM in 1946. The FLPMA, passed in 1976, and the PRIA, passed in 1978, also provide authority for the management of livestock grazing on public lands.

3.15.1 Grazing Authorization

Livestock grazing is administered on 74 allotments in the Planning Area. Seven of those allotments are split, with portions being both inside and outside the Planning Area. Five of the seven split allotments are part of the Three Rivers RA and were split during the legislation that formed the CMPA in 2000. The other two split allotments have pastures that extend across the state line into Nevada. Allotment boundaries are delineated on Map 2.15.1. Management summaries listed for each allotment are located in Appendix I.

Thirty-four permittees are authorized to graze livestock on 1,535,498 allotted acres of public land in the Planning Area under the direction of Section 3 of the Taylor Grazing Act. Livestock are not authorized to graze on 97,995 acres of unallotted land because of resource conflicts or legislative actions. Currently, permittees are authorized to graze an estimated 98,045 AUMs permitted use within the Planning Area. The current use is estimated because of the seven allotments that are split with portions both inside and outside the Planning Area. Table 3.15.1 shows the acres, AUMs

permitted use, wildlife allocation, seasons of use, management category, and other information for each allotment within the Planning Area.

Twenty-seven of the 74 allotments within the Planning Area are managed using AMPs. The remaining "I" and "M" allotments have grazing systems that satisfy natural resource objectives. Twenty-one allotments have been evaluated to assess the adequacy of the AMP or grazing system. Seventeen of the allotments in the Planning Area have been assessed for attainment of range health standards. See Appendix I for detailed information for each allotment in the Planning Area.

Recent land use plans have developed and implemented grazing systems primarily through AMPs and agreements with permittees. An AMP is a documented program that directs grazing management on specified public land toward reaching goals and objectives regarding resource conditions, sustained yield, multiple use, and ranch economics. AMPs are considered to be implemented when incorporated into term grazing permits or leases and when accepted by the permittee or lessee. The Proposed RMP/FEIS will reestablish resource objectives, which all allotments must meet. Specific management prescriptions will still be made on an allotment or watershed basis. Appendix O contains information on the effects of intensity and season of grazing.

TNR grazing use is periodically authorized to qualified applicants when additional forage is temporarily available and the use is consistent with multiple use objectives. This use is nearly always authorized on crested wheatgrass seedings because crested wheatgrass can become decadent when it is not grazed periodically.

3.15.2 Standards for Rangeland Health and Guidelines for Grazing Management

The rangeland reform process of 1994 modified the grazing regulations identified in 43 CFR part 4100. A new regulation was developed in August of 1995, and is currently being implemented throughout the BLM. The regulation at 43 CFR 4180, addresses the fundamentals of rangeland health. In August 1997, the S&Gs developed in consultation with the RAC, Provincial Advisory Committees, American Indians, and others, were approved by the Oregon State Director for Oregon and Washington. The S&Gs provide the basis for assessing rangeland conditions and trends.

Specific types of field indicators of rangeland health are identified for each standard. The quantitative thresholds for these indicators vary according to soil, climate, and landform, as stated in the standards. An ID Team, with participation from permittees and other interested parties, conducts assessments to evaluate the standards according to field indicators. The five standards are as follows:

Standard 1: Watershed Function - Uplands
Upland soils exhibit infiltration and permeability rates, moisture storage and stability appropriate to soil, climate, and land form.

Standard 2: Watershed Function - Riparian/Wetland areas
Riparian/wetland areas are in properly functioning physical condition appropriate to soil, climate, and land form.

Standard 3: Ecological Processes
Healthy, productive, and diverse plant and animal populations and communities appropriate to soil, climate, and landform are supported by ecological processes of nutrient cycling, energy flow, and the hydrologic cycle.

Standard 4: Water Quality
Surface water and ground water quality influenced by agency actions complies with state water quality standards.

Standard 5: Native, Threatened and Endangered and Locally Important Species
Habitats support healthy, productive, and diverse populations and communities of native plants and animals (including special status species and species of local importance) appropriate to soil, climate, and landform.

Based on 43 CFR part 4180, the authorized officer shall take appropriate action as soon as practicable, but not later than the start of the next grazing year upon determining that existing grazing management needs to be modified so that the following conditions exist: (a) Watersheds are in, or are making significant progress toward properly functioning physical condition, including their upland, riparian/wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow; (b) Ecological processes, including the

hydrologic cycle, nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities; (c) Water quality complies with state water quality standards and achieves, or is making significant progress toward achieving, established BLM management objectives; and (d) Habitats are, or are making significant progress toward, being restored or maintained for Federal T&E species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species. For a more detailed description of the S&Gs please refer to Appendix G.

Collection of monitoring data tracks progress in meeting identified management objectives. The monitoring data is used for periodic evaluations of management actions and active grazing authorizations in each allotment. To maintain or improve public land resources, adjustments are made by agreement or decision in accordance with legislation, regulations, and policy. The various monitoring methods are discussed in detail in Appendix Q.

3.15.3 Allotment Categorization

Prior to the 1960s, grazing policy focused on allotment boundaries and seasons of use; however, in the mid-1960s, grazing systems were implemented, which considered the maintenance and establishment of plant communities. Grazing systems define the management approach needed for each allotment to protect and maintain plant community diversity and the resource values on public land. Livestock grazing allotments are categorized and managed according to the following three selective management categories:

Improve (I) category allotments are managed to improve current unsatisfactory resource conditions and will receive the highest priority for funding and management actions upon approval of the land use plan.

Maintain (M) category allotments are managed to maintain current satisfactory resource conditions and will be actively managed so that resource values do not decline.

Custodial (C) category allotments include a high percentage of private lands and are managed custodially while protecting existing resource values.

Within the Planning Area, there are 33 improve "I" category allotments, eight maintain "M" category allotments, and 33 custodial "C" category allotments.

3.15.4 Grazing Exclusions

The Steens Act altered the previous pattern of use through land exchanges and amendments to individual allotments, and created the first Congressionally designated No Livestock Grazing Area in the Steens Mountain Wilderness, covering 94,959 acres of public land. An additional 2,270 acres adjacent to the Steens Mountain Wilderness were also excluded from grazing by the legislation. Land exchanges, conducted to meet the mandates of the Steens Act, necessitated allotment boundary changes, combining portions of allotments, creating a new allotment, revisions to permitted use, and several new rangeland improvement projects.

Additional areas within livestock grazing allotments are excluded from grazing as determined in prior decisions and agreements between the BLM and permittees. Exclusionary measures are utilized to protect resource values and facilities. The types of resources and facilities protected by the exclusion of livestock grazing include the following: riparian vegetation communities; reservoirs, springs and wetlands; developed water sources; special status plant or animal habitats; relevant and important values for which ACECs are designated; ORVs for which WSRs were designated; wilderness values; research and study plots; administrative sites; recreation sites; and archaeological sites.

3.15.5 Ecological Status

ESI data describe the ecological status of vegetative communities based on soil characteristics and potential natural vegetative communities. ESI data from approximately 1984 to 1989 are provided for the Planning Area. The ecological status of the rangelands in the Planning Area is summarized in Table 3.15.2. These data are the same as when completed nearly 20 years ago and do not depict changes since then. Trend studies have shown that the ecological status of many vegetative communities has advanced to a higher seral status.

Table 3.15.1: Livestock Grazing Allotment Characteristics

Allot No.	Allotment Name	M[1] I C	Total Public Land Acres	Total Other Acres	% of Allot. in Planning Area	Public Land Acres in CMPA	Public Land Acres in AMU	AUM Allocation Antelope	AUM Allocation Deer	AUM Allocation Elk	AUM Allocation Wild Horses	AUM Allocation Livestock	AUMs SNU[2]	Period of Use[3]	Grazing System[4]	Mgt Objective[5]
5309	Happy Valley[6]	M	16,750	2,493	13	2,204	-	4	25	88	132	286	131	sp,su,f	e,rr,d,r	1,2,3,4
5310	Riddle Mountain[6]	I	20,479	2,528	23	4,715	-	6	177	188	-	712	291	sp,su,f	e,rr,d	1,2,3,4
5327	Jenkins B Flat FFR[6]	C	1,037	3,466	100	1,034	-	-	-	-	-	283	-	n	s	4
5329	Riddle/Coyote	I	1,549	98	100	1,549	-	-	-	-	-	300	-	sp	rr	1,2,3,4
5331	Smyth-Kiger[6]	I	22,719	7,427	36	8,244	-	7	87	140	852	908	-	sp,su,f	rr,d,e	1,2,3,4
5604	Burnt Flat[6]	I	29,154	5,808	87	25,364	-	15	83	64	672	3,361	-	sp,su,f	e,d	3,4
6001	North Catlow	I	177,966	21,328	100	-	177,966	14	56	-	-	4,424	-	sp,su,f,w	e,r,d	1,3,4
6002	South Steens	I	89,508	1,392	100	88,909	599	13	170	60	3,540	9,577	-	sp,su,f	r	1,2,3,4
6005	Mud Creek	I	8,245	-	100	8,245	-	5	86	9	-	590	-	sp,su	r,d	1,3,4
6006	Frazier Field	I	20,506	94	100	20,506	-	6	311	9	72	1,906	-	sp,su	e,rr,d	1,2,3,4
6007	Ruby Springs	I	14,788	649	100	14,304	484	8	58	36	-	1,950	-	sp,su	r	1,2,3,4
6008	Krumbo	M	14,413	1,811	100	11,927	2,486	10	11	-	-	4,133	-	sp,su,f	e,d,r	3,4
6010	East Ridge	I	5,066	5,440	100	3,683	106	2	115	44	-	431	-	sp,su	r	1,2,3,4
6011	Pollock	I	76,812	10,577	100	17,632	59,180	12	79	-	1,224	4,107	-	sp,w	e,rr,d	1,3,4
6012	Alvord	I	223,895	5,600	100	10,431	213,464	20	244	-	1,200	7,355	1,892	sp,su,f,w	r,d	1,2,3,4
6014	Tum Tum	M	7,374	705	100	-	7,374	1	9	-	-	730	-	w	d	4
6015	Trout Creek Mtn.	I	85,442	2,931	100	-	85,442	17	483	-	-	8,352	-	sp,su	e,rr,d	1,2,3,4
6016	Sandhills [6]	M	17,976	159	69	-	12,427	5	10	-	-	1,583	-	sp,su,f,w	rr,d	3,4
6017	Grassy Basin [6]	M	6,927	3,201	59	-	4,054	2	18	-	-	556	-	sp,su	e,rr,d	1,2,3,4
6018	Tule Springs	I	136,895	12,789	100	-	136,895	24	108	-	480	5,506	-	w	d	3,4
6019	Serrano Point	I	14,008	1,086	100	11,224	2,784	4	107	-	-	500	-	sp,su,f	r	1,2,3,4
6020	Pueblo-Lone Mtn.	I	218,995	5,256	100	-	218,995	35	346	-	-	13,149	-	sp,su,f,w	e,d,rr	1,2,3,4
6021	Pueblo Mountain	I	8,177	611	100	-	8,177	1	28	-	-	323	-	sp,su,f	rr	1,2,3,4

Allot No.	Allotment Name	M[1] I C	Total Public Land Acres	Total Other Acres	% of Allot. in Planning Area	Public Land Acres in CMPA	Public Land Acres in AMU	AUM Allocation Antelope	AUM Allocation Deer	AUM Allocation Elk	AUM Allocation Wild Horses	AUM Allocation Livestock	AUMs SNU[2]	Period of Use[3]	Grazing System[4]	Mgt Objective[5]
6022	Kings River	I	1,771	-	100	-	1,771	-	10	-	-	113	-	su,f	rr	1,2,3,4
6023	Hammond	I	11,009	2,712	100	2,839	8,170	6	33	-	-	473	-	sp,su,f	e,rr,d	1,3,4
6024	South Fork	M	381	138	100	-	381	-	1	-	-	40	-	sp	e	1,2,3,4
6025	Hardie Summer	M	6,008	3,775	100	6,008	-	1	340	42	-	408	-	su,f	d	1,2,3,4
6026	Mann Lake	I	35,363	1,460	100	10,433	24,930	6	110	15	-	3,670	-	sp,w	r,w	1,2,3,4
6027	Carlson Creek	I	8,876	4,017	100	8,876	-	2	29	-	-	684	-	sp,su,f	r	1,2,3,4
6028	Fields	I	4,837	192	100	-	4,837	-	5	-	-	210	-	sp,su	e,d,r	3,4
6029	Keg Springs	I	40,661	503	100	-	40,661	-	13	-	-	1,791	-	sp,su,f	s	3,4
6030	Reicken's Corner	M	8,841	999	100	-	8,841	4	3	-	-	688	-	sp,su,f	e,d,r	3,4
6031	LaVoy Tables	I	38,257	1,708	100	3,280	34,977	7	136	-	36	1,653	-	sp,su,f	e,d,r	3,4
6032	Krumbo Mountain	I	17,353	6	100	16,800	553	4	43	30	-	1,059	-	su,f	rr	3,4
6033	Chimney	I	14,769	10,125	100	10,190	4,579	6	149	38	-	2,015	-	sp,su,f	s	1,2,3,4
6035	Fields Basin	I	30,968	1,773	100	-	30,968	7	49	-	-	3,325	-	sp,su,f	rr	3,4
6038	Alvord Peak	I	24,354	709	100	21,719	2,635	-	28	-	-	2,328	-	sp,f	e,d	1,2,3,4
6040	Stonehouse	I	10,517	321	100	10,517	-	3	39	17	-	1,772	-	su	d	1,2,3,4
0032	South Catlow	I	42,351	19,817	100	-	42,351	26	2	-	-	2,069	-	w	d	3,4
6042	Basque Hills	I	39,449	-	100	-	39,449	5	2	-	-	900	-	sp	e	3,4
6043	Pueblo Slough	I	9,768	7	100	-	9,768	2	2	-	-	1,400	-	w	d	3,4
6044	Lower Antelope	I	5,867	19	100	-	5,867	1	1	-	-	500	-	w	d	3,4
6100	Hammond FFR	C	1,158	6,158	100	799	359	-	-	-	-	32	-	n	s	4
6101	Waldkirch FFR	C	27	324	100	-	27	-	-	-	-	12	-	n	s	4
6102	Oregon End FFR	C	1,656	841	100	-	1,656	-	-	-	-	138	-	n	s	4
6103	Wiley FFR	C	29	1,145	100	-	29	-	-	-	-	6	-	n	s	4
6104	Defenbaugh FFR	C	1,276	2,655	100	-	1,276	-	-	-	-	60	-	n	s	4

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6105	Wrench Ranch FFR	C	411	4,514	100	-	411	-	-	-	-	51	-	n	s	4
6106	Orlando FFR	C	1,823	6,605	100	-	1,823	-	-	-	-	320	-	n	s	4
6107	Crump/ Calderwood FFR	C	231	1,399	100	-	231	-	-	-	-	12	-	n	s	4
6108	Henricks FFR	C	131	870	100	-	131	-	1	-	-	30	-	n	s	4
6109	Casey FFR	C	376	243	100	-	376	-	-	-	-	21	-	n	s	4
6110	Still FFR	C	321	2,975	100	-	321	-	-	-	-	68	-	n	s	4
6111	Dunbar FFR	C	536	2,010	100	-	536	-	-	-	-	68	-	n	s	4
6112	Long Hollow FFR	C	836	828	100	-	836	-	-	-	-	103	-	n	s	4
6114	Rock Creek FFR	C	1,260	9,550	100	-	1,260	-	-	-	-	148	-	n	s	4
6115	Dixon FFR	C	96	1,145	100	-	96	-	-	-	-	22	-	n	s	4
6116	Northrop FFR	C	613	1,985	100	-	613	-	-	-	-	40	-	n	s	4
6117	Kaser FFR	C	40	1,578	100	-	40	-	-	-	-	5	-	n	s	4
6118	Lupher FFR	C	79	131	100	-	79	-	-	-	-	21	-	n	s	4
6119	Pollock FFR	C	994	5,128	100	677	317	-	-	-	-	19	-	n	s	4
6120	Mann Lake FFR	C	1,629	26,456	100	1,511	118	-	-	10	-	22	-	n	s	4
6121	Neuschwander FFR	C	640	1,370	100	-	640	-	-	-	-	43	-	n	s	4
6122	Starr FFR	C	194	584	100	-	194	-	-	-	-	9	-	n	s	4
6123	Culp FFR	C	183	3,591	100	-	183	-	-	-	-	-	-	n	s	4
6124	Windmill FFR	C	222	619	100	-	222	-	-	-	-	15	-	n	s	4
6125	Roaring Springs FFR	C	6,400	196,332	100	4,909	1,491	-	24	-	-	374	-	n	s	4
6126	CM Otley FFR	C	907	13,173	100	897	10	-	-	-	-	151	-	n	s	4
6127	Kuney FFR	C	513	11,206	100	-	513	-	-	-	-	35	-	n	s	4
6128	Konek FFR	C	80	285	100	-	80	-	-	-	-	10	-	n	s	4

Allot No.	Allotment Name	M[1] I C	Total Public Land Acres	Total Other Acres	% of Allot. in Planning Area	Public Land Acres in CMPA	Public Land Acres in AMU	AUM Allocation Antelope	AUM Allocation Deer	AUM Allocation Elk	AUM Allocation Wild Horses	AUM Allocation Livestock	AUMs SNU[2]	Period of Use[3]	Grazing System[4]	Mgt Objective[5]
6129	Alvord FFR	C	299	17,978	100	-	299	-	-	-	-	-	-	n	s	4
6130	Scharff FFR	C	276	4,800	100	276	-	-	-	-	-	68	-	n	s	4
6131	South Pocket FFR	C	145	1	100	-	145	-	-	-	-	1	-	n	s	4
6133	Otley Brothers FFR	C	313	8,682	100	225	88	-	-	-	-	21	-	n	s	4
Totals			1,593,775	478,891		329,927	1,205,571	300	3,961	790	8,208	98,045	2,474			

[1] M=Maintain, I=Improve, C=Custodial
[2] SNU=Suspended Non-use
[3] Periods of Use: sp=spring, su=summer, f=fall, w=winter, n=no particular season
[4] Grazing Systems: rr=rest rotation, s=seasonal, d=deferred, r=rotational, e=early
[5] Management Objectives:
1=Improve or maintain riparian vegetation
2=Improve water quality and quantity
3=Maintain or improve wildlife habitat
4=Maintain or improve ecosite condition
[6] Acres shown are for the whole allotment. Only a portion of the allotment is within the Planning Area.
See Appendix I for more allotment information.

Within allotments containing riparian habitat and water quality values, improved grazing management is a priority for the Planning Area. To date, allotments with important riparian resource values and updated management plans have shown improvement in ecological status and trend.

Table 3.15.2: Ecological Status of Rangelands in the Planning Area

Ecological Status	AMU Acreage	CMPA Acreage	Total Acreage	Percentage of Total
PNC	15,183	17,629	32,812	2.0
High Seral	276,577	129,210	405,787	24.6
Mixed High/Mid Seral	163,604	76,831	240,435	14.6
Mixed High/Early Seral	20,338	1,540	21,878	1.3
Mid Seral	585,369	161,371	746,740	45.3
Mixed Mid/Early Seral	37,042	7,571	44,613	2.7
Early Seral	66,722	9,487	76,209	4.6
Rock	2,284	20,791	23,075	1.4
No Data	54,192	4,083	58,275	3.5
TOTAL	**1,221,311**	**428,513**	**1,649,824**	**100.0**

3.15.6 Rangeland Improvements

In order to effectively manage livestock distribution and protect rangeland, range improvements have been constructed within the Planning Area. Located within the CMPA are the following improvements: a total of 20,500 acres of crested wheatgrass seeding, 2,000 acres of other seeding, 330 miles of fence, 25 cattleguards, 253 reservoirs or waterholes, 23 spring developments, eight wells, and 29 miles of pipelines. The following improvements are located within the AMU: a total of 58,750 acres of crested wheatgrass seeding, 1,300 acres of other seeding, 634 miles of fence, 50 cattleguards, 302 reservoirs or waterholes, 66 spring developments, 57 wells, and 104 miles of pipelines. As mandated in the FLPMA and the PRIA, a portion of grazing fees is to be used on range improvements for the benefit of wildlife, watersheds, and livestock management. Emergency fire rehabilitation funds have also been expended to protect resource values by converting exotic annual vegetative community types back to native, perennial plant communities to improve plant community and watershed health. Livestock operators, state and federal agencies, and other interested groups have also continued to fund construction of rangeland improvement projects.

Range improvements planned prior to legislation, which have completed NEPA documentation and are in conformance with the Steens Act, may still be implemented within the CMPA. New range improvements, necessary to fully implement the No Livestock Grazing Area and other legislated grazing changes, may be constructed following NEPA analysis. Additional range improvements will be coordinated through the SMAC.

Maintenance and reconstruction of existing support facilities in the Steens Mountain Wilderness and WSAs will be in accordance with existing guidelines for wilderness, WSAs, NEPA, and the Steens Act. Maintenance, reconstruction, and construction of new support facilities in wilderness areas where grazing is allowed, as well as access for these and other purposes, will be in compliance with the Wilderness Act and House Report 101-405 (Arizona Desert Wilderness Act) grazing guidelines. In WSAs, maintenance, reconstruction, new construction, and access to livestock facilities will be in compliance with the WSA IMP.

3.16 Wildland Fire Management

Fire has played an important role in the development of most plant communities in the Planning Area. The role that fire plays depends on the severity, intensity, and frequency of burning as well as elevation and locally influenced climatic patterns. Fire changes plant community structure and species composition, and alters site nutrient dynamics. The Planning Area has a wide variety of plant communities with varied fire histories, and averages about 15 wildland fires per year. Approximately 90 percent of the fires are caused by lightning and about ten percent are caused by humans.

Over the last ten years, approximately 24 fires burned 5,300 acres each year. A large percentage of these fires are less than ten acres in size.

3.16.1 Fire Ecology of Major Vegetation Types in the Planning Area

Sagebrush is the dominant vegetation type throughout the Planning Area. Big sagebrush (all three subspecies: mountain, Wyoming and basin), low sagebrush, and silver sagebrush are the most common species found. Black sagebrush and stiff sagebrush may also be found in specialized habitats in the Planning Area. Silver sagebrush is the only sagebrush species found in the Planning Area that will sprout following top removal. Other sagebrush species will recolonize areas from the seed bank or by emigration from unburned areas. This process may be slow in larger burned areas because of sagebrush seed dispersal. Sagebrush seeds are extremely small and have no specialized dispersal mechanism. Seeds rarely move more than three feet from parent plant. Size and shape of burned areas become important under these conditions. Burned areas with irregular boundaries will facilitate sagebrush establishment, while large burned areas with little sinuosity to the perimeter must rely on the soil seed bank and seed transport.

Mean fire return intervals (average number of years between fire events) for sagebrush plant communities are difficult to determine because the plants are typically entirely consumed by fire and do not leave evidence that can be used to determine historical fire regimes. Until recently, the extent and dates of fires have not been recorded and post-fire succession has not been studied in detail. However, site productivity affects the fire behavior and frequency in these sagebrush stands. Sites with higher productivity (deep soils, high cover of understory grasses and forbs) will carry fire easier and more frequently than sites with low productivity. Low sagebrush can be found in areas with higher productivity. Rooting depth in these areas is often limited by a heavy clay layer. Low sagebrush is usually found on less productive sites compared to mountain, basin, or Wyoming big sagebrush. Silver sagebrush, however, may also be associated with wetland species in areas of high productivity where fire history is more likely to be related to adjacent vegetation than to characteristics of the silver sagebrush plant communities themselves. Silver sagebrush is also found in a mosaic of vegetation types; it does not occupy large areas within the Planning Area.

Juniper woodlands are the most widely distributed woodland type in the Planning Area. Ancient western juniper stands are located in rocky areas where fire return intervals are more than 150 years. Historically these stands occupied less than one percent of the total landscape. The location of these stands provides insufficient understory vegetation to carry fire. If fires did occur, they were often limited to one or two trees and areas of less than one acre. Under certain circumstances, large fires did move across these stands, but such events were rare.

The mountain big sagebrush fire regime, where much juniper has encroached today, typically burned every 15 to 25 years, a return interval similar to other shrub communities in the arid West. Young western junipers have thin bark and are readily killed by surface fires. Fire will carry through juniper stands with grass and shrub understory. As trees mature, they displace shrub and grass vegetation, leaving little surface vegetation. The stand then becomes more susceptible to erosion due to reduction in near-surface root systems of the lower stature plants. Older stands become resistant to fire because low productivity limits available fuel. Western juniper does not sprout after fire; reestablishment is from seed dispersed by water and animals, and the trees may be slow to regenerate.

Cheatgrass is an invasive nonnative annual grass that creates a fire hazard in limited parts of the Planning Area. Cheatgrass thrives in disturbed environments, especially with fine-textured soils. Past land and fire management decisions have created a condition where cheatgrass thrives. Heavy grazing, especially in the early to middle portions of the 20th century, help to provide safe sites for cheatgrass establishment. Once cheatgrass became established, it provided a continuous fuel bed in areas that historically had a discontinuous fuel bed. Fire return intervals have been decreasing (less time between fire events) in areas dominated by cheatgrass, and other introduced annuals. Cheatgrass is a more efficient competitor for soil moisture and nutrients. Native grasses, forbs, and shrubs in some cases, cannot compete with cheatgrass for these resources and are suppressed or eliminated from the plant community. Increases of cheatgrass have also altered the growth stage (phenology) calendar of the plant communities. Cheatgrass begins and completes growth earlier than the associated native vegetation. Areas dominated by cheatgrass now have the potential to burn earlier in the year than plant communities dominated by native vegetation. Earlier fires, especially if repeated every three to seven years, burn native plants when they are actively growing and most susceptible to injury. Fire does not increase cheatgrass production, but it does eliminate other plants and provides an opportunity for cheatgrass to increase at the expense of native grasses, forbs, and shrubs. Cheatgrass invasion substantially reduces biodiversity and the land's value for livestock forage and wildlife habitat. Reversal of this ecological cycle probably requires human intervention and alteration of current land management. In some areas the conversion to cheatgrass and other introduced

annuals has pushed the ecological system through a threshold. Passive restoration practices in these situations will only maintain the current plant community and not move toward pre-disturbance communities.

3.16.2 Fire Management Needs, Status, and Alternatives

The Planning Area fire management strategy focuses on wildland fire suppression, prescribed fire, and wildland fire use for resource benefits. The wildland fire season generally runs from mid-May through mid-September, while prescribed fires are usually planned for periods before and after the wildland fire season, depending on weather conditions. Prescribed burning can be used to meet resource and fire management objectives such as stimulation of plant growth, changes in species composition, or reduction in amounts of fuels and slash. A large proportion of the plant communities within the Planning Area evolved with periodic fires. All wildland fires ignited by lighting will be evaluated. Generalized policy and procedures for fire planning, assessment, and response are guided by BLM Manual 9102.

3.16.2.1 Juniper Management

Encroachment of western juniper into mountain big sagebrush and quaking aspen plant communities is a major concern across large areas of the Planning Area. Historically, western juniper was limited to rocky ridge tops and shallow soil areas where fires rarely occurred. Past livestock management and fire suppression have reduced the influence of fire in these areas. Subtle shifts in climate may have also helped Western juniper expand its range over the last 100 years. As western juniper density and cover increase, diversity of habitats decreases and potential conflicts over the remaining resources rise.

In addition to prescribed burning, chain saws have also been used to remove western juniper from quaking aspen stands prior to burning, and after burning if the fire did not carry through the stands. Cutting of western juniper helps to reduce competition and the disturbance stimulates suckering, or root-sprouting, of the quaking aspen. Stands that were burned or cut have been temporarily fenced from deer, elk, and domestic livestock, allowing quaking aspen suckers to grow above the reach of large domestic or wild herbivores.

3.16.2.2 Rangeland Condition

In lower elevation sagebrush plant communities, factors such as fuel conditions, proximity to sensitive habitats or presence of introduced annuals may make prescribed fire impractical. In these areas, the Burns DO is using a technique known as “brush beating” in which a large mower kills large sagebrush, but leaves smaller shrubs and herbaceous plants relatively unharmed. Cutting the brush in irregular shapes is another way to create a complex pattern or mosaic. The brush beating also interrupts the structure and continuity of the fuels, reducing the potential for large fires by limiting spread.

3.16.3 Prescribed Fires

The current prescribed fire program on the Planning Area has successfully reintroduced fire to sagebrush and aspen plant communities. These management actions are improving habitat for numerous wildlife species and are providing higher quality forage for domestic and wild herbivores. Prescribed fires have occurred primarily in the fall. Burning at this time emulated the natural fire occurrence to some degree. Wildland fires historically occurred in the late spring, summer and early fall. Prescribed burning in the fall occurred because conditions would be less severe and fires could be held in units. Recently the timing of prescribed fires has shifted toward the late summer. Burning in August and September produced fire effects closer to the historic conditions. Burning in the winter and early spring has also proven to be a good tool in areas where there are large accumulations of fuel (i.e. juniper cuts). Soils are frozen during this time of year and heat from the fire is adsorbed by the frozen soils. Prescribed burning, and other fuels reduction actions, are helping to re-establish appropriate fire regimes based on site potential and current social/political direction.

3.16.4 Wildland Fires

Wildland fire risk depends on the intensity and size of the wildland fire as well as the location, time of season, and time of day. Historically these ecosystems experienced a variety of fire severities and intensities. The variety of intensities and severities was controlled by changing climatic conditions across the season. Early and late in the wildland fire season, conditions were cooler and potentially wetter than during the hot dry summer months. Fires that burned at these times may have had fewer impacts than those that burned in the middle of the hot dry summer. Conditions also changed

within a single day. Severity and intensity can be much higher during the middle of the burning period than during night when temperatures are lower and relative humidity is higher. However, conditions today have changed somewhat. The amount of woody vegetation across the Planning Area is greater today than 100 years ago. Increases in western juniper and sagebrush density and cover have altered the characteristics of most wildland fires. Fires today are larger in most cases than they were historically due to a simplification of the vegetation (fuels) structure. Large, catastrophic wildland fires are much more common today than 100 years ago. These fires are occurring at an increasing rate across the western United States. Impacts to plants and animals can be dramatic following these large fires. Large grazing animals, domestic and wild, may be displaced for several years following large fires. Wildlife species that depend on sagebrush for part or all of their entire life cycle will decline following burning. Severely burned landscapes lose soil, seed bank, and microflora; consequently, they are more susceptible to invasions of weedy species. Fire may also have adverse effects on recreational and visual resources. The impacts of burning on plant community processes and functions can be naturally mitigated, but social values often require rehabilitation actions be taken to assist recovery.

In case of multiple fires, suppression priority is given in decreasing order of importance to fires threatening life, property, and resources. Fires occurring within wilderness and WSAs and other environmentally sensitive areas have received full suppression responses, but these responses are generally limited, regarding the use of mechanical equipment and retardant. If a fire is likely to become large or to threaten life or property, the line officer can approve the use of mechanical equipment to assist in suppression. In that case, immediate rehabilitation occurs on all areas of ground disturbance.

Current fire management for the CMPA is outlined in the Steens Mountain CMPA Interim Management Policy and considers the provisions of the Steens Act as well as the Wilderness Act. On all lands other than WSAs or designated wilderness within the CMPA, the Steens Mountain CMPA Interim Management Policy states that current fire management practices will continue, subject to provisions in the Steens Act. Within the Steens Mountain Wilderness, fire suppression will take place in accordance with the provisions of the Wilderness Act, Management of Designated Wilderness Manual 8560, and the Steens Act. Pursuant to 8560 §.35A, all wildland fires will be suppressed until an approved FMP is prepared. Suppression actions in the Steens Mountain Wilderness will be executed to minimize surface disturbance and alterations of the natural landscape as well as fire suppression costs, while being consistent with management objectives and constraints. Methods and equipment will be used which least alter the landscape or disturb the land surface. Suppression structures and improvements will be located outside the Steens Mountain Wilderness, except those that are the minimum necessary to protect life, property, public welfare, and Steens Mountain Wilderness objectives.

Suppression preplanning will be conducted with review by an ID Team to determine appropriate response and equipment to be used in fire suppression. Protection of the Steens Mountain Wilderness resource will be made part of the suppression objectives for all fires. Tactics will utilize the minimum tool concept to achieve these objectives. Non-mechanized equipment will be used unless mechanized equipment is approved by the District Manager. Suppression work will be conducted to minimize ground disturbance and vegetation cutting while safely meeting objectives. Mop-up methods that minimize disturbance will be preferred.

Fire management within the WSAs would continue in accordance with the provisions of the WSA IMP. Until an approved FMP is prepared, all wildland fires will be suppressed.

Response to fire incidents that escape initial attack, have the potential to escape initial attack, or occur in sensitive areas, will utilize one or more resource advisor(s) to assist in planning and implementation of suppression activities. These advisors assist the incident commander with suppression decisions concerning resource values and priorities. These individuals know the resources and the landscape near the fire and have a working relationship with local land owners. Although resource advisors do not make suppression decisions, their advice and concerns have a direct bearing on most major suppression decisions.

3.17 Lands and Realty

The approximate percentages of surface area administration/ownership within the Planning Area are as follows: BLM-76.0 percent, USFWS - 1.0 percent, State of Oregon (Division of State Lands, ODFW) - 0.3 percent, and privately owned - 22.7 percent (Table 3.17.1). All the private land in the Planning Area is zoned by Harney County for exclusive farm and range use (EFRU-1) except the areas at Frenchglen and Fields, Oregon, which are zoned rural service center.

The primary use of the private land is cattle ranching and grazing. Other uses include recreation, hunting, small business, and agriculture, with native hay as the primary crop.

3.17.1 Administrative Sites

BLM administrative sites in the Planning Area are the Frenchglen Fire Guard Station, and the Fields Administrative Site. In addition, a nonhistorical building at the Riddle Brothers Ranch is utilized as an administrative facility to house employees working in the area.

Table 3.17.1: Land Ownership and Administration in the Planning Area

Land Ownership/Administration	AMU Acres	CMPA Acres	Total
BLM	1,221,314	428,156	1,649,470
U.S. Fish and Wildlife	26,422	0	26,422
Private (including county)	427,363	66,910	494,273
State of Oregon	6,576	1,070	7,646
Total	**1,681,675**	**496,136**	**2,177,811**

3.17.2 Land Retention, Acquisition, and Disposal

The Andrews-Drewsey Land Tenure MFP Amendment divided BLM administered lands into three zones that identify the public land for potential land tenure adjustments (e.g., acquisition or disposal), consistent with existing regulations and BLM policy. The FLPMA Section 102.(a)(1) provides that "...the public lands be retained in federal ownership unless as a result of the land use planning procedure provided for in this Act, it is determined that disposal of a particular parcel will service the national interest..." Zone 1 lands have been identified through the MFP Amendment for retention in public ownership. These are also areas where emphasis will be placed on acquisition of land containing high public resource values. Zone 2 lands have been identified for limited retention and consolidation of ownership. Zone 3 lands generally have lower resource value and have been determined difficult and uneconomic to manage and may be identified for disposal. Methods for implementing land disposal actions include the following: (a) BLM and other federal jurisdictional transfers; (b) transfers to state and local agencies (e.g., R&PP patents, in-lieu selections, airport patents); (c) state exchanges; (d) private exchanges; (e) sales; (f) American Indian allotments; and (g) desert land entries. Current GIS data show approximately 1,533,505 acres of public land designated as Zone 1, 108,219 acres designated Zone 2, and 7,745 acres designated Zone 3 within the Planning Area. Land management requirements in the Steens Act such as land exchanges, wilderness designation and WSA boundary adjustments create inconsistencies between the current land tenure designations established by the MFP Amendment and legislative requirements. These inconsistencies will be addressed through the RMP process by adjusting land tenure zones to provide consistency with the Steens Act. Upon approval of the plan, the new zones and management actions will constitute a revised land tenure plan.

BLM records show that since 1980, the BLM acquired through purchase, exchange, or donation approximately 207,022 acres in Harney County. During the same time period, the BLM conveyed 318,964 acres out of federal ownership, resulting in a net gain in private and state ownership of 111,942 acres. From this information an assumption can be made that an increase in county property tax revenues would have resulted from this net conversion of tax exempt federal lands to taxable private lands. Further, some of these conveyed federal lands have been converted to alfalfa, crested wheatgrass, or other development that would not have occurred under federal ownership. Conversion of lands to a higher commodity value typically results in a higher assessed value on the land, thus additionally increasing county tax revenues.

One specific purpose of the Steens Act (Section 1(b)(4)) was to "provide for the acquisition of private lands through exchange for inclusion in the Steens Mountain Wilderness and the [CMPA]." In order to do this, a number of specific land exchanges were outlined in the Steens Act and carried out by the BLM. Lands acquired within the CMPA became part of the CMPA and are managed under its laws and management plans. Lands acquired in the Steens Mountain Wilderness and WSAs came under those designations and are managed as such. The Steens Act also allows for additional future acquisitions of private lands in the CMPA, the Steens Mountain Wilderness, and the WSAs, and

provides that lands acquired within the boundaries of these areas become part of the designation and be managed accordingly.

3.17.3 Withdrawal Areas

The Mineral Withdrawal Area designated by the Steens Act encompasses the entire CMPA and the Steens Mountain Wilderness. Subject to valid existing rights, no mining or exploration will be permitted anywhere in the CMPA. Exceptions are the existing gravel operations within the CMPA, which are permitted by the Steens Act as follows: Section 401(b) of the Steens Act "... The Secretary may permit the development of salable mineral resources, for road maintenance only, in those locations identified... as an existing 'gravel pit' within the mineral withdrawal boundaries (excluding the Steens Mountain Wilderness, WSAs, and designated segments of the National WSRs System) where such development was authorized before the date of enactment of this Act."

Section 113(g) of the Steens Act also withdraws all lands within the CMPA from all forms of entry except "land exchanges that furthers the purpose and objectives specified in Section 102 of the Steens Act. WSRs and the Steens Mountain Wilderness also carry with them their own withdrawals made under the terms of the Wilderness Act and WSRs Act. For these reasons the CMPA, depending upon the location, may have a variety of overlapping duplicate withdrawals.

A variety of smaller withdrawals also exist throughout the Planning Area. These include Public Water Reserves, Power Site Reserves and a BLM administrative site withdrawal at Fields. Some of the lands within the Malheur NWR are withdrawn lands where jurisdiction was conveyed to the USFWS. Additional discussion relative to mineral closures and withdrawals can be found in Energy and Minerals, Section 3.13.

3.17.4 Access

Many roads or segments of roads crossing private lands in the Planning Area have no provision for legal public access. Together with the access restrictions provided in the Steens Act, this situation may severely limit legal public access to large portions of public land within the Planning Area. Over time, the BLM has acquired public access easements on a few major roads such as the Steens Loop, the Trout Creek Loop Road, and a few other isolated locations. More recently, land exchanges authorized by the Steens Act have secured public access easements on several private road segments. See Map 2.18.2 for the specific location of existing and potential easements.

Some roads may be "public ways" established through prescription under State law where unobstructed public use over time may have created a public easement across private lands. Although these roads may provide access to public lands, the BLM has no jurisdiction over these road segments nor does BLM attempt to assert these rights to provide the public with legal access. Assertion of a public way is a private matter between the landowner, the road users, and local and State government. The establishment of a public way through prescription is a matter of State law; therefore, it cannot be applied to roads crossing federal lands.

As discussed in previous sections, the Steens Act specifies that "reasonable access" will be provided to private and state landholdings within the boundaries of the CMPA and the Steens Mountain Wilderness. Creating the CMPA and implementing the wilderness regulations have raised access issues to the forefront of management planning. The Steens Act, the Wilderness Act, and the WSA IMP guide access and use of the roads/transportation within the CMPA. In addition, the TP, as well as the Proposed RMP/FEIS Section 3.18, address the issue of access and outline specific protocols and objectives. For additional discussion on roads, access and transportation issues, see Transportation and Roads, Section 3.18.

3.17.5 Rights-of-Way and Land Use Authorization

Although the Steens Act does not specifically prohibit grants of new ROWs or land use authorizations, many of its provisions would limit the number and type of grants. An example is the Steens Act's prohibition of road construction and facilities. Valid existing rights are protected under the Steens Act. Regarding ROWs, the Steens Act specifically states "nothing in this Act shall have the effect of terminating any valid existing ROW on public lands included in the Cooperative Management and Protection Area."

Existing ROWs within the CMPA are primarily limited to small scale electric and telephone distribution lines. Access roads across public lands to private lands generally have no recorded rights associated with them. Use of these roads by land owners and others is considered "casual use" where no authorization is needed as long as such use does not cause appreciable disturbance to the public lands, its resources, or improvements and the route remains open to use. For additional discussion on roads, access and transportation issues, see Transportation and Roads, Section 3.18.

No well maintained county roads or state or federal highways are within the CMPA, although these roads and highways comprise large portions of the CMPA boundary. Likewise, there are no designated ROW corridors within the CMPA. There are no sites containing communications facilities on public land within the CMPA. Several communications facilities are located on state land at the crest of Steens Mountain.

In the remainder of the Planning Area, ROWs have been granted for small scale overhead electric distribution lines and buried telephone lines to individual ranches, rural residences and small communities. Harney Electric Cooperative and CenturyTel operate most of these facilities.

A single communication site is located on public land in the AMU at Buckskin Mountain on the eastern boundary of the Planning Area. The site has two authorized facilities including a microwave site operated by CenturyTel and a community TV translator operated by the Red Point Community Club.

Primary county roads in Harney County are authorized by FLPMA ROWs. The remainder of the roads operated and maintained by the County are presumed to be authorized by ROWs under the provisions of RS2477. The County has never asserted nor has the United States formally acknowledged such rights. Other than these, there are few documented ROWs for access roads across public lands in the AMU.

A few ROWs do exist in the Planning Area for water facilities such as ditches, canals, diversions, and reservoirs. Most of these were granted under pre-FLPMA authorities. Some types of irrigation ROWs such as those granted under the authority of RS2339 and RS2340 (Act of July 26, 1866) required no explicit approval by the United States for the ROW to exist and thus are not documented or recorded. The facility had only to be constructed and water right held under state law prior to the enactment of the FLPMA in 1976 for a grant to occur.

BLM land status records indicate that since 1980 there have been approximately 60 ROW and realty use authorization cases in the Planning Area, currently affecting approximately 2,000 acres. Many of these ROWs authorize existing facilities and replace older, less explicit grants. There have been no large scale (greater than 69kV) electric transmission lines or other large utility ROWs established during that timeframe. Those that do exist in the Planning Area were established prior to 1980. There would be no large scale land use proposals in the reasonably foreseeable future and nothing to indicate that this trend would be any different for the next 20 years.

The Andrews MFP designated several corridors in the Planning Area outside the CMPA. These corridors are associated with power transmission lines operated by Harney Electric Cooperative, and major county roads. In addition, a designated corridor exists along the route of an east-west 500kV power transmission line proposed by Pacific Power & Light (PP&L) during the early 1980s through the south central portion of the Planning Area. The 500kV line was ultimately constructed along an alternate route through the Three Rivers RA. No facilities exist along the PP&L corridor except where Harney Electric's line follows the corridor through Long Hollow and a portion of the Alvord Desert. Further project development in the unoccupied sections the PP&L corridor would cross portions of WSAs and likely impair wilderness values. In addition, recent RMP decisions in neighboring planning areas have eliminated the PP&L corridor designations in those land use plans. This corridor still remains a Priority 2 corridor identified by the Western Utility Group where project development might be expected in three to five years.

There are no ROW and realty use avoidance/exclusion areas designated by the Andrews MFP. The Three Rivers RMP which affects the northern portions of the CMPA designated the Stonehouse WSA, an exclusion area, and the Kiger HMA, an avoidance area.

No commercial wind, solar, or other renewable energy development is located within the Planning Area and no proposals for this type of development are known. The BLM, in cooperation with the National Renewable Energy Laboratory, an agency of the Department of Energy, has developed a Renewable Resource Assessment Project. The findings of this project are contained in a BLM draft report entitled "Assessing the Potential for Renewable Energy on Federal Lands." The report identifies criteria that are considered in establishing potentials for various types of renewable energy. It also summarizes these potentials and identifies the top 25 BLM planning areas with the highest potentials for various classes

of renewable energy development, and "top pick" planning areas for combined renewable energy development. The Planning Area was not included in any of the top 25 for any class of renewable energy, nor was it a "top pick" planning area.

An example of the report findings is the criteria used for establishing potentials for wind. These criteria include: areas with Wind Class 3 or greater; sites must be within 25 miles of a major power transmission line and within 50 miles of a major road or railroad; and the surrounding land use must be compatible with wind energy development. Other factors considered in wind potentials include ease of permitting and siting, regional market conditions, proximity to population centers, elevation, slope, and site size and configuration. The Planning Area has few areas with Wind Class 3 or better. Higher classes are generally located on the crests of the area's mountain ranges including the Steens, Trout Creek, and Pueblo Mountains where wind development would be incompatible with the various special designations affecting these locations.

Any proposals for wind energy development would be processed in accordance with a new Interim BLM Wind Energy Policy which provides consistent guidance on the timely processing of wind energy ROW applications and that addresses the following: 1) land use plan requirements for wind energy development; 2) authorizations for wind energy activities; 3) establishment of rental fees for various types of development; 4) efficient processing and tracking of applications; 5) due diligence requirements; and 6) requirements for environmental review of wind energy activities.

Film permits and wilderness access permits under 43 CFR 2920 are the primary type of land use authorizations that have been granted or might potentially be proposed. There are no agricultural or occupancy permits or leases in effect in the Planning Area.

Except for overflight areas, there has been no military activity in the Planning Area in recent history and no known proposals for such activity. The BLM currently has no authority to regulate military overflight but may cooperate and coordinate with the Federal Aviation Administration and the military on this type of activity.

3.18 Transportation and Roads

The Planning Area has private, state, county, and BLM roads. Some roads are maintained to a high standard while others are more primitive routes receiving very little maintenance. Road uses include rancher access for livestock management, access to private lands, the general public seeking recreational opportunities, and agency administration. Many of the roads serve as important access routes to public lands. Since traffic control signing is limited or nonexistent along BLM roads, caution is required when traveling these routes.

Priorities for maintenance in the Planning Area are established as follows: 1) safety of users, 2) high-use roads, 3) resource protection, and 4) all other roads and routes. Road construction has been limited to upgrading segments of existing routes to improve access or alleviate maintenance or environmental problems. Section 112(d) of the Steens Act states that new road construction is only permissible if the BLM finds it necessary for public safety or protection of the environment.

Section 112 of the Steens Act calls for a comprehensive TP as part of this Proposed RMP/EIS. The TP outlines the BLM's philosophy toward transportation management and provides specific guidelines for management of individual roads, as well as general standards for construction, maintenance, and access for the CMPA. The portion of the Planning Area outside the CMPA will continue to be managed under currently established transportation guidelines. OHV and mechanized vehicle use and direction relates closely to the TP and is discussed in the following section of this document.

In 2000, as part of the Steens Act, Congress closed the Steens Mountain Wilderness to motorized and mechanized vehicles, mechanical transport, motorized equipment, and the landing of aircraft. Certain roads within the CMPA are bounded by wilderness on both sides but are not actually part of the wilderness. These roads include portions of the Steens Loop Road, Cold Springs Road, Grove Creek Road, Newton Cabin Road to Indian Creek, Fish Creek Road, portions of the Bone Creek Road, Big Alvord Creek Road, and Three Springs Road. Roads that border the wilderness have specified setbacks from their centerlines, consistent with BLM wilderness policy. High standard roads such as Highway 205, East Steens Road and Catlow Valley Road have a 300-foot setback. The portions of the Steens Loop Road that border the wilderness have a 100-foot setback, while all other roads have a 30-foot setback. Additionally, most of the Steens Loop Road is closed during the winter except by winter recreation permit over a portion of the north segment, or as needed to access private property.

All motorized and mechanized vehicle travel within the CMPA is prohibited off road and is limited to the routes specifically designated for their use as part of this TP. Exceptions to the off-road prohibition include emergencies, BLM administration, construction or maintenance of agricultural facilities, fish and wildlife management, or ecological restoration projects. Exception criteria is located in Appendix M. All off-road motorized or mechanized use on public lands within the CMPA must be authorized by the BLM.

Future management of the roads and ways within the CMPA is described in Chapter 2 of this document. Map 2.18.2 shows the existing roads and ways within the Planning Area as well as current maintenance levels within the CMPA. Map 2.18.1 more specifically shows the routes within the CMPA and includes the Service/Permit Routes and Private Access Routes used by the livestock operators and private land inholders. Public access easements are also depicted on both maps.

3.19 Off-Highway Vehicles

OHV (motorized vehicle) use is frequently associated with hunting, fishing, and driving for pleasure and also occurs for administrative purposes such as management of livestock and maintenance of range projects. In accordance with 43 CFR 8342.1, all public land in the Planning Area is designated as open, limited, or closed with regard to vehicle use. In an open area, all types of motorized and mechanized vehicle use are permitted at all times (43 CFR 8340.0-5(f)). The BLM designates areas as "open" for intensive OHV and mechanized vehicle use where no compelling resource protection needs, user conflicts, or public safety issues exist to warrant limiting cross-country travel. In a limited area, motorized and mechanized vehicle use is restricted at certain times, in certain areas, to designated routes, to existing routes, to certain vehicular uses, or seasonally (43 CFR 8340.0-5(g)). The BLM designates areas as "limited" where it must restrict OHV and mechanized vehicle use in order to meet specific resource management objectives. In a closed area, motorized and mechanized vehicle use is prohibited (43 CFR 8340.0-5(h)). Areas are designated as "closed" if closure to all motorized and mechanized vehicular use is required by law or designation or is necessary to protect resources, promote visitor safety, or reduce use conflicts. WSAs can be designated as limited to existing or designated ways or closed, while wilderness is closed to OHV and mechanized vehicle use.

There are currently 675, 914 acres open, 680,016 acres limited to designated routes, 123,455 acres limited to existing routes, and 170,084 acres closed to OHV and mechanized vehicle use in the Planning Area. A seasonal (winter) closure encompasses 93,444 acres in the Steens Mountain area.

The Andrews MFP specifically addressed OHV use of the Alvord Desert playa. The MFP states that "The Alvord Playa would be managed for all legitimate public land uses as well as ORV [OHV] use. Recreation vehicles and commercial uses which do not impair the wilderness values of the Alvord WSA [sic] would be allowed until Congress makes its final determination on wilderness." This statement is a recognition of the fact that OHV and mechanized vehicle use occurred on the playa prior to the FLPMA. OHV and mechanized vehicle use of the Alvord Desert playa does not cause permanent impairment of the wilderness values and does not preclude Congress from eventually designating the area as part of the national wilderness system. The BLM has allowed this use to continue based on the determination that managed OHV and mechanized vehicle use would not preclude future wilderness designation. Should the Alvord Desert playa be designated as wilderness, OHV and mechanized vehicle use would not be allowed on the playa.

OHV and mechanized vehicle designations for the CMPA only are 170,084 acres closed; 120,310 acres limited to existing roads; and 137,763 acres limited to designated roads. OHV and mechanized vehicle use in the CMPA is addressed in Section 112(b) of the Steens Act:

> (1) PROHIBITION. – The use of motorized or mechanized vehicles on federal lands included in the Cooperative Management and Protection Area –
>
> > (A) is prohibited off road; and
> >
> > (B) is limited to such roads and trails as may be designed for their use as part of the management plan.
>
> (2) EXCEPTIONS. – Paragraph (1) does not prohibit the use of motorized or mechanized vehicles on federal lands included in the Cooperative Management and Protection Area if the Secretary determines that such use -–
>
> > (A) is needed for administrative purposes or to respond to an emergency; or

(B) is appropriate for the construction or maintenance of agricultural facilities, fish and wildlife management, or ecological restoration projects, except in areas designated as wilderness or managed under the provisions of section 603 (c) of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1782).

3.20 Recreation

Federal agencies including the BLM, USFS, and USFWS, administer over 51 percent of the lands in Oregon and 70 percent of the lands in southeast Oregon (Harney, Malheur, and Lake Counties), making them the largest managers of outdoor recreation and land facilities in the state (Oregon Parks and Recreation 2000). Therefore, these agencies play a major role in providing dispersed recreation opportunities as well as resource protection of some of the state's most unique and important scenic, natural, and cultural resources.

Sightseeing, driving for pleasure, fishing, and hunting are among the most popular types of dispersed recreation, according to the Southeast Oregon Recreation Plan for Harney, Lake and Malheur Counties. Nonmotorized boating, horseback riding, camping, hiking, wildlife viewing, and OHV use are also popular activities in the Planning Area. From October 2000 through September 2001, the Planning Area had 259,797 visitor days, up from 247,002 the previous year. Specific activities such as hunting, hiking, and camping as well as sites visited are discussed below.

Some of the recreation management objectives for the Planning Area are outlined in the Andrews MFP as follows:

- Encourage a wide range of recreation activities in addition to hunting and fishing;
- Cooperate with development of High Desert Trail;
- Limit vehicle use in campgrounds to ingress and egress;
- Provide quality recreational opportunities for the public; and
- Protect, preserve, and promote recreational resources and provide facilities, information, and services to promote safety and a maximum recreational experience.

3.20.1 Recreation Activities

The Planning Area includes all or portions of the Beaty Butte, Juniper, Steens Mountain, and Whitehorse ODFW hunt units. Deer, pronghorn antelope, bighorn sheep, and elk are hunted with rifle, muzzleloader, and bow in this area. During the 2000 Hunting Season in the four hunt units combined, 8,323 hunter days were spent hunting deer with a 47 percent success rate; 3,237 hunter days were spent hunting elk with a success rate of 13 percent; and 923 hunter days were spent hunting pronghorn antelope with an 87 percent success rate (ODFW 2002). Upland bird hunting, primarily for chukar partridge, is a popular late fall and winter activity. Fishing is a popular activity in the Planning Area with its variety of fish species including Lahontan cutthroat trout, redband trout, and several others. There are several lakes, reservoirs, streams, and rivers in the Planning Area that provide fishing as well as sightseeing, camping, hiking, and wildlife viewing opportunities. These areas are discussed in detail in the Riparian and Wetlands, and Fisheries and Wildlife Sections (3.5.1 and 3.6).

Several hiking trails in the Planning Area are located in the CMPA. The High Desert Trail, the longest trail, also runs through the AMU. A component of the National Recreation Trails System, it begins at Denio Canyon near the Nevada border south of Fields, Oregon and is 240 miles long. The High Desert Trail uses a corridor concept with no clearly defined or maintained path to follow. Hikers choose their own route with the help of a printed guide and strategically placed cairns. Portions of the trail are open year round. The corridor is cooperatively managed with the Desert Trail Association.

Hiking and equestrian trails in the CMPA are generally open from June to late October. The Wildhorse Lake trail starts at the Steens Mountain Summit area and is 1.5 miles long from there to the high elevation lake. The trail is not maintained and is unsuitable for horses because of slick footing and dangerous cliffs. This trail had a minimum of 683 visitors in 2001 who used it for hiking/walking, backpacking, and fishing. The Little Blitzen trail starts near South Steens Campground. It is approximately nine miles in length and is maintained on a limited basis. In 2001, at least 326 trail users hiked/walked, backpacked, fished, or rode horses. The Big Indian trail starts at South Steens Campground. It is maintained on a limited basis and is approximately seven miles long. At least 408 people used the trail in 2001 for hiking/walking, backpacking, fishing, horseback riding and hunting. The Steens Summit trail begins near the top of

Steens Summit and follows the closed road to the highest point on Steens Mountain. It is 0.5 mile in length. The Blitzen River "fishing path" begins at Page Springs Campground.

Camping occurs throughout the Planning Area, but primarily on Steens Mountain and the Alvord Desert; camping is mainly primitive and dispersed. The Alvord Desert playa, part of the Alvord Desert WSA, is a popular land sailing destination in the spring.

The season of use for the CMPA is generally from July to November, with the highest use on holiday weekends and during hunting season. The main activities include sightseeing, camping, fishing, hiking, nature study, and hunting. Other uses include picnicking, bicycling, photography, rock hounding, snowmobiling, cross-country skiing, and OHV use. During the winter months, vehicle access to the snow line on the North Steens Loop Road is allowed by permit only for winter recreation. Foot traffic past the locked gates does not require a permit. The developed recreation sites are used both as staging areas for dispersed uses such as hunting, hiking, and nature study, and as destination points. Steens Mountain affords spectacular geologic features and wide-open spaces where wildlife is abundant and vegetation diverse, thus providing outstanding recreation opportunities within a relatively undeveloped landscape.

The four developed campgrounds in the CMPA are Page Springs, Fish Lake, Jackman Park, and South Steens. These campgrounds include such amenities as picnic tables, drinking water, fire rings, and vault toilets. In addition, there are facilities for equestrian use at South Steens and a boat ramp and fishing platform at Fish Lake. Page Springs campground is located four miles east of Frenchglen on the North Steens Loop Road. The campground is adjacent to the Donner und Blitzen River at 4,200 feet. A day use area is also located here. Fish Lake campground is located 17 miles east of Frenchglen on the North Steens Loop Road. It is located in an aspen grove at 7,400 feet. Only nonmotorized boats are allowed on Fish Lake. This campground is located on Oregon State land, but is operated and managed by the BLM through a permanent easement from the ODFW. The Jackman Park campground is a small campground located in an aspen grove three miles from Fish Lake at 7,800 feet. South Steens campground is located 18 miles east of Highway 205 on the South Steens Loop Road. The campground was built in 1996 and is located in a juniper grove at 5,300 feet. One campground loop has hitching rails and small corrals for horses. At Mann Lake, camping is allowed in two areas near the shore. The recreation site has vault toilets and a boat ramp. It is located approximately 22 miles south of Highway 78 on the East Steens Road. The lake is stocked with hatchery Lahontan cutthroat trout. Boats with 12 horsepower motors or less are permitted.

The 67-mile Steens Mountain BCB links the four developed campgrounds and seven overlooks. The BCB was traveled by 18,950 visitors to the area in 1975; 45,585 in 2000; and 47,947 in 2001.

Fees are collected at the developed campgrounds from approximately April through October with the revenues returned to the site for improvements, facility maintenance, and visitor services as part of the Pilot Recreation Fee Demonstration Program, which Congress authorized in 1995. The intent of the program is to develop and test entrance and user fees to maintain and improve the natural resource, recreation facilities, and services. Participating agencies are allowed to retain all the demonstration project revenues, and at least 80 percent of the revenues are utilized at the sites where they are collected. These revenues yield substantial benefits by providing on-the-ground improvements at local recreation sites. In 2001, campground revenues were approximately $42,300.

The Cold Springs Road is closed to the public through Riddle Brothers Ranch to protect the historic and cultural resources of the site. Currently, visitors may walk the last mile or ride horseback into the historic site from the south during the daylight hours. Motorized vehicles are allowed to drive from the South Steens Loop Road to a parking spot near the "Honeymoon Cabin" on the days posted and when the caretaker is present. Motorized vehicle travel through Riddle Brothers Ranch on the Cold Springs Road may be permitted on a case-by-case basis.

During winter months, the Steens Loop Road is closed to general vehicle traffic. In order to drive through the Page Springs gate to the snow line on the North Steens Loop Road, winter recreationists must obtain a permit and key from the Burns BLM. For safety reasons, permits are only issued to groups of two or more people. Prospective permittees receive winter recreation information, permit application, permit conditions, winter recreation program map, winter survival tips, and Leave No Trace winter use principles.

The primary winter activities are cross-country skiing, snowshoeing, and limited snowmobiling. Ski and snowshoe use is not limited. Snowmobiles are allowed only along the North Steens Loop Road from snow line to the Kiger Gorge Overlook. The narrow ridge with cliffs of the East Rim and Little Blitzen Gorge on either side present too great a hazard for snowmobile traffic, especially under conditions of low clouds, high winds, and falling snow. Snowmobile use to

Dingle Creek or along the Cold Springs Road to Nye Cabin is allowed only when the group is accompanied by either a member in good standing of the High Desert Snow Drifters Snowmobile Club or a Burns District Special Recreation Permittee who is authorized to operate snowmobile trips. The number of groups that can be on the mountain at one time is limited. The number of wheeled vehicles per month allowed through the Page Springs gate is also limited.

Permits for winter recreation can be issued when 1) there is adequate snow cover to protect soils and vegetation and 2) the snow poles marking the North Steens Loop Road have been placed. Winter recreation may be curtailed when 1) the North Steens Loop Road would be damaged by vehicle traffic, 2) severe winter conditions stress wintering mule deer, and 3) vehicles are unable to drive past the critical deer winter range.

3.20.2 Special Recreation Management Areas and Extensive Recreation Management Areas

In order to manage recreation, public land is classified as SRMAs and ERMAs. In SRMAs, recreation is under intensive management and investment in facilities and supervision. ERMAs are typically managed for more dispersed recreation with less oversight of facility development. SRMAs and ERMAs are designated through the RMP process. The Steens Mountain Recreation Lands is an existing SRMA. Currently, the entire CMPA is managed as an SRMA. The AMU is managed as an ERMA.

Dispersed recreation opportunities exist throughout the entire Planning Area. Opportunities for developed recreation exist at several sites within the CMPA. The Lakeview to Steens BCB provides access to recreation opportunities in the Planning Area. A State Scenic Byway and several Tour Routes through the Planning Area were recently approved by the State Commission on Tourism and the State Commission on Transportation. Adjacent areas of interest managed by other agencies include the Malheur NWR and the Sheldon-Hart Mountain NWR. Although the majority of visitors to the Planning Area are from Oregon, an increasing number are from out of state and abroad. Recent publications and broadcasts featuring BLM attractions have increased visitation to the area.

3.20.3 Special Recreation Permits

SRPs are required for specific recreational uses of the public lands and related waters. They are issued as a means to manage visitor use, protect natural and cultural resources, and provide a mechanism to accommodate commercial recreational uses. The types of permits that can be issued are listed below:

1) Commercial - Recreational use of public lands and related water for business or financial gain. Examples are scenic tours, outfitters and guides, trail rides, cattle drives, photography associated with recreational activity, and use by scientific, educational, and therapeutic or nonprofit organizations when certain criteria are met.

2) Competitive - Any organized, sanctioned, or structured use, event, or activity on public lands in which two or more contestants compete and either 1) participants, register, enter or complete an application for the event, or 2) a predetermined course or area is designated. Examples are OHV races, horse endurance rides, or mountain bike races.

3) Organized group - Permits for noncommercial and noncompetitive group activities and recreation events. Examples include a scout campout, a large family reunion, or a school group activity.

4) Commercial Day Use - Special commercial permit provided by the Burns BLM for use within limited locations in the Planning Area. It is a one-day permit available for commercial activities such as vehicle tours. Commercial Day Use permit stipulations are developed on a case-by-case basis.

5) Special Area - Officially designated by statute or Secretarial order. Examples include camping in long-term visitor areas in California and Arizona or floating many BLM managed rivers. An August 17, 2001 *Federal Register* notice designated the CMPA and the Burns BLM WSAs as special areas for which permits are required for organized groups.

6) Vending - Temporary, short-term, nonexclusive, revocable authorizations to sell goods or services on public land in conjunction with a recreation activity. Examples are T-shirt sales in conjunction with an OHV race, a hot dog stand at a motocross event, firewood sales in a BLM campground, and shuttle services.

Forty SRPs were issued or active in 2001 and include the following: 15 commercial, three organized group, two other, and 20 winter recreation permits. SRP revenues in 2001 were approximately $3,800.

3.21 Areas of Critical Environmental Concern

The FLPMA and BLM policy require the BLM to give priority to designation and protection of ACECs during the land use planning process. ACECs may be nominated by BLM staff, other agencies, or members of the public at any time. ACECs are parcels of public land that require additional management attention to protect special features or values. ACECs may be established to protect important historic, cultural, or scenic values; fish, wildlife, or other natural resources; or human life and safety. RNAs are a specific type of ACEC that always contain natural resource values of scientific interest and are managed primarily for research and educational purposes. Outstanding Natural Areas are another specific type of ACEC that exhibit outstanding scenic splendor, natural wonder or scientific importance. ACEC nominations are reviewed by a BLM ID team to determine whether they meet the relevance and importance criteria in BLM Manual 1613. Nominated ACECs that meet the relevance and importance criteria must be evaluated in a land use plan to determine whether protection is warranted.

Fifteen designated ACECs, nine of which are RNAs, are located in the Planning Area. These ACECs were designated to provide special management and protection to areas with special characteristics such as diverse ecosystems, landforms, plant communities, and critical wildlife habitat. Thirteen other areas were nominated by various publics to be ACECs, including three additions to existing ACECs. Six of those areas nominated, three of which are RNAs, were determined to have all met the relevance and importance criteria needed to become ACECs, and will be analyzed to determine whether they should be designated. The existing ACECs, as well as their location and size, are listed in Table 3.21.1. Appendix K contains a description of each existing and proposed ACEC and their relevant and important values.

Management of the ACECs/RNAs is directed by the Andrews MFP for the entire area; the Steens Act for the CMPA; and the Wilderness Act or WSA IMP for those ACECs/RNAs located in a WSA or the Steens Mountain Wilderness. Specific direction calls for retention of existing and designation of new ACECs/RNAs where relevance and importance criteria are met and special management is required to protect the values identified.

The designation of three existing ACECs is proposed to be revoked either because protection is not needed to preserve the relevant and important values of the ACEC, or the values contained in the ACEC do not meet the relevant or importance criteria at this time. The Steens Mountain ACEC, designated for its scenic qualities, covers more than 50,000 acres of public land within the CMPA, most of which is in either wilderness or WSA. With the protection afforded by those additional designations, the ACEC designation would not be necessary. The Alvord Peak ACEC, designated to protect the habitat for bighorn sheep, is located entirely within the Steens Mountain Wilderness. Bighorn sheep are a special status species, and protection is afforded to the habitat of bighorn sheep. With protection provided by wilderness and special status species habitat, ACEC designation is not necessary. The Pickett Rim ACEC covers 4,000 acres in the rims west and north of Frenchglen, Oregon. It was designated to protect habitat for many kinds of nesting raptors. Pickett Rim is only one of many places, around the edge of the Catlow Valley on public land, where raptors can nest without any threats from various management actions. It has been observed that Pickett Rim currently contains a relatively low number of nesting raptors, so it was determined by an ID team that the ACEC did not now contain the relevant and important values needed for the area to remain designated as an ACEC. Protection for raptor nesting areas is also afforded to areas outside special designated areas through routine application of seasonal stipulations.

The other 12 existing ACECs, as well as the six proposed ACECs were also reviewed by an ID team and were determined to have the relevant and important values necessary for designation as an ACEC. The Catlow Redband Trout Proposed ACEC was not considered for designation in the Proposed RMP because it is located within the Steens Mountain Wilderness, which affords more protection. Other ACECs located within the Steens Mountain Wilderness were originally designated as RNAs and became ACECs from that designation. Those RNA/ACECs will remain designated.

Table 3.21.1: Areas Of Critical Environmental Concern in the Planning Area

ACEC	Located in Withdrawal Area	Location	Acres
Alvord Desert ACEC	Yes	AMU	17,933
Alvord Peak ACEC	Yes	CMPA	15,015
Borax Lake ACEC	Yes	AMU	520
Pickett Rim ACEC	No	AMU	3,941

ACEC	Located in Withdrawal Area	Location	Acres
Steens Mountain ACEC	Yes	CMPA	56,187
Kiger Mustang ACEC[1]	Yes[1]	CMPA	31,859
East Kiger Plateau RNA/ACEC	Yes	CMPA	1,216
Little Blitzen RNA/ACEC	Yes	CMPA	2,530
Little Wildhorse Lake RNA/ACEC	Yes	CMPA	241
Long Draw RNA/ACEC	No	AMU	441
Mickey Basin RNA/ACEC	Yes	AMU	560
Pueblo Foothills RNA/ACEC	No	AMU	2,503
Rooster Comb RNA/ACEC	Yes	CMPA	716
South Fork Willow Creek RNA/ACEC	Yes	CMPA	231
Tum Tum Lake RNA/ACEC	No	AMU	2,064

[1]Part of the Kiger Mustang ACEC is in the Mineral Withdrawal Area and the CMPA (31,859 acres), and the rest is in the Three Rivers RA.

3.22 Wilderness

The FLPMA directs the BLM to manage the public lands and their resources under principles of multiple use and sustained yield. The FLPMA also identifies wilderness values as part of the spectrum of public land resource values and uses to be considered in the BLM's planning, inventory and management activities. A BLM wilderness area is an area of public lands that Congress has designated for the BLM to manage as a component of the National Wilderness Preservation System in accordance with the Wilderness Act of 1964. A WSA is a parcel of public land determined through intensive inventories to meet the definition of wilderness in Section 2(c) of the Wilderness Act.

Public lands were inventoried in the late 1970s and early 1980s to determine whether they contained wilderness values. Those areas found to have wilderness values were identified as WSAs and all other land was eliminated from further consideration in the wilderness review. Some of the criteria used in the wilderness inventory and study were naturalness, solitude, primitive and unconfined recreational opportunities, special features, and manageability.

The Steens Act established the Steens Mountain Wilderness consisting of 170,084 acres of public land. Within the Steens Mountain Wilderness is 94,959 acres of the 97,229 acre No Livestock Grazing Area, which was also designated by the Steens Act. The Steens Mountain Wilderness was the first Congressionally designated livestock-free wilderness in the United States. Subject to valid existing rights, the BLM administers the Steens Mountain Wilderness in accordance with the provisions of the Wilderness Act, BLM Wilderness Regulations (43 CFR 6300), BLM Manual Handbooks 8560 and H-8560-1, Manual 8561, House Report 101-405-Appendices A and B, and the specific directives of the Steens Act.

The Projects for Implementation EA authorized the removal of numerous fences used in livestock management which would be not utilized in the No Livestock Grazing Area after the 2003 grazing season. In addition, the EA allows the construction of new fences for managing the No Livestock Grazing Area within the wilderness.

Specific wilderness management provisions are included in Section 202 of the Steens Act :

> (a) GENERAL RULE. - The Secretary shall administer the Steens Mountain Wilderness in accordance with this title and the Wilderness Act (16 U.S.C. 1131 et seq.). Any reference in the Wilderness Act to the effective date of that Act (or any similar reference) shall be deemed to be a reference to the date of the enactment of this Act.
>
> (b) WILDERNESS BOUNDARIES ALONG ROADS. – Where a wilderness boundary exists along a road, the wilderness boundary shall be set back from the centerline of the road, consistent with the BLM's guidelines as established in its Wilderness Management Policy.

(c) ACCESS TO NON-FEDERAL LANDS. – The Secretary shall provide reasonable access to private lands within the boundaries of the Wilderness Area, as provided in section 112.

(d) GRAZING. -

(1) Administration. - Except as provided in section 113(c)(2), grazing of livestock shall be administered in accordance with the provision of section 4(d)(4) of the Wilderness Act (16 U.S.C. 1133(d)(4)), in accordance with the provisions of this Act, and in accordance with the guidelines set forth in Appendices A and B of House Report 101-405 of the 101st Congress.

Section 112(e)(1) of the Steens Act states that "The Secretary shall provide reasonable access to nonfederally owned lands or interests in land within the boundaries of the Cooperative Management and Protection Area and the Wilderness Area to provide the owner of the land or interest the reasonable use thereof."

Traditional recreational stock use is a current and historic use and activity in the Steens Mountain Wilderness.

The wilderness boundary along existing roads has been established according to the guidelines shown in Section 2.22.1. The Steens Mountain Wilderness boundary is set back 300 feet from the road centerline along short sections of the Catlow Valley Road (Long Hollow) and the East Steens Road (south of Indian Creek Road for approximately four miles). The wilderness boundary along the well traveled Steens Loop Road is set back 100 feet from the road centerline. The Steens Mountain Wilderness boundary is set back 30 feet from the centerline of other open roads including Fish Creek, Grove Creek, Cold Springs, Dingle Creek, Wildhorse Lake Overlook, Big Alvord Creek, Newton Cabin, Three Springs, Indian Creek, Weston Basin, Lauserica, Bone Creek, Miners Cabin, Frazer Spring, Roaring Springs Creek, and short sections of other roads.

Except for the designated No Livestock Grazing Area, grazing of livestock will continue and will be administered in accordance with section 4(d)(4) of the Wilderness Act, the Steens Act, and the guidelines set forth in Appendix A of House Report 101-405 of the 101st Congress.

Goals 1 through 4 of the general BLM wilderness planning policy in BLM Manual 8561, Appendix 1, are as follows:

1. To provide for the long term protection and preservation of the area's wilderness characteristics under a principle of nondegradation. The area's natural condition, opportunities for solitude, opportunities for primitive and unconfined recreation, and any ecological, geological or other features of scientific, educational, scenic, or historical value present will be managed so that they will remain unimpaired.

2. To manage the area for the use and enjoyment of visitors in a manner that will leave the area unimpaired for future use and enjoyment as wilderness. The wilderness resources will be the dominant consideration where a choice must be made between preservation of the wilderness characteristics and visitor use.

3. To manage the area using the minimum tool, equipment, or structure necessary to successfully, safely, and economically accomplish the objectives. The chosen tool, equipment, or structure should be the one that least degrades wilderness values temporarily or permanently. Management will seek to preserve spontaneity of use and as much freedom from regulation as possible.

4. To manage nonconforming but acceptable uses permitted by the Wilderness Act and subsequent laws in a manner that will prevent unnecessary or undue degradation of the area's wilderness character. Nonconforming uses are the exception rather than the rule; therefore, emphasis is placed on maintaining wilderness character.

Except as specifically stated in the Wilderness Act, the following are also currently prohibited in wilderness at 43 CFR 6302.20:

- Operate a commercial enterprise.
- Build temporary or permanent roads.
- Build aircraft landing strips, heliports, or helispots.
- Use motorized equipment; or motor vehicles, motorboats, or other forms of mechanical transport.
- Land aircraft, or drop or pick up any material, supplies or person by means of aircraft, including a helicopter, hangglider, hot air balloon, parasail, or parachute.

- Build, install, or erect structures or installations, including transmission lines, motels, vacation homes, sheds, stores, resorts, organization camps, hunting and fishing lodges, electronic installations, and similar structures, other than tents, tarpaulins, temporary corrals, and similar devices for overnight camping.
- Cut trees.
- Enter or use wilderness areas without authorization, where the BLM requires authorization.
- Engage or participate in competitive use, including those activities involving physical endurance of a person or animal, foot races, watercraft races, survival exercises, war games, or other similar exercises.
- Violate any BLM regulation, authorization, or order.

3.22.1 Steens Mountain Wilderness

Some of the most unique attributes of the Steens Mountain Wilderness are the scenic vistas and spectacular geology. Visitors can experience a diversity of habitats where above the trees, severe climate and thin soils result in a belt of grasses, low-growing plants, and stunted, wind-formed shrubs. At the base of the mountain where water is scarce, sagebrush is common. Stands of quaking aspen can be seen along inviting streams. Mountain mahogany occupies the drier ridge tops. Observant visitors may also catch glimpses of large raptors such as golden eagles, mammals such as the pronghorn antelope, or spectacular geology. Other unique features of the Steens Mountain Wilderness, and the 12 designated Wild rivers in the wilderness, are described below.

The Steens Mountain Wilderness offers outstanding scenery because of the diverse landforms and vegetation. Much of the scenery is the result of glacial action. Kiger, Little Blitzen and Big Indian gorges are classic "U"-shaped glacial canyons with cirques. Glacial lakes are found in Wildhorse Canyon. The east side of the wilderness includes a 5000-foot fault scarp. The progression from the lower sagebrush/bunchgrass community to the upper subalpine zone gives depth and variety to the landscape. Streams are lined by dense growths of willow, cottonwoods, alders, and other water-dependent vegetation. Many of the canyon bottoms and hillsides are covered with aspens, which turn spectacular shades of red, yellow, and orange in the fall.

Steens Mountain is a classic example of Basin and Range topography, with the steep east face the result of faulting. The 9,700-feet elevation of Steens Mountain allowed alpine glaciers to form less than one million years ago. The major rivers and streams flow through glacially-carved canyons. These canyons are as much as 2,000 feet deep and expose layers of Steens basalt. Other glacial features include moraines, striations, and erratics.

Wilderness rivers and streams provide habitat for a variety of native fish species. The Donner und Blitzen River and its tributaries are recognized by anglers as one of Oregon's finest wild trout streams for native redband trout. Lahontan cutthroat trout were once planted in Wildhorse Lake and still provide angling opportunities. Other native fish include mountain whtefish, redside shiner, longnose dace, and Malheur mottled sculpin.

A large variety of wildlife, birds, and amphibians and reptiles are found in the Steens Mountain Wilderness. Mule deer winter along lower Donner und Blitzen River and lower Fish Creek. Deer also summer in the upper parts of the wilderness. Bighorn sheep can be found along the east face of the Steens, in Kiger Gorge, and along the Catlow Rim. Rocky Mountain elk occasionally use the lower elevations during the summer and winter. Pronghorn antelope use the open terrain east of the Donner und Blitzen River and along the east face of Steens Mountain. Pikas are found in the talus slopes near the heads of Little Blitzen and Kiger gorges and Wildhorse Canyon. Kestrels, great horned owls, turkey vultures and ravens nest along the canyon rims. Chukars and California quail are found along the river at the lower elevations, while sage-grouse summer in the uplands. Migratory birds use the river and stream corridors for nesting where willows and cottonwoods provide suitable habitat. Black-rosy finches nest in the subalpine vegetation above Little Blitzen gorge. Spotted frogs inhabit ponds, while rattlesnakes sun themselves on the rocky basalt rims.

The Steens Mountain Wilderness contains a diversity of plant communities. Vegetation includes riparian areas dominated by willows, western birch, mountain alder, black cottonwood, and quaking aspen. Also, sedge and grass-dominated meadows, bog areas, springs, seeps, a variety of wetland communities, high elevation cirque communities, and numerous other alpine and subalpine communities are found in the area. The uplands include areas dominated by big sagebrush, western juniper, mountain mahogany, quaking aspen, and mountain snowberry with Idaho fescue, bluebunch wheatgrass, and needlegrasses. Many sensitive plant species have been documented in the wilderness, including species endemic to Steens Mountain, species which occur in Oregon only on the Steens, and other species of special interest.

Prehistoric animal remains from sabertooth cats, mastodons, giant camels, small camels (llama-like), horses, and horned rodents have been found in the Steens Mountain Wilderness. Plant fossils of true fir, spruce, pine, Douglas fir, juniper, cottonwoods, willow, hornbeam, barberry, serviceberry, mountain mahogany, cherry, rose, mountain ash, indigo bush, sumac, maple, buckbrush, and madrona have also been found. These plants would normally occur in a lake environment in a slightly warmer, more temperate climate than exists in the area today.

Recreation opportunities in the Steens Mountain Wilderness include fishing, hunting, hiking, horseback riding, photography, wildlife, and scenic viewing. The wilderness is very natural and offer visitors many areas to experience solitude in a primitive setting. The wilderness provides a rare two to four day backpack trip or horseback experience for individuals with moderate skill levels, but most visitors do not stay overnight. Most use currently occurs in Little Blitzen and Big Indian gorges, along the Donner und Blitzen River upstream from Page Springs Campground, at Wildhorse Lake, and at Pike Creek. At least 2, 475 people visited Steens Mountain Wilderness in 2003, according to sign ins at the trailhead registers. The actual visitor numbers are believed to be higher because the sign in compliance rate is not known. There are several trails in the Steens Mountain Wilderness, some follow closed two-track roads and are easily hiked, while other are rough, rocky trails pioneered by sheepherders. A portion of the Oregon High Desert National Recreation Trail traverses Wildhorse and Little Wildhorse canyons, the ridge between Big Indian and Little Blitzen, and the Blitzen River canyon rims. Several outfitters and guides are currently permitted by the BLM to operate commercial trips into the wilderness.

What is now Wilderness has been grazed by domestic livestock for over 100 years. Early use by large bands of sheep and local cattle herds gave way to more managed numbers in the mid 20th century. The top of Steens Mountain was closed to grazing in the 1990s. In 2000 the Steens Act created a 97,229 acre No Livestock Grazing Area, of which 94,959 acres are in the Wilderness. 2004 is the first year of full implementation of the No Livestock Grazing Wilderness. Permitted livestock grazing will continue in the remainder of the Wilderness (see Grazing Management section.)

3.23 Wilderness Study Areas and Parcels with Wilderness Characteristics

3.23.1 Wilderness Study Areas

Until Congress acts on the wilderness recommendations or otherwise releases the WSAs for other purposes, they will continue to be managed in accordance with the WSA IMP, the FLPMA, the Steens Act, and other applicable laws and policies.

All or portions of 23 WSAs are located within the Planning Area (Table 3.23.1). There are currently 678,802 WSA acres in the Planning Area. Many of the acreages of WSAs were modified by the Steens Act. Table 3.23.1 reflects the current acreages.

Table 3.23.1: Wilderness Study Areas in the Planning Area

AMU Wilderness Study Areas	Acres	CMPA Wilderness Study Areas	Acres
Alvord Desert	97,760	Blitzen River	31,737
Basque Hills	72,082	Bridge Creek	14,325
Blitzen River	165	High Steens	13,227
Disaster Peak	3,672	Home Creek	1,165
East Alvord	22,161	Lower Stonehouse	7,449
Hawk Mountain	24,226	South Fork Donner und Blitzen	27,969
Heath Lake	21,197	Stonehouse	22,765
High Steens	739		
Mahogany Ridge	27,331		
Pueblo Mountains	73,547		
Red Mountain	15,659		

AMU Wilderness Study Areas	Acres	CMPA Wilderness Study Areas	Acres
Rincon	104,979		
Sheepshead	21,679		
Table Mountain	39,886		
West Peak	8,598		
Wildcat Canyon	8,543		
Willow Creek	2,424		
Winter Range	15,517		
TOTAL	**560,165**	**TOTAL**	**118,637**

3.23.2 Parcels with Wilderness Characteristics

The Oregon Natural Desert Association (ONDA) provided proposed WSA information to the Andrews Field Manager in September and November 2002. An ID team formed, developed a review protocol, reviewed the 24 proposals, and made recommendations to the District Manager. The internal review was completed in August 2003. The team identified one ONDA proposal (Alvord Desert Addition) as having wilderness characteristics, as a result of a change in conditions on the ground. The team also identified three parcels within the CMPA that were acquired by purchase or land exchange, as having wilderness characteristics. The four parcels (DRMP/DEIS Map 2.18) are Alvord Desert (2,033 acres), Bridge Creek (1,526 acres), High Steens (629 acres), and Lower Stonehouse (2,176 acres). The options for protection of the wilderness characteristics, which could lead to some level of use or development of these four parcels, are outlined in Section 2.23.1.2 and analyzed in Section 4.23.4.

All four parcels with wilderness characteristics are adjacent to existing WSAs. All four parcels are also within the Mineral Withdrawal Area. There are no pre-withdrawal claims or leases on any of the parcels. Each parcel is further described below.

The Alvord Desert parcel is natural and, when considered with the Alvord Desert WSA, has outstanding opportunities for solitude and primitive and unconfined recreation. This parcel is outside the CMPA. The vegetation is primarily big sagebrush, perennial grasses, and annual grasses with some salt desert shrubs. The parcel is within kit fox and bighorn sheep habitat, is pronghorn antelope winter range, and is part of the Alvord-Tule Spring-Coyote Lake HMA for wild horses. The Alvord milkvetch, a BLM tracking species, is found in the parcel. There are no range improvements inside this parcel. There are three two-track roads in the northern half of the parcel.

The Bridge Creek parcel is natural and, when considered with the Bridge Creek WSA, has outstanding opportunities for solitude and primitive and unconfined recreation. This parcel in within the CMPA. The vegetation is primarily juniper with some mountain big sagebrush, quaking aspen, and low sagebrush. The parcel is within elk and deer winter range. The section of Little Bridge Creek in the parcel was rated at PFC. Range improvements inside the parcel include three pit reservoirs, a fence along the north boundary, and an old fence along the south boundary. There are also several two-track roads into the parcel from the east and south boundaries.

The High Steens parcel is natural and, when considered with the High Steens WSA, has outstanding opportunities for solitude and primitive and unconfined recreation. This parcel in within the CMPA. Vegetation is primarily native perennial grassland with quaking aspen stands. The parcel contains habitat for Preble's shrew and Sierran springbeauty. The section of McCoy Creek in the parcel was rated at PFC. There are no range improvements associated with this parcel. There are two two-track roads in the parcel.

The Lower Stonehouse parcel is natural and, when considered with the Lower Stonehouse WSA, has outstanding opportunities for solitude and primitive and unconfined recreation. This parcel is within the CMPA. Vegetation is primarily big sagebrush and grasses with juniper, mountain big sagebrush, and quaking aspen. The lower elevations are deer winter range, while the higher slopes are bighorn sheep habitat. There are no special status plant or animal species. Range improvements include a fence along the east boundary. There is one two-track road in the parcel and a pack trail across the western portion.

3.24 Wild and Scenic Rivers

The WSRs Act (PL 90-542 and amendments), section 1(b), states that "certain selected rivers of the nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations." Section 10(a) describes the basic management requirement of protecting and enhancing the values that caused the river to be included in the WSRs System. The Burns BLM manages 12 river segments in the WSRs System. Six are part of the Donner und Blitzen River drainage and were designated when Congress passed the Omnibus Oregon WSRs Act of 1988. A management plan for the Donner und Blitzen River and the five other river segments was completed in 1993. The Steens Act designated an additional six rivers. Mud Creek, Ankle Creek, and the South Fork of Ankle Creek were added to the Donner und Blitzen River System. Wildhorse Creek, Little Wildhorse Creek, and Kiger Creek were also designated. The length of the 12 designated rivers totals 105 miles with the BLM managing approximately 27,324 acres of public land within the WSR corridor boundaries. The remaining 4,022 acres within the WSR corridors are state and private land. Under the Steens Act, all 12 of the rivers fall within the CMPA and all but 1,204 acres of the BLM administered lands in the WSR corridors fall within the Steens Mountain Wilderness (See Table 3.24.1).

Under the WSRs Act, rivers are classified by Congress as either Recreational, Scenic or Wild depending on the extent of development and access along each river at the time of designation. All of the designated river segments in the CMPA were classified as Wild by Congress. River segments with a Wild classification are generally inaccessible except by trail, with watersheds and shorelines essentially primitive and waters unpolluted. Under guidance from the Steens Act, where WSR corridors overlap with the Steens Mountain Wilderness, the more restrictive management requirements apply. Several of the river segments have roads, recreation facilities, historic structures, and other infrastructure that existed at the time of designation. These facilities would continue to be maintained and would be replaced as necessary to provide for public health and safety and resource protection; however, the majority of the river segments are still primitive in character.

The peak use season for most of the WSRs is from June to late October. The most common recreational activities include hiking, fishing, hunting, and backpacking along the river corridors. Trails provide the main access to many of the rivers, and visitor use data described for the trails best represent current visitation to the river corridors. These visitation data are described in the recreation activities section for Little Blitzen River, Big Indian Creek, and Wildhorse Creek. The Blitzen Crossing area is used for fishing, hunting, hiking, and, very rarely, rafting. Approximately 300 to 500 visitor use days occur annually from June to late October. Very limited visitor use data exist for Fish Creek, Mud Creek, and Ankle Creek, but use levels are lower than in the gorges of Little Blitzen River and Big Indian Creek. Page Springs Campground is open year-round and is the trailhead for visiting the north end of the Donner und Blitzen River. Approximately 1,500 visitor use days occur annually from the Page Springs Campground, but most visitors travel only about a mile up the river because the dense vegetation and lack of a defined trail hinder further travel.

Section 5(d)(1) of the WSRs Act requires that federal land management agencies conduct eligibility evaluations for rivers within their jurisdiction as part of their resource planning process. All rivers in the Andrews RA were evaluated for WSR eligibility in 1997 for the SEORMP. Each river was reviewed by an ID Team. The first step was to determine river segment eligibility based on free-flowing conditions and presence or absence of ORVs. The second step was to determine tentative river classification (Wild, Scenic, or Recreational) based primarily on the level of development along the river segment, with the Recreational classification for rivers with a greater degree of development and Wild classification for rivers with the least amount of development.

Of the rivers that were evaluated, 13 were found to be eligible. Since 1997, the status of several rivers changed. In 2000, three (Wildhorse Creek, Little Wildhorse Creek, and Kiger Creek) of the rivers found to be eligible were designated by Congress as WSRs in the Steens Act. The Steens Act also designated Mud Creek, Ankle Creek, and the South Fork of Ankle Creek as additions to the Donner und Blitzen WSR system. These three rivers were not evaluated for eligibility or suitability in 1997 because the majority of land along each river was privately owned. The land ownership along these rivers became predominately public lands administered by the BLM with the completion of several land exchanges also called for by the Steens Act. The remaining ten rivers found to be eligible are listed below with their river mileage, proposed classification, and ORVs:

- Big Alvord Creek - 6.3 miles Wild, ORVs are wildlife and botanic
- Willow Creek - 6.2 miles Wild, ORV is botanic
- Threemile Creek - 4.3 miles Scenic, ORVs are fish and cultural

- Pike Creek - 4.2 miles Scenic, ORV is wildlife
- Mud Creek - 7.2 miles Scenic, ORV is botanic
- McCoy Creek- 30.8 miles Scenic, ORV is wildlife
- Home Creek- 5.5 miles Scenic, ORVs are scenic, recreational, and fish
- Little Cottonwood Creek - 12.1 miles Scenic, ORV is botanic
- Van Horn Creek- 9.9 miles Scenic, ORV is recreational
- Big Trout Creek - 20.3 miles Scenic, ORV is scenic

Table 3.24.1: Summary of Wild and Scenic Rivers

Segment	Description	ORVs	Miles	Acres	In Wilderness
Donner und Blitzen WSR Segments					
A[1]	Donner und Blitzen	S,G,R,F,W,V	13.9	2,540	Except 19 acres in Page Springs Campground and 73 other acres
B[1]	Little Blitzen	S,G,R,F,W,V,C	14.1	6,206	Except 850 acres of Riddle Ranch
C[1]	South Fork Donner und Blitzen	S,G,R,F,W,V	14.9 BLM 3.0 Private	2,730 BLM 758 Private	Except 67 acres in a WSA
D[1]	Big Indian Creek	S,G,R,F,W,V	12.2	5,165	Except 28 acres Steens Mtn. Loop Road
E[1]	Little Indian Creek	S,G,R,F,W,V	4.2	1,362	Yes
F[1]	Fish Creek	S,G,R,F,W,V	6.5 BLM 8.0 Private	1,236 BLM 2,586 Private 40 State	Except 78 acres in Jackman Park Campground and 89 other acres
G[2]	Mud Creek	S,R,F,W	5.1	1,515	Yes
H[2]	Ankle Creek	S,R,F,W	6.0 BLM 2.1 Private	1,656 BLM 638 Private	Yes
I[2]	South Fork Ankle Creek	S,R,F,W	1.6	476	Yes
Wildhorse WSR Segments					
J[2]	Little Wildhorse Creek	S,R,W,B	2.6	922	Yes
K[2]	Wildhorse Creek	S,R,W,B	7.0	2,096	Yes
Kiger WSR Segment					
L[2]	Kiger Creek	S,F,W	4.25	1,420	Yes

[1]Rivers Designated by the 1988 Omnibus Oregon WSRs Act.
Note: River miles may vary slightly from the 1988 legislation due to improvements in mapping data.
[2]Rivers designated by the Steens Act of 2000.
[3]ORVs: S=Scenery, G=Geological, R=Recreational, F=Fish, W=Wildlife, V=Vegetation, B=Botanical, C=Cultural.

The third step was to complete an evaluation and proposed suitability determination for each eligible river segment identified. Section 4(a) of the WSRs Act specifies that the following factors should be considered in the suitability evaluation and determination: the current status of land ownership and use in the area; the reasonably foreseeable potential uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the national WSRs system, and the values that would be foreclosed or diminished if the river is not protected as part of the

national WSRs system; other agencies, organizations, or public interest in designation or nondesignation; administrative costs; ability of the agency to manage and protect the river area; and historic or existing rights. WSR suitability evaluations were completed for the SEORMP.

In 2003 and 2004, the suitability evaluation and proposed determination for each eligible river were reviewed along with public comments on the DRMP/DEIS. No significant changes to the suitability factors assessed for each river were identified. The suitability evaluation and proposed determination for each eligible river is located in Appendix N.

In 2000, Congress established certain additional streams as Wild within the CMPA. Several land exchanges occurred that changed the landownership of some of theses streams. Consideration of new information since the 1997 suitability determination is as follows:

Little Cottonwood Creek: Eligible as a Scenic river. The stated ORV is for vegetation, particularly the localized narrow leafed cottonwood and ephedra community. Due to present and future management, which provides for protection of this ORV without the need for additional Scenic river status, Little Cottonwood Creek was determined as not suitable. Management protections include a nondegradation policy for riparian areas and the WSA IMP under nonimpairment standards. The ID Team determined that the site had no special additional features that would make it especially worthy to go into the National System. In addition, the area has a reoccurring infestation of tent caterpillars that creates a visible perception of the health of the cottonwood trees. There is no new information that would change the suitability of this stream.

Big Alvord Creek: Eligible as a Wild river. The stated ORV is the diversity and excellent condition of riparian habitat. Big Alvord Creek was determined as nonsuitable for Wild designation. The Steens Mountain Wilderness is adjacent to much of this stream and WSA designation is in place for the lower stream reaches. No additional protections were determined necessary by designation of the stream as a Wild river because of T&E fish, WSA, and riparian management policies and management constraints, as well as lack of public access and difficult topography. Wilderness management provides additional protection for the values of this stream, but would not change the suitability of the stream.

Van Horn Creek: Eligible as a Recreational River. The stated ORV is that the stream is located within one mile of the High Desert Trail. Van Horn Creek was determined as not suitable for Wild designation. The values present are currently protected and enhanced under riparian and WSA IMP management. There is no new information that would change the suitability of the stream.

Willow Creek: Eligible as a Wild river. The stated ORV is for the botanical values associated with the Willow Creek ACEC and RNA. The 1997 analysis by the ID Team determined that the stream was not suitable for Wild river status due to the management protection provided by ACEC, RNA and WSA status, as well as its extremely remote and largely inaccessible location. Since 2000, the surrounding lands have been designated as Steens Mountain Wilderness, resulting in additional protections. Current management actions are deemed adequate to protect the stated botanical value. There is no new information that would change the suitability of this stream.

Big Trout Creek: Eligible as a Scenic river. The stated ORV is for the scenic quality of the drainage. Big Trout Creek was determined to be not suitable due to a large amount of interspersed private land along the length of the stream bottom. In addition, the BLM riparian policy is considered adequate for management protections. There is no new information that would change the suitability of this stream.

McCoy Creek: Eligible as a Scenic river. The stated ORV is for diversity of wildlife habitat. McCoy Creek was determined to be not suitable due to the checkerboard pattern of land ownership. The ORV was determined to be protected under existing management (e.g., riparian management policies, and the WSA IMP) and under the protective policies of the CMPA. No new information is available that would change the suitability of this stream.

Mud Creek: This stream was erroneously determined to be eligible for classification. No ORVs were identified for this portion of the stream when analyzed by the ID Team. A fir grove that was thought to be located on this reach of the stream actually occurs elsewhere in a proposed ACEC. The stream was determined not suitable.

Three Mile Creek: Eligible as a Scenic river. ORVs were determined for fisheries and prehistoric cultural resources. The stream was determined not suitable as a Scenic river due to the large amount of private land in the headwaters. The public lands containing this stream became part of the Steens Mountain Wilderness in 2000; therefore, requirements

imposed on wilderness and current management practices are considered adequate to protect the ORVs. No new information is available that would change the suitability of this stream.

Home Creek: Eligible as a Scenic River. ORVs were determined for fisheries, scenic values, and recreation. The stream was determined not suitable as a Scenic river due to private land ownership. The public lands containing this stream became part of the Steens Mountain Wilderness in 2000; therefore, requirements imposed on wilderness and current management practices are considered adequate to protect the ORVs. No new information is available that would change the suitability of this stream.

Pike Creek: Eligible as a Scenic River. ORVs were determined for wildlife habitat diversity. The stream was determined not suitable due to historic mining disturbance and the lack of legal access. As of 2000, a portion of the land surrounding this stream has been designated as part of the Steens Mountain Wilderness while the remainder of the land retains WSA status; therefore, adequate protective management practices already exist. No new information is available that would change the suitability of this stream.

Prior to 1997, no other rivers were determined eligible. In 2000, Congress designated some of the not eligible rivers, located in the CMPA, as Wild rivers including Kiger, Ankle, and Mud Creeks. Congress has the power to make these determinations without limitation. The BLM's review of the downstream portions of Kiger Creek, outside of the CMPA, determined that this stretch did not meet suitability for Wild or Scenic designation because private land ownership has increased in this downstream portion. In addition, a new easement has been established to recognize historic and necessary motorized trail access to this downstream portion. No new information is available that would change the suitability of this stream.

These eligible rivers listed above are generally available for recreational visitor use from April to November depending on the elevation and time of the year. Although visitor use data are limited for these eligible rivers, visitor use is primarily from hiking, backpacking, hunting, and fishing. These eligible rivers generally receive a lower level of dispersed visitor use than the CMPA WSRs.

3.25 Environmental Justice

The area under study for environmental justice includes the Planning Area, as well as other portions of Harney County.

Minority Population
Table 3.12.2 summarizes the ethnic composition of the Planning Area, Harney County, and the State of Oregon. Most notable is the higher percentage of American Indians in Harney County, particularly the northern portion of the County (Burns CCD and Drewsey CCD) compared to the State of Oregon. For Oregon, the American Indian population constitutes approximately 1.3 percent of the total. However, in Harney County the percentage is four percent. The percentage of American Indians in the Planning Area, as represented by the Diamond CCD, is 0.8 percent, which is substantially lower than the rest of Harney County and the State of Oregon.

In accordance with EPA's Environmental Justice Guidelines (EPA 1998), these minority populations should be identified when either:

- The minority population of the affected area exceeds 50 percent; or
- The minority population of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

The population of American Indians does not exceed 50 percent, and the population of American Indians occurring in the Planning Area, as represented by the Diamond CCD, is not "meaningfully greater" than the minority population in the general population, in this case, the State of Oregon. Therefore, for the purposes of screening for environmental justice concerns, the identified populations defined in EPA's guidance (EPA 1998) do not exist within the Planning Area.

Low-Income Populations
The median incomes for the population living in the Harney County area are lower than those in the State of Oregon (see Section 3.12.4). Analysis of the percentage of persons below the poverty level for the State of Oregon and Harney County reveals that they are about the same. These data indicate that a low-income population group, as defined in EPA's

guidance (EPA 1998), for the purposes of screening for environmental justice concerns, is not present in the Planning Area.

Based on the above assessment, there could not be disproportional impacts to minority or low-income populations. Although there are no identified populations within the Planning Area, as defined by EPA criteria, there is a potential for impacts to the American Indians should any of the actions impact areas of traditional use. The American Indian population and the Burns Paiute Tribe have not identified any traditional use areas to the BLM within the Planning Area. There is no known potential for anticipated disproportional effects on minority or economically disadvantaged populations within the Planning Area; therefore, Environmental Justice is not further analyzed in the RMP/EIS.

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4 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

This chapter analyzes the environmental effects that are projected to occur as a result of implementing land management actions described for each alternative. The baseline used for projected effects is the current condition described in Chapter 3 (Affected Environment). The analysis for each alternative is presented by resource and organized into five sections:

Goals and Objectives

The goals and objectives defined in Chapter 2 are restated for each resource for ease of reference purposes.

Assumptions

Specific assumptions pertinent to the management and analysis of effects for each resource are listed for that resource.

Analysis of Alternatives

This is a description of the possible effects from the proposed management actions. The effect or change is compared to the current management situation, Alternative A. For ease of reading, the analysis shown in the various alternatives may be referenced in following alternative effect discussions; for example, Alternative A may be referenced in following alternative analyses with such statements as, "...effects would be the same as Alternative A...," or "... effects would be the same as Alternative A, except for....," as applicable.

The Analysis of Alternatives includes a discussion of the Effects Common to All Alternatives, where applicable, prior to the separate alternative analyses. In addition, the effects discussions are split into Direct and Indirect Effects. The Direct Effects section discusses the results of implementing the management actions specified for a given resource on that resource. The Indirect Effects section discusses the effects that may result from the implementation of other resource management activities. For example, an indirect effect to vegetation may result from management actions proposed for fire management.

Summary of Effects

At the end of each resource section is a summary comparison of the effects of implementing the various alternatives and a discussion of how well each meets the stated objectives.

Cumulative Effects

The final section under each resource discussion is a description of the cumulative effects of the past, present and reasonably foreseeable future actions for each alternative. This section also considers effects of other agency actions as well as actions on private land within or adjacent to the Planning Area.

4.1.1 Assumptions

Several general assumptions were made to facilitate the analysis of potential effects. The assumptions listed below are common to all resources. Other assumptions specific to a particular resource are listed under that resource.

- Changes in BLM policies have been made since the current land use plans were approved. This includes the Steens Act, the S&Gs, and other acts and plans listed in Section 1.3 (Existing Management Plans).
- All alternatives would maintain the vegetation resource and meet needs for water, nutrient, and energy cycling.
- Funding and personnel would be sufficient to implement any alternative described and would be the same across all alternatives.
- Monitoring studies would be completed as indicated, and adjustments or revisions would be made as described in the various resource sections and in the Chapter 2 Adaptive Management and RMP Monitoring Sections.
- The approved RMP would remain in effect for 15 to 20 years.

4.1.2 Critical Elements of the Human Environment

The following are critical elements of the human environment addressed in Chapters 3 and 4, subject to requirements specified in statutes, regulations or Executive Orders: air quality; ACECs; cultural/paleontological resources; energy and minerals; invasive nonnative species (Noxious Weeds); Native American religious concerns (Native American Traditional Practices); threatened, endangered, candidate, and special status species (Special Status Species); water quality (Water Resources); wetlands/riparian zones; WSRs; and wilderness and WSAs. The alternatives call for varying degrees of resource use and protection. As a result, there are varying degrees or forms of protective management or mitigation for each of these resources or land use allocations. These critical elements would also be considered, as appropriate, in site specific project NEPA analysis, design, and implementation. Certain critical elements of the human environment were either not present within the Planning Area or else the discussion under the previous chapters has eliminated them from further consideration. These include environmental justice, prime or unique farmlands, floodplains, and hazardous or solid wastes.

4.2 Air Quality

4.2.1 Goal and Objectives

4.2.1.1 Goal - Maintain, restore, or protect air resources to support public health, visibility, and regional haze standards and goals.

Objective 1. Manage wildland fires to avoid degradation of the airshed.

Objective 2. Manage mining and aggregate operations to avoid degradation of the airshed.

4.2.2 Assumptions

Land managers and the public must make choices regarding prescribed fire and wildland fire use emissions versus emissions from wildland fires. Land managers have little control over where, when, and how much smoke would be generated during wildland fires. Through prescribed fire, smoke levels can be better managed. For example, air quality may be diminished in the short term so that during wildland fire events the probability of violating air quality standards in the long term would be decreased. Although some of the alternatives call for a substantial increase in emissions from prescribed fire and wildland fire use, the effects of these emissions would be mitigated to provide for public health and safety. In addition, land managers must contend with the transport of emissions from areas outside of their jurisdiction. These transported emissions affect the ability of land managers to effectively manage air quality issues through implementation of their management actions.

The following assumptions were used in the analysis of effects for air quality: 1) The NAAQS and Oregon Smoke Management Plan would not become more stringent; 2) The amount of PM and direction of smoke dispersion can be managed in prescribed fire, but not in wildland fire; 3) The amount of fugitive dust for roads would be proportional to the anticipated uses of the roads under the Proposed RMP and alternatives; and 4) The amount of fugitive dust for mining operations would be proportional to the availability of land for mineral development under the Proposed RMP and each alternative.

4.2.3 Analysis of Alternatives

4.2.3.1 Effects Common to All Alternatives

Direct Effects

During the months that wildland fire is most likely to occur (June through August) the prevailing wind direction is from the west or northwest. Therefore, the potential under all the alternatives for an effect on the air quality at the Strawberry Mountain Wilderness, which is northeast of the Planning Area, is minimal.

Indirect Effects

Energy and Minerals. There would be no effects on air quality by locatable, leasable, and salable energy and mineral exploration and development in the following areas closed by Congressional action or subject to the WSA IMP

nonimpairment criteria under the Proposed RMP and all alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, the Steens Mountain Wilderness, and WSAs. Together these areas cover 72 percent of the Planning Area. Under the Proposed RMP and all alternatives, open areas could have effects on air quality including dust and gaseous emissions from a variety of sources such as dust from construction, mining, and processing operations, and gaseous emissions from fuel combustion. Only land with high mineral resource potential is likely to be subject to mineral exploration. Further, it is likely that only a portion of any area with high mineral potential could be economically mined, and would therefore be proposed for development. In leasing activities, there would be no surface disturbance and no effects on air quality under NSO leasing stipulations, and reduced effects on air quality under seasonal or other special leasing stipulations. In surface disturbing exploration and development activities, air quality would be affected but could be protected by mitigation measures such as the following: watering dirt and gravel roads, and having crushing equipment inspected and permitted by the DEQ.

4.2.3.2 Alternative A

Direct Effects

The current activities result in a potential to emit between 350 and 700 tons of particulates per year over the life of the RMP from wildland fires. An additional amount of PM would be emitted from prescribed fires. Emissions from mining operations would occur in an amount that would be proportional to the number of operations. Emissions from authorized land uses would occur in an amount that would be proportional to the number of uses.

Indirect Effects

Woodlands and Rangelands. These areas would continue to be managed using mechanical vegetation removal as a method to achieve the identified goals and objectives. These activities would result in fugitive dust emissions from the vegetation removal, and combustion emissions from the equipment used to remove the vegetation, which would then affect air quality. These emissions would be directly proportional to the amount of vegetation removed.

Energy and Minerals. Twenty-eight percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development, with potential for effects on air quality on that much area. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources, and that would be open under this alternative. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Wildland Fire Management. Naturally- and human-ignited fire would be used to achieve the goals and objectives. As discussed above, these fires would continue to affect air quality. Smoke emission from wildland fires is a short-term event, mainly restricted to the active burning phase of the event. Woodland, shrubland, and grassland fuels have a relatively short residual burning period. The length of time that smoldering combustion continues is measured in hours, rather than days or weeks as in forested vegetation types.

Transportation and Roads. Transportation would be managed to allow continued current and existing uses on roads and ways in the Planning Area. Use of these roads by motorized vehicles would result in continued gaseous emissions from fuel combustion. These emissions would affect air quality.

4.2.3.3 Alternative B

Direct Effects

Emissions from mining operations would not occur under this alternative. Emissions from prescribed fires would be less than Alternative A, because they would be used to a limited degree. Emissions from wildland fires would likely be somewhat greater than under Alternative A. Emissions from authorized land uses necessary for basic maintenance and public health and safety would occur in an amount that would be proportional to the number of uses.

Indirect Effects

Riparian and Wetlands. Riparian and wetlands would be managed to eliminate roads in the vicinity of these resources. As a result, fugitive dust emissions in the vicinity of these resources would be reduced, thereby having an effect on air quality.

Woodlands. Woodlands would be managed using natural fires for vegetation removal as a method to achieve the identified goals and objectives. These activities would result in combustion emissions, which would then affect air quality. These emissions would be directly proportional to the amount of vegetation burned.

Wildlands Juniper Management Area. The WJMA would be managed using mechanical vegetation removal and fire as methods to achieve the identified goals and objectives. These activities would result in fugitive dust emissions from vegetation removal; combustion emissions from equipment used to remove the vegetation; and fires for disposal of removed vegetation, all of which would affect air quality. These emissions would be directly proportional to the amount of vegetation removed or burned.

Energy and Minerals. There would be no indirect effects on air quality because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Wildland Fire Management. Naturally- and human-ignited fire would be used to achieve the goals and objectives. As discussed above, these fires would continue to affect air quality. Smoke emission from wildland fires is a short-term event, mainly restricted to the active burning phase of the event. Woodland, shrubland, and grassland fuels have a relatively short residual burning period. The length of time that smoldering combustion continues is measured in hours, rather than days or weeks as in forested vegetation types.

Transportation and Roads. Transportation would be managed with road closures and to allow uses on most of the existing roads and ways in the Planning Area. Use of these roads by motorized vehicles would result in gaseous emissions from fuel combustion. These emissions would affect air quality.

4.2.3.4 Alternative C

Direct Effects

Emissions from prescribed and wildland fires would likely be greater than under Alternative A, because the management objectives would not be limited. Emissions from mining operations would not occur under this alternative. Emissions from authorized land uses would occur in an amount that would be proportional to the number of uses.

Indirect Effects

Woodlands and the Wildlands Juniper Management Area. These areas would be managed using mechanical vegetation removal and fire as methods to achieve the identified goals and objectives. These activities would result in fugitive dust emissions from vegetation removal; combustion emissions from the equipment used to remove the vegetation; and fires for disposal of removed vegetation, which would then affect air quality. These emissions would be directly proportional to the amount of vegetation removed and burned.

Rangelands. Rangeland would be managed using mechanical vegetation removal as a method to achieve the identified goals and objectives. These activities would result in fugitive dust emissions from vegetation removal and combustion emissions from the equipment used to remove the vegetation, which would then affect air quality. These emissions would be directly proportional to the amount of vegetation removed.

Energy and Minerals. Under this alternative, 13 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development, with potential for effects on air quality on that much area. Locatable minerals activity would be most likely on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals that would be open under this alternative. Leasable minerals activity would be most likely on the 43 acres in the Planning Area that have high potential for leasable minerals and that would be open; these acres would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 13 percent of the Planning Area that is open. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Wildland Fire Management. Naturally- and human-ignited fire would be used to achieve the goals and objectives. As discussed above, these fires would continue to affect air quality. Smoke emissions from wildland fires are a short-term event, mainly restricted to the active burning phase of the event. Woodland, shrubland, and grassland fuels have a relatively short residual burning period. The length of time that smoldering combustion continues is measured in hours, rather than days or weeks as in forested vegetation types.

Transportation and Roads. Transportation would be managed with road closures and to allow uses on most of the existing roads and ways in the Planning Area. Use of these roads by motorized vehicles would result in gaseous emissions from fuel combustion. These emissions would affect air quality.

4.2.3.5 Proposed RMP

Direct Effects

Emissions from prescribed and wildland fires would likely be somewhat greater than under Alternative A, because the management objectives would not be limited. Ideally, a limited amount would be burned, but this would enable landscape scale objectives to be achieved in years when opportunities would be available. Emissions from mining operations would occur in an amount proportional to the number of operations. Emissions from authorized land uses would occur in an amount that would be proportional to the number of uses.

Indirect Effects

Woodlands and the Wildlands Juniper Management Area. These areas would be managed using mechanical vegetation removal and fire as methods to achieve the identified goals and objectives. These activities would result in fugitive dust emissions from the vegetation removal; combustion emissions from the equipment used to remove the vegetation; and fires for disposal of removed vegetation, which would then affect air quality. These emissions would be directly proportional to the amount of vegetation removed and burned.

Rangelands. These areas would be managed using mechanical vegetation removal as a method to achieve the identified goals and objectives. These activities would result in fugitive dust emissions from the vegetation removal, and combustion emissions from the equipment used to remove the vegetation, which would then affect air quality. These emissions would be directly proportional to the amount of vegetation removed.

Energy and Minerals. Under this alternative, 27 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development, with potential for effects on air quality on that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative; 281of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open. under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Wildland Fire Management. Naturally- and human-ignited fire would be used to achieve the goals and objectives. As discussed above, these fires would continue to affect air quality. Smoke emission from wildland fires is a short-term event, mainly restricted to the active burning phase of the event. Woodland, shrubland, and grassland fuels have a relatively short residual burning period. The length of time that smoldering combustion continues is measured in hours, rather than days or weeks as in forested vegetation types.

Transportation and Roads. Transportation would be managed with road closures and to allow uses on most of the existing roads and ways in the Planning Area. Use of these roads by motorized vehicles would result in gaseous emissions from fuel combustion. These emissions would affect air quality.

4.2.3.6 Alternative E

Direct Effects

Emissions from prescribed and wildland fires would likely be somewhat greater than under Alternative A, because the management objectives would be limited. Emissions from mining operations would occur in an amount that would be

proportional to the number of operations. Emissions from authorized land uses would occur in an amount that would be proportional to the number of uses.

Indirect Effects

Woodlands and the Wildlands Juniper Management Area. These areas would be managed using mechanical vegetation removal and fire as methods to achieve the identified goals and objectives. These activities would result in fugitive dust emissions from vegetation removal; combustion emissions from the equipment used to remove the vegetation; and fires for disposal of the removed vegetation, which would then affect air quality. These emissions would be directly proportional to the amount of vegetation removed and burned.

Rangelands. Rangeland would be managed using mechanical vegetation removal as a method to achieve the identified goals and objectives. These activities would result in fugitive dust emissions from vegetation removal, and combustion emissions from the equipment used to remove the vegetation, which would then affect air quality. These emissions would be directly proportional to the amount of vegetation removed.

Energy and Minerals. Minerals management would be conducted the same as under Alternative A; therefore, the indirect effects on air quality would be the same as Alternative A.

Wildland Fire Management. Naturally- and human-ignited fire would be used to achieve the goals and objectives. As discussed above, these fires would continue to affect air quality. Smoke emission from wildland fires is a short-term event, mainly restricted to the active burning phase of the event. Woodland, shrubland, and grassland fuels have a relatively short residual burning period. The length of time that smoldering combustion continues is measured in hours, rather than days or weeks as in forested vegetation types.

Transportation and Roads. Transportation would be managed with road closures and to allow uses on most of the existing roads and ways in the Planning Areas. Use of these roads by motorized vehicles would result in gaseous emissions from fuel combustion. These emissions would affect air quality.

4.2.4 Summary of Effects

The Proposed RMP and alternatives have the potential to emit varying amounts of PM into the atmosphere over the life of the RMP. The air quality goal should be met because of the ability to manage emissions in prescribed fire. Since wildland fire would be a random event, the alternatives encompassing large amounts of particulate emissions have the potential to exceed the stated management goal for air quality. Due to the relative isolation of the area and the predominate wind patterns for smoke dispersion, the probability would be low that the airshed would be degraded. The Proposed RMP and Alternatives C and E would all likely have greater effects than Alternative A. Alternative B would likely have the least potential effects. Alternative C would likely have the greatest potential effects.

4.2.5 Cumulative Effects

Smoke from prescribed or wildland fires burning simultaneously on adjacent BLM Districts (Lakeview District, Prineville District, Vale District, and Winnemucca Field Office) and on private and state lands would affect the air quality of southeastern Oregon. Prevailing winds in the area are south and southwesterly. As a result, multiple fires could degrade the air quality in the Planning Area. It would not be likely that several prescribed fires would occur at the same time, since burn plans would be coordinated with other BLM, USFS, and ODF offices. However, large wildland fires or escaped prescribed fires could occur in a number of areas at one time, resulting in air quality degradation for a short period of time. The potential for effects on air quality by mineral exploration and development would be greatest under Alternatives A and E; there would be de minimus effect under Alternative B, and the Proposed RMP and Alternative C would be intermediate in their effects with Alternative C having fewer effects.

4.3 Water Resources

4.3.1 Goal and Objectives

4.3.1.1 Goal - Maintain, restore, or improve water quality and quantity to sustain the designated beneficial uses on public lands.

Objective 1. Comply with state and federal requirements to protect public waters.

Objective 2. Protect all designated beneficial uses by preventing or limiting nonpoint source pollution; maintain or improve existing water quality and quantity though implementation of BMPs.

Objective 3. Manage impaired waters on public lands listed under Section 303(d) of the CWA to restore beneficial uses and improve water quality so listing would no longer be warranted.

4.3.2 Assumptions

Water quality and quantity would be dependent on the condition of resources throughout the watershed, including soils, upland vegetation, and especially riparian vegetation. Therefore, management actions that affect the condition of these resources may influence water quality and quantity. Water quantity would be primarily influenced by watershed functions (e.g., capture, storage and beneficial release of precipitation). This would be achieved through vegetation management, particularly in riparian areas where floodplains have the capacity to store water. Nonpoint source pollution, such as elevated water temperature and sediment input, is the primary water quality issue regarding public lands management. Water quality would be managed to comply with CWA requirements under all management alternative themes. Several management actions in the sections describing environmental effects on water resources, particularly under riparian vegetation, are specifically intended to maintain or restore water quality.

BMPs are recognized as the best way to maintain and restore water quality and quantity. BMPs range from specific practices designed to protect water quality at individual sites (such as installation of silt fences during road crossing maintenance) to management actions designed to reduce potential water quality effects due to recreation, grazing, or other activities. BMPs such as water developments (e.g., reservoirs and spring developments) can function for multiple beneficial uses. These types of actions directly provide additional and alternative water sources for wildlife and livestock, and indirectly decrease use of, and effects to, riparian vegetation. Reservoirs further function to detain runoff and increase infiltration, as well as to trap potential sediment associated with overland flow. The effectiveness of BMPs relies on using appropriate measures, adequate implementation, and monitoring of both implementation and effectiveness. Where management prescriptions call for BMPs to protect or restore water quality, it is assumed that BMPs would be selected and implemented appropriately; monitoring of BMP implementation and effectiveness would be conducted; and monitoring data would be used in an adaptive management framework to provide that BMPs are reasonably effective. Implementation and effectiveness of BMPs should incorporate the physical progression of stream channel adjustment and ecological progression of growth and expansion of vegetation in monitoring and evaluation.

WQRPs and associated BMPs would be developed and implemented to support Water Quality Management Plans (WQMP) and TMDLs developed by the DEQ for water quality limited streams, lakes, or other bodies of water identified pursuant to the CWA, section 303(d) in the Planning Area. The WQRPs are the mechanism for defining project specific BMPs and outlining implementation and effectiveness monitoring for waters identified as not meeting state water quality standards.

Portions of many water bodies throughout the Planning Area are not managed by the BLM. In these situations, BLM management actions alone may not be sufficient to restore water quality. To restore water quality in mixed ownership watersheds, BLM WQRPs would be incorporated into larger scale WQMPs developed by the DEQ in coordination with the ODA and other land owners or managers.

4.3.3 Analysis of Alternatives

4.3.3.1 Effects Common to All Alternatives

Direct Effects

BMPs would be prescribed and implemented at the activity plan level to reasonably prevent degradation of water quality. Management actions that could affect water quality and quantity include site specific or broad scale projects that occur near water bodies associated with rangeland, grazing, recreation, transportation, minerals, and wildland fire management. The specific BMPs used in each instance would be selected during development of activity plans. For example, silt fences or other soil containment structures may be used to control sediment movement into water during construction or maintenance projects. In the case of allotment or recreation management plans, BMPs would include management actions designed to maintain or restore water quality and quantity. Grazing management might include modification of season or place of use or development of off-channel water to restore actively eroding banks, thereby limiting sediment

introduced to the stream. The application of BMPs in this fashion should reduce direct alteration of stream channels and the amount of sediment entering the water. These BMPs should also increase stream shading through maintenance or restoration of riparian vegetation, and improve the function of floodplain processes, such as floodwater retention and ground water storage. In some locations, disturbance to riparian vegetation or to stream channels may occur at localized scales to promote the large scale maintenance or improvement of riparian vegetation, bank stability, and water quality through implementation of BMPs such as livestock or wild horse water gaps or designated camping areas. BMPs would also be directed toward management practices to facilitate maintenance or improvement of attributes identified through PFC assessment, such as channel geometry or vegetation characteristics. BMPs designed to reduce channel width-to-depth ratios by increasing riparian vegetation and stabilizing streambanks would tend to increase shade and reduce stream temperature. Increases in the density and distribution of riparian vegetation would stabilize streambanks, shorelines, and floodplains, thereby reducing erosion and the amount of sediment reaching water bodies.

Waters identified on the 303(d) list would be evaluated to validate impairment or improvement following the listing. For those water bodies where required, WQRPs or other sufficiently stringent measures would be developed to restore water quality. These management actions would remove impaired waters from the 303(d) list, and would improve water quality and restore beneficial uses in these watersheds.

Indirect Effects

Riparian and Wetlands. Prescriptions at the activity plan level would be implemented or continued to manage riparian/wetland vegetation to maintain or progress toward PFC. While vegetation communities in PFC would not be necessarily at site potential or ecological potential, PFC represents a condition where potential erosion and sediment production would be reduced, and establishes a base condition to implement actions relative to specific values such as water quality and quantity. In streams not currently at PFC, management directed to maintain or progress toward PFC would increase the density and distribution of riparian vegetation, which would stabilize streambanks and floodplains, thereby reducing erosion and sediment delivery to water bodies. Increased density of riparian vegetation may also result in greater canopy cover and may narrow stream channels, buffering stream temperature. In streams currently at PFC, this management action would provide for maintenance of PFC and associated water quality conditions.

BMPs would be prescribed and implemented at the activity plan level to maintain, restore, or improve floodplain function and process across all alternatives. Functioning floodplains filter in-channel or upland generated sediment during runoff events and store ground water during wet periods, and releasing it to adjacent streams during drier months. BMPs designed to maintain or restore floodplain function would decrease stream sediment input and potentially increase summer stream flow. Flow contributions from adjacent riparian and floodplain areas would contribute to buffering stream temperature.

Establishment and maintenance of local riparian vegetation in a nursery type facility would contribute to riparian restoration efforts to maintain or restore water quality through increased shading and bank stability.

Noxious Weeds. Noxious weed prevention and control would continue to be a priority in all alternatives. Noxious weeds invade native plant communities, including riparian vegetation, resulting in degraded plant community structure, cover, composition, and diversity. Erosion and runoff both tend to increase as a result. Reduced cover may also result in reduced shade and increased water temperature. The priority on noxious weed prevention and control would reduce these effects on water resources.

Effects to water quality and associated beneficial uses through the potential introduction of chemicals into water is assumed to be minimized or avoided through appropriate application techniques according to label restrictions and BLM guidance.

Fish and Wildlife. As noted in Chapter 2, aquatic habitat values are the products of the attributes and processes of properly functioning riparian and aquatic systems at a desired ecological status. Therefore, the maintenance, restoration, or improvement of riparian and aquatic habitat to support fish and wildlife would be addressed primarily in the alternatives identified under Water Resources, Vegetation, and Special Status Species. The broad objective under Fish and Wildlife to maintain, restore, or improve habitat, generally promotes water quality maintenance, improvement or restoration.

Visual Resources. Depending on the VRM class of a proposed water development or watershed project location, a project may require mitigation, redesign, or relocation. This could constrain any water development or watershed project. Each project would be analyzed on a case-by-case basis.

Energy and Minerals. There would be no effect on water resources by locatable, leasable, and salable energy and mineral exploration and development in these areas that are closed by Congressional action or subject to WSA IMP nonimpairment criteria under all the alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, the Steens Mountain Wilderness, and WSAs, which together cover 72 percent of the Planning Area.

Under all alternatives, areas open to mineral activities could have effects on water resources including increased erosion due to road development and vegetation disturbance, water pollution from toxic or deleterious substances, and disruption of ground water hydrology through mine or well development.

It is likely that only land with high mineral resource potential would be subject to mineral exploration. Further, it is likely that only a portion of that area with high mineral potential could be economically mined or would be proposed for development. In leasing activities, there would be no surface disturbance and no effect on water resources under NSO leasing stipulations and reduced impact on water resources under seasonal or other special leasing stipulations.

In surface disturbing exploration and development activities, water resources could be protected by mitigation measures, such as sampling the rock in the area for acid rock drainage potential if the presence of sulfides is suspected, constructing a groundwater model based on monitoring wells and surface topography, and constructing stormwater collection basins to control stormwater runoff. For locatable minerals, mitigation measures would be identified through site specific NEPA review for a mining plan of operations and by ID Team review for a mineral exploration notice that would partially or fully mitigate these effects. For leasable and salable minerals, mitigation measures would be identified through site specific NEPA review prior to surface disturbance.

Grazing Management. (Except Alternative B which would eliminate grazing on public lands in the Planning Area) In areas where grazing is determined to be contributing to nonattainment of water resource objectives, changes in management would be implemented. These changes in management would be designed to reasonably prevent nonpoint source pollution and contribute to maintenance or restoration of water quality, such as increases in riparian and upland vegetation density and structure, reduced erosion, increased streambank stability, and increased stream shade. However, the effects of livestock grazing such as soil compaction, soil disturbance, streambank destabilization, and reduced riparian vegetation, along with corresponding potential sediment input and reduced stream shading, may continue in some areas pending project-specific objective development and management implementation through allotment evaluation and management planning. The effects may also continue after implementation due to a lag in recovery processes such as channel adjustment and riparian vegetation establishment.

Within the No Livestock Grazing Area, riparian and wetland vegetation may improve at a faster rate than areas where grazing is authorized. This would result in increased bank stability and shade, thereby reducing erosion and increasing thermal buffering of water temperature.

Areas burned by wildland or prescribed fire would be rested for a minimum of two growing seasons, and until monitoring data support resumption of grazing. This would allow vegetation to increase in density, and would reduce erosion and sediment delivery to water bodies.

Wildland Fire Management. Fire suppression actions may result in initial effects to water quality in the form of increased sediment delivery associated with constructed fire breaks, water dipping or pumping, and overland travel. However, suppression actions may not increase sediment delivery over the effects of the fire itself, such as reduced vegetation cover and increased erosion potential. The limitation of fire extent through suppression activities likely reduces the total potential sediment produced during a single fire event. All burned areas would be evaluated for rehabilitation. Rehabilitation activities may result in initial increases in erosion and soil compaction, thereby increasing sediment and runoff delivered to stream channels, although these activities may not increase sediment delivery over the effects of the fire itself. Over longer timeframes, revegetation would progress more quickly in rehabilitated areas, reducing the amount of sediment produced. Also, the potential effects of rehabilitation activities could be reduced through application of BMPs.

A FMP would be developed to identify areas that possess significant natural resource values. Fire management strategies based on protecting natural resource values would assist in protecting water quality.

Transportation and Roads. Current BLM mapping does not include all routes within the CMPA or AMU. Unmapped routes would be inventoried, and an EA would be conducted to determine their disposition. Water quality effects would be addressed through site specific analysis in the EA.

BMPs would be used for the construction, maintenance, and general management of the transportation system (Appendix F). Properly implemented and monitored, these BMPs reduce erosion, alteration of surface water flow paths, disturbance to riparian vegetation, and alteration of stream channels. Use of BMPs would reduce potential sediment and runoff delivered to water bodies, thus preventing or reducing effects to water quality.

Off-Highway Vehicles. Depending on the proposed OHV designation, water resources could either be improved or affected by elimination, reduction or continued use. OHV and mechanized vehicle use within or adjacent to water sources could affect water quality through increased erosion. However, this would likely be site specific. Closed or Limited to Designated designations would either eliminate or restrict OHV and mechanized vehicle use in those areas. Limited to Designated designations would identify those routes that are available for use and for which there are no resource concerns. Limited to Existing designations could affect water resources through allowing OHV and mechanized vehicle use to continue on all existing routes, including those with the potential to affect other resources. The only area considered for Open designation in three Alternatives is the Alvord Desert playa. There are no public land water resources that could be affected.

Wilderness. The designation of Wilderness may place some constraints on watershed rehabilitation and vegetative manipulation of noxious weeds and exotic and invasive plants to protect wilderness values. Any such actions would be analyzed on a case-by-case basis. Any reestablishment of vegetation as part of a watershed restoration program must be accomplished using native or naturalized species. The maintenance or reconstruction of any reservoir, ditch, catchment or related facility (other than range and wildlife water developments) must be approved by the BLM State Director. New facilities are not approved unless such action is needed to protect the wilderness resource.

Wilderness Study Areas. Under the WSA IMP, constraints may be placed on watershed rehabilitation and vegetative manipulation of noxious weeds and exotic plants (e.g., cheatgrass) to protect wilderness values. These constraints could include the following: 1) allowing only aerial or hand seeding of native species to restore natural vegetation, and 2) prohibiting land treatments (e.g. trenching, ripping, terracing, plowing). Although use of nonnative vegetation and seedbed preparation is not expressly prohibited, it is generally implied. If interpretation of the WSA IMP precludes the use of nonnative vegetation in site preparation for the establishment of native vegetation, or effective mechanical seedbed preparation and seeding techniques to restore riparian and adjacent upland vegetation communities (Riparian and Wetlands: 2.5.2.1.2; the Proposed RMP and Alternatives C and E), the Water Resources goal and objectives may not be achieved in the affected areas. Additionally, any proposed water development in a WSA would be subject to analysis under the WSA IMP. Each project would be analyzed on a case-by-case basis.

4.3.3.2 Alternative A

Direct Effects

Water resources would continue to be maintained or restored through management of riparian and adjacent uplands, based on site or reach management objectives. Management would be modified, where necessary, through WQRP prescriptions and associated activity plans. These actions would be designed to increase bank stability and thermal buffering by increasing riparian vegetation density and distribution. Water quality improvements would be expected as WQRPs are developed and implemented, and riparian vegetation is restored and erosion reduced. Nonattainment of water temperature standards in current and potential future 303(d) listed waters, as well as potential future listings associated with other water quality constituents, may continue due to lag between the implementation of restoration actions and recovery of riparian vegetation and stream channels.

Indirect Effects

Soils and Biological Soil Crusts. BMPs would be implemented to protect and manage soil for all ground disturbing activities. This would reduce surface erosion and sediment introduction to stream water bodies. Also, compaction of soils would be reduced, maintaining infiltration capacity of existing soils, preventing erosion due to increased overland runoff, and maintaining the ability of soils to store water that can be released to streams at low flow periods.

Riparian and Wetlands. Existing grazing, recreation and transportation systems, and improvements to maintain PFC would continue. Outside of areas affected by WQRPs or other special planning requirements (e.g., WSRs), riparian/wetland areas would not necessarily be managed to maintain or progress toward an advanced ecological status, although in many areas management to maintain or promote PFC may also promote an advanced ecological status. Sources of localized tree and shrub source material for restoration would continue to be established and maintained. These sources would assist in restoring riparian vegetation and subsequently decrease potential sediment and solar input to water bodies.

Roads located outside the CMPA and the associated TP within or affecting riparian areas, would be maintained and developed in conformance with existing laws and regulations. Although BMPs would be applied to minimize or eliminate the effects of roads on water quality, the development and management of roads would be based on all resource management objectives. The potential effects of roads on water resources, including erosion and reduction of riparian vegetation density and coverage, would be addressed on a case-by-case basis.

Beaver populations would be allowed to expand naturally under this alternative. Beaver expansion into riparian and wetland areas without sustainable levels of riparian vegetation could result in reduced bank stability and shade, and subsequent increased sediment input and water temperature. Abandoned beaver dams could wash out, reducing channel stability and increasing sediment load. Beaver expansion into riparian communities with sustainable levels of riparian vegetation could result in riparian vegetation expansion and increased in-channel and streambank water storage that would moderate summer stream temperatures and trap sediment.

Woodlands. Mechanical removal and prescribed fire treatments to reduce the presence and influence of western juniper on upland and riparian plant communities could result in short-term effects to water quality in the form of increased sediment delivery to stream channels associated with surface runoff. However, because the invasion of juniper has resulted in the loss of ground cover and increased erosion, juniper treatment would not be likely to increase sediment production over existing conditions. The potential for effects increases with proximity to water and increased steepness in the topography. Application of BMPs based on site specific analysis would minimize or mitigate potential short-term sediment input. Reduced western juniper canopy cover at a watershed scale would be expected to reduce interception and sublimation of precipitation, increase vegetative ground cover, reduce sediment input, and subsequently increase water infiltration and other watershed functions in upland areas. Treatment of western juniper along streams could temporarily reduce stream shade and result in a short-term increase in water temperature. However, reducing competition from juniper in riparian/wetland areas would facilitate passive and active restoration efforts to maintain or improve the density of riparian vegetation, contributing to decreased sediment input and increased thermal buffering along streams. The anticipated long-term effects of juniper treatment at a landscape level would be increased infiltration, reduced runoff, reduced erosion, moderation of peak stream discharge, and increased summer stream flows.

Rangelands. The ecological status of native plant communities would be maintained or improved. Plant density and coverage in these communities would be maintained or increased, resulting in decreased erosion and potential sediment delivery to water bodies.

Prescribed fire would be used to promote ecologically desirable traits in the range plant community. Over short timeframes (one to two years), prescribed fire may result in increased erosion potential due to loss of vegetative cover, and may result in increased runoff. However, these effects may be mitigated by applying appropriate BMPs during prescribed burns, and restoring burned areas. Long-term effects of this practice on water resources could include increased watershed function. The vegetation goals of prescribed fires, which include reduced dominance of woody vegetation and release of desirable plants, would result in increased ground cover and increased infiltration of precipitation. This would reduce sedimentation into water bodies and potentially increase stream flow during the summer.

The mechanical removal of woody vegetation to create a mosaic of successional stages in rangeland vegetation could result in some soil disturbance and compaction over short timeframes, potentially resulting in localized increased erosion and runoff. These effects could be mitigated by applying appropriate BMPs. Long-term effects of this practice would be reduced dominance of woody vegetation, and the release of desirable plants, resulting in increased ground cover and increased infiltration of runoff. This would reduce sedimentation in water bodies and potentially increase stream flow during the summer.

Special Status Species. Goals and objectives for the management of riparian dependent and aquatic special status species promote the objectives for water quality. The management of special status species habitat for conservation or recovery would have water resource effects in water bodies where redband trout or other special status animals are found, as

habitat conservation or improvement would include vegetation management to buffer stream temperatures and reduce erosion.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-eight percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on water resources in open areas. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Lands and Realty. Renewable energy authorization would be managed under current planning framework, with no exclusion or avoidance areas except where current law or regulations require. Water quality effects from renewable energy development would likely be limited due to the nature and location of this development. However, erosion from road development or vegetation disturbance could occur.

Wild Horses and Burros. Current AMLs and wild horse forage allocation levels would be maintained in all HMAs. Decreases in forage availability from events such as extensive wildland fire or drought, and reduced water availability due to drought could increase wild horse concentration and use in riparian areas associated with perennial or more persistent water sources. Increased concentration could result in bank disturbance through trampling, and reduced riparian vegetation cover and corresponding increased sediment input and reduced stream shading. However, this should be mitigated through emergency horse gathers.

Wildland Fire Management. Management actions to reduce fuels or restore historic fire regime would increase watershed function and reduce the occurrence of wildland fire in riparian/wetland areas. This would facilitate maintenance and persistence of riparian/wetland vegetation, and subsequent maintenance or improvement of water quality and quantity. Mechanical treatments or prescribed fire could result in initial effects such as soil compaction and increased erosion. These effects could be reduced through application of BMPs. Over the long term, reduction of fuel loading would reduce the risk of catastrophic fire, and therefore reduce potential disturbance of vegetation communities, erosion, and sediment delivery to water bodies.

Recreation. Recreational use could result in localized disturbance to riparian and wetland vegetation and soil compaction, thereby causing erosion and sediment production and reducing shade. Intensive management of some areas could provide greater protection for water resources through more immediate identification and resolution of conflicts between recreation and other resources.

4.3.3.3 Alternative B

Direct Effects

As in Alternative A, BMPs would be prescribed and implemented to facilitate maintenance or improvement of attributes identified through assessments, with the same effects. An assessment component would be added to identify and protect stream reaches or sites that provide cold-water habitat in streams where temperature limits the abundance of aquatic species. These cold-water refuges, created by spring seeps, geologic structure or faulting, or the characteristics of sedimentary deposits, would be important in providing water quality to meet beneficial cold-water uses in the Planning Area. Active identification, assessment, and management of these areas would help maintain or improve water resources in these areas, providing more site specific protection for beneficial uses (i.e. trout spawning or rearing habitat).

Management of perennial and intermittent streams to progress toward an advanced ecological status of riparian vegetation would emphasize management for riparian resource values, such as riparian density, structure, and cover that would maintain or improve water quality and quantity relative to capabilities and timeframes of natural processes.

Under this alternative, the WQRPs would generally be guided by stream/watershed prioritization (Table 2.3.1). As with Alternative A, water resources would improve over time, based on the prioritization schedule; short-term degradation of water resources may occur in some areas prior to the implementation of WQRPs, and relative to recovery processes. However, to restore impaired waters, the prioritization schedule should provide for efforts that would be directed toward

areas most likely to respond to management, and toward areas most important for special status species, WSRs, and wilderness.

Under this alternative, active restoration (i.e. planting riparian vegetation) directed toward water quality would be limited to areas not likely to progress toward an advanced ecological status within the next 20 to 50 years.

Indirect Effects

Soils and Biological Soil Crusts. Natural processes would be allowed to dictate soil conditions except where management would be necessary to arrest excessive soil movement on critical sites.

Riparian and Wetlands. Activity plan management prescriptions or WQRP prescriptions promoting maintenance or improvement of riparian conditions would be developed similar to Alternative A, but would be guided by stream/watershed prioritization along with consideration of new circumstances and emerging opportunities. Under this alternative, riparian management prescriptions would be generally prioritized over the entire project area, potentially providing greater improvements in water quality for beneficial uses than under Alternative A.

Similar to Alternative A, establishing sources of localized tree and shrub source material for restoration would assist in restoring riparian vegetation. However, restoration actions (i.e., planting riparian vegetation) would be limited to areas that would not be likely to achieve an advanced ecological status in a 20 to 50 year timeframe.

Roads within or providing access to riparian areas would be inventoried and routes that affect riparian areas would be eliminated, relocated, or reconstructed. Natural recovery of roads would be allowed in areas where erosion potential would be low and recovery potential would be high. Active restoration of roads would be pursued in other areas. Road crossings would be evaluated and modified, as necessary, to simulate natural stream function and processes. All of these actions related to roads would decrease disturbances to riparian vegetation, expand riparian vegetation, increase vegetation cover, reduce erosion, increase shade, reduce sediment in streams, and buffer stream temperature.

Beaver populations would be managed as in Alternative A, with the same effects.

Woodlands. Under this alternative, no mechanical removal of juniper would occur to restore old growth, quaking aspen, riparian, or sagebrush plant communities, thereby reducing the short-term effects of disturbance from this practice as described under Alternative A. Where fire would be successful in reducing competition of juniper, riparian vegetation would likely increase in density and structure, thereby reducing erosion and increasing shade. Reliance on fire without mechanical manipulation may preclude or reduce the effectiveness of reducing competition of juniper in riparian/wetland areas. Reduced ground cover and suppression of upland and riparian/wetland vegetation could increase sediment input to streams from overland flow and stream bank erosion.

Wildland fires that occur in quaking aspen and mountain mahogany stands would be allowed. Short-term effects may include increased erosion. Maintenance or restoration of the native vegetation and fire regimes would likely reduce erosion and improve other watershed function, such as infiltration and ground water storage.

Rangelands. The ecological status of native plant communities would be defined by natural processes. In most locations, this would likely result in maintenance or increase in ecological status, with effects similar to Alternative A. In some highly disturbed locations, vegetation communities may not progress toward higher ecological status, resulting in decreased cover, reduced infiltration, and increased sediment and runoff to water bodies.

Wildland fire would be used to promote ecologically desirable traits in the rangeland plant community. Short-term effects would be similar to Alternative A. Long-term effects of this practice would also be similar to Alternative A, though improved watershed function may occur more quickly as both natural and prescribed fire would be used to promote desirable vegetation characteristics.

Noxious Weeds. Treatment for noxious weeds under this alternative would be only for high priority areas. In treated areas, effects on water quality would be similar to those in Alternative A. In areas that would not be treated, vegetation community function would be reduced and would likely lead to increased erosion and runoff.

Special Status Species. Management prescriptions for special status species would have water quality effects similar to those in Alternative A, except that conservation or recovery would emphasize allowing natural processes to occur in all cases except where designated critical habitat of federally listed species occur. In some cases where habitat of special

status species has been degraded and would not be likely to recover in the timeframe of this RMP, sediment or temperature improvements may not occur as quickly under this alternative.

Redband Trout Reserve. The Page Springs gauging weir would be assessed for removal or modification under this alternative. If removal or modification were undertaken, short-term effects could include increased erosion and sedimentation. Incorporation of BMPs and resource protection into modification or removal designs could minimize or mitigate these effects.

Energy and Minerals. There would be no indirect effects on water resources because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Lands and Realty. The entire Planning Area would be considered a renewable energy authorization exclusion area. No water resource effects would result from renewable energy development.

Wild Horses and Burros. Current AMLs and wild horse forage allocation levels would be maintained in all HMAs. However, permanent increases or decreases in AMLs and forage allocations would be considered if forage availability changed greatly. Adjustments in AMLs and forage allocations could reduce the risk of increased utilization by wild horses and burros, thereby improving vegetation cover and structure, and reducing erosion. Decreases in forage availability from events such as extensive wildland fire or drought, and reduced water availability due to drought could increase wild horse concentration and use in riparian areas associated with perennial or more persistent water sources. Increased concentration could result in bank disturbance through trampling, and reduced riparian vegetation cover and corresponding increased sediment input and reduced stream shading. However, this should be mitigated through emergency horse gathers.

Current water sources would be maintained, with similar water resource effects. However, additional water sources would also be developed to improve animal distribution. If properly located and maintained, these water sources would reduce wild horse and burro concentration and use in riparian areas, thereby reducing soil compaction and increasing riparian vegetation coverage and density. This in turn reduces erosion and increases shade, thereby reducing sedimentation and temperature.

Grazing Management. Under this alternative, grazing would be eliminated in the Planning Area. In some areas, riparian vegetation may progress more quickly to PFC and toward an advanced ecological status than in Alternative A. This may result in increased cover and canopy, thereby reducing erosion and temperature.

Wildland Fire Management. Wildland fires that threaten property, human life, or significant resource values would be suppressed, and a plan to manage wildland fires for resource benefit would be developed. Where fires are suppressed, short-term effects may include reduced sedimentation due to reduced erosion, and maintenance of vegetation communities. Mechanical treatment of fuels would occur where there is a threat to human life or private property. These actions may be similar to mechanical treatments in Alternative A, but on a smaller scale. Over the long term, management of wildland fire for resource benefit would likely reduce water quality effects associated with the occurrence of larger, hotter fires with respect to Alternative A.

As in Alternative A, mechanical treatments or prescribed fire would be used to reduce fuel loading, with the same effects.

Recreation. Minimal recreation management could reduce recreation opportunities and use through much of the Planning Area. Reduced use could result in less localized disturbance to riparian and wetland vegetation, thereby increasing aquatic habitat cover and shade. Minimal recreational management may provide less protection for water resources, as conflicts between recreation and resources may be less likely to be identified and resolved.

4.3.3.4 Alternative C

Direct Effects

As in Alternative B, BMPs would be prescribed and implemented, and an assessment component would be added to identify and protect stream reaches or sites that provide cold-water refuge in streams where temperature limits the distribution of aquatic species, with the same effects.

As in Alternative B, perennial and intermittent waters would be managed to maintain or progress toward an advanced ecological status.

As in Alternative B, WQRPs would be generally guided by stream/watershed prioritization (Table 2.3.1), with the same effects.

Under this alternative, active restoration may be pursued to initiate or increase the rate of progress toward an advanced ecological status. In disturbed or degraded areas, where natural rates of recovery may be slow, this action would increase vegetative cover and improve riparian community structure, thereby reducing sediment input and increasing thermal buffering.

Indirect Effects

Soils and Biological Soil Crusts. As in Alternative A, BMPs would be implemented to protect and manage soil for all ground disturbing activities, with the same effects.

Riparian and Wetlands. As in Alternative B, activity plan management prescriptions or WQRP prescriptions promoting improved riparian conditions would be developed and would be generally guided by stream/watershed prioritization, with the same effects.

This alternative would direct management of existing grazing systems and improvements to maintain PFC and would promote an advanced ecological status. This could result in increased density and structure in the riparian community, thereby reducing erosion and water temperature. In addition to Alternative B, both active and passive management and restoration of vegetation may be pursued. Some vegetation communities currently in degraded condition would increase density, distribution, and structure more quickly under this alternative than under Alternatives A or B, reducing erosion and stream temperature.

Upland vegetation communities adjacent to riparian areas would be managed to reduce fire frequency and intensity as in Alternative B, with the same effects.

The establishment of sources of localized tree and shrub source material for restoration would be the same as for Alternative A, with the same effects.

Roads within or providing access to riparian areas would be managed the same as in Alternative B, with the same effects.

Beaver populations would be allowed to expand naturally as in Alternatives A and B, with the same effects. In addition, beaver would be reintroduced into suitable habitat. Since reintroduction areas would have suitable habitat for beaver, increases in vegetative utilization would be sustainable. The effects of reintroduction would therefore tend to include expansion of riparian vegetation, increased streambank stability, increased shade, and reduced erosion.

Woodlands. Mechanical removal of western juniper from quaking aspen and mountain mahogany stands would have the same effects as in Alternative A. Under this alternative, burning of quaking aspen stands would also have the same effects as in Alternative A. As in Alternative B, fire would be allowed in quaking aspen and mahogany stands to reduce the dominance of juniper, with the same effects.

Mechanical removal of juniper in riparian and sagebrush habitats would have the same effects as in Alternative A. Fire would be allowed to reduce western juniper influence in riparian habitats as in Alternative B, with the same effects.

Rangelands. The ecological status of native plant communities would be defined by minimizing emphasis on commodity production, and instead emphasizing natural values such as diversity and structure. Native plant communities would likely become more widespread, with variable effects.

Only natural fire would be used to promote ecologically desirable traits in the range plant community. Short-term effects would be similar to Alternative A. Long-term effects of this practice would be the same as in Alternative A.

The mechanical removal of woody vegetation to create a mosaic of successional stages in range vegetation would be similar to Alternative A, though only on selected sites. Effects would be similar to those described for Alternative A.

Noxious Weeds. As in Alternative B, treatment for noxious weeds under this alternative would be only for high priority areas, with the same effects.

Special Status Species. Management prescriptions for special status species would have water quality effects the same as those in Alternative A.

Redband Trout Reserve. As in Alternative B, the Page Springs gauging weir would be evaluated for removal or modification under this alternative, with the same effects.

Energy and Minerals. See Effects Common to All Alternatives. Under this alternative, 13 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development with potential for effect on water resources in open areas. Locatable minerals activity would be most likely on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 43 acres in the Planning Area that have high potential for leasable minerals and that would be open; these acres would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 13 percent of the Planning Area that is open. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Lands and Realty. Renewable energy authorizations would be excluded from ACECs, WSAs, WSRs, the Steens Mountain Wilderness, and the CMPA. In these areas, effects of renewable energy authorizations on water resources would be eliminated. In the rest of the Planning Area, effects would be similar to Alternative A.

Wild Horses and Burros. As in Alternative B, permanent increases or decreases in AMLs and forage allocations would be considered if forage availability changed greatly, with the same effects. Water sources for wild horses and burros would be managed as in Alternative B, with the same effects.

Grazing Management. Nonconsumptive uses would be emphasized in both the AMU and the CMPA. Water resource values may receive a higher emphasis under this management, providing more protection for riparian soils and vegetation, thus reducing potential sediment and temperature inputs to water bodies associated with grazing management.

Wildland Fire Management. As in Alternative B, wildland fires that threaten human life, private property, or significant resource values would be suppressed, and a plan to manage wildland fires would be developed, with the same effects.

As in Alternative A, mechanical treatments or prescribed fire would be used to reduce fuel loading, with the same effects.

Recreation. Recreational use could result in increased localized disturbance to riparian and wetland vegetation and soil compaction, thereby increasing erosion and sediment production and reducing shade. Intensive management of some areas could provide greater protection for water resources through more immediate identification and resolution of conflicts between recreation and other resources, while conflicts between recreation and resources may be less likely to be identified and resolved in other, less intensively managed areas.

4.3.3.5 Proposed RMP

Direct Effects

As in Alternatives A, B and C, BMPs would be prescribed and implemented, and an assessment component would be added to identify and protect stream reaches or sites that provide cold-water refuge in streams where temperature limits the abundance of aquatic species, with the same effects.

WQRPs would be generally guided by stream/watershed prioritization (Table 2.3.1). However, priorities for development of WQRPs would also be based on cooperative management opportunities. Management of CWA 303(d) listed waters and contributing streams toward an appropriate ecological status to attain water quality standards or other surrogate measures through passive or active management, including restoration of riparian and adjacent upland vegetation, would have similar effects as Alternative C.

Indirect Effects

Soils and Biological Soil Crusts. As in Alternative A, BMPs would be implemented to protect and manage soil for all ground disturbing activities, with the same effects.

Riparian and Wetlands. As in Alternatives B and C, activity plan management prescriptions or WQRP prescriptions promoting improved riparian conditions would be developed and would be generally guided by stream/watershed prioritization, with the same effects.

This alternative would direct management of existing grazing systems and improvements to maintain PFC and would promote an ecological status dependent on meeting multiple resource objectives through active and passive management and restoration. Effects would be similar to Alternatives A, B, and C. However, depending on activity or WQRP objectives, a range of riparian vegetation ecological status may be promoted to achieve water resource objectives.

Upland vegetation communities adjacent to riparian areas would be managed to reduce fire frequency and intensity, with the same effects as Alternative C.

Roads within or providing access to riparian areas would be managed similar to Alternatives B and C, with the same effects.

Beaver populations would be managed similar to Alternative C. However, this alternative would allow for the removal of beaver if suitable habitat would not be available or if economic harm or ecological damage would be occurring. In areas where natural expansion of beaver into unsuitable riparian habitat (i.e., incapable of sustaining increased utilization) occurs, removal of beaver could result in increased riparian vegetation density, increased shade, and reduced erosion. In areas where natural expansion of beaver into suitable riparian habitat (i.e., capable of sustaining increased utilization) occurs, but beaver would be removed to reduce economic harm, improvements to riparian vegetation and water resources associated with beaver would not occur.

Woodlands. Mechanical removal of western juniper from quaking aspen and mountain mahogany stands would be the same as in Alternative A, with the same effects. Under this alternative, burning of quaking aspen stands would be the same as in Alternative A, with the same effects. As in Alternative B, fire would be allowed in quaking aspen and mahogany stands to reduce the dominance of juniper, with the same effects.

Mechanical removal of juniper in riparian and sagebrush habitats would be the same as in Alternative A, with the same effects. Fire would be allowed to reduce western juniper influence in riparian habitats as in Alternative B, with the same effects.

Rangelands. The ecological status of native plant communities would be maintained or improved as in Alternative A, with the same effects.

Both prescribed and natural fire would be used to promote ecologically desirable traits in the rangeland plant community. Short-term effects would be similar to Alternative A, though greater in magnitude. Long-term effects of this practice would also be similar to Alternative A, though effects would be more widespread across the Planning Area.

The mechanical removal of woody vegetation to create a mosaic of successional stages in range vegetation would be the same as in Alternative A, with the same effects.

Noxious Weeds. Management of noxious weeds would be similar to Alternative A, except that emphasis on control would be given to high quality natural resource areas. Water resource effects would be similar to Alternative A.

Special Status Species. Management prescriptions for special status species would have water quality effects similar to those in Alternative A.

Redband Trout Reserve. As in Alternatives B and C, the Page Springs gauging weir would be assessed for removal or modification, with the same effects.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-seven percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on water resources in open areas. Locatable minerals activity would be most likely on the 1.5 percent of the

Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative; 281of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Lands and Realty. Renewable energy authorizations would be excluded from ACECs, WSAs, WSRs, the Steens Mountain Wilderness, and the CMPA. In these areas, effects of renewable energy authorizations on water resources would be eliminated. In the rest of the Planning Area, effects would be similar to Alternative A.

Wild Horses and Burros. As in Alternative B, permanent increases or decreases in AMLs and forage allocations would be considered if forage availability changed greatly, with the same effects.

Water sources for wild horses and burros would be managed similar to Alternative B, with the same effects.

Grazing Management. Sustainable livestock grazing that meets allotment management objectives would be emphasized in both the CMPA and the AMU with the same effects described under Effects Common to All Alternatives.

Wildland Fire Management. As in Alternative B, wildland fires that threaten human life, private property, or significant resource values would be suppressed; a plan to manage wildland fires would be developed, with the same effects as in Alternative B.

As in Alternative A, mechanical treatments or prescribed fire would be used to reduce fuel loading, with the same effects.

Recreation. The effects would be the same as in Alternative C.

4.3.3.6 Alternative E

Direct Effects

As in Alternative A, BMPs would be prescribed and implemented to facilitate maintenance or improvement of attributes identified in PFC assessment. Effects would be the same as Alternative A.

Similar to Alternative A, riparian areas and adjacent uplands of 303(d) listed water bodies would be managed according to site or reach management objectives. However, development and implementation of WQRPs would be generally guided by stream/watershed prioritization as in the Proposed RMP and Alternatives B and C.

Indirect Effects

Soils and Biological Soil Crusts. As in Alternative A, BMPs would be implemented to protect and manage soil for all ground disturbing activities, with the same effects.

Riparian and Wetlands. As in the Proposed RMP and Alternatives Band C, activity plan management prescriptions or WQRP prescriptions to promote maintenance or improvement of riparian conditions would be developed and would be guided by stream/watershed prioritization, with the same effects.

Grazing and recreation management would be implemented to provide maximum use while maintaining or progressing toward PFC or WQRP objectives. Effects would be similar to Alternative A.

As in Alternative B, upland vegetation communities adjacent to riparian areas would be managed to reduce fire frequency and intensity, with similar effects.

Roads within or providing access to riparian areas would be managed similar to Alternative A, with the same effects.

As in Alternative A, beaver populations would be allowed to expand naturally as habitat conditions indicate unless suitable habitat would not be available, or economic harm or ecological damage would be occurring (as in the Proposed RMP), with the same effects.

Energy and Minerals. Minerals management would be conducted the same as under Alternative A; therefore, the indirect effects on water resources would be the same as Alternative A.

Woodlands. Mechanical removal of western juniper from quaking aspen and mountain mahogany stands would be similar to Alternative A. Under this alternative, burning of quaking aspen stands would be similar to Alternative A. Similar to Alternative B, fire would be allowed in quaking aspen and mountain mahogany stands to reduce the dominance of juniper.

Mechanical removal of juniper in riparian and sagebrush habitats would be similar to Alternative A. Fire would be allowed to reduce western juniper influence in riparian habitats similar to Alternative B.

Rangelands. The maintenance of native plant communities would not necessarily be emphasized under this alternative. While nonnative vegetation may be incorporated into some native plant communities and existing seedings further improved with nonnative vegetation, ground cover and soil stability would continue to be maintained or improved. This would reduce potential sediment runoff into water and promote infiltration of precipitation.

As in the Proposed RMP, both prescribed and natural fire would be used to promote ecologically desirable traits in the range plant community, with the same effects.

Noxious Weeds. As in the Proposed RMP, management of noxious weeds would be similar to Alternative A, except that emphasis on control would be given to high quality natural resource areas. Water resource effects would be similar to Alternative A.

Special Status Species. Management prescriptions for special status species would have water quality effects similar to those in Alternative A.

Redband Trout Reserve. As in the Proposed RMP and Alternatives B and C, the Page Springs gauging weir would be assessed for removal or modification under this alternative, with similar effects.

Lands and Realty. As in the Proposed RMP, renewable energy authorizations would be excluded from ACECs, WSAs, WSRs, the Steens Mountain Wilderness, and the CMPA, with the same effects.

Wild Horses and Burros. As in the Proposed RMP and Alternatives B and C, permanent increases or decreases in AMLs and forage allocations would be considered if forage availability changed greatly, with the same effects.

The addition of the Dry Creek and Big Springs pastures in the Fish Creek-Big Indian Allotment; the Carlson Creek Allotment; Serrano Point Allotment; and Bone Creek and Miners Field pastures of the Alvord Peak Allotment would return wild horses to areas where they have not been since the 1970s. This could affect water resources in these areas by adding year long use of the water and riparian resources. Some of these areas have streams that would not be in PFC at present; the addition of wild horses and year long use may not allow these areas to reach PFC. This translates into potential loss of structure and diversity of riparian plant species, and reduced buffering of water temperature. Year long use could also affect streambank stability that could affect the amount of sediment in the water and reduce water quality. Reduced opportunities for restoration or further degradation of water quality could prevent meeting obligations under the CWA. Water sources for wild horses and burros would be managed similar to Alternative B and C, with similar effects.

Grazing Management. Grazing opportunities would be maximized in both the CMPA and the AMU. Therefore, additional infrastructure such as water developments and fences could be required to meet specific objectives and requirements identified through the WQRP and TMDL process.

Wildland Fire Management. As in Alternative A, all wildland fires would be suppressed, with the same effects. A plan to manage wildland fires for resource and economic benefits would be developed, with the same effects as the Proposed RMP. As in Alternative A, mechanical treatments or prescribed fire would be used to reduce fuel loading, with similar effects.

Recreation. The effects would be the same as in Alternative C.

4.3.4 Summary of Effects

Under all alternatives, the application of BMPs would be the primary mechanism to reduce erosion and disturbance to vegetation, and subsequently maintain, restore, or improve water quality and quantity on public lands. WQRPs or other sufficiently stringent measures would be developed and implemented to restore all impaired water bodies in accordance with established TMDL(s). Riparian areas associated with perennial or intermittent surface water would be managed to attain or maintain PFC. Riparian areas in PFC may not necessarily be sufficient to maintain or restore water quality, depending on the most sensitive beneficial use. However, PFC would establish the initial condition from which to manage activity plan objectives and beneficial use requirements.

The Proposed RMP and Alternatives B and C, provide a proactive mechanism to identify stream reaches or sites that provide cold-water habitat for aquatic species recognized as the most sensitive beneficial use; this process would assist the state in delineation and protection of ecologically important cold-water refuges. This approach may facilitate recognition of specific habitat areas for species such as trout to seek refuge from summer stream temperatures in systems that would be recovering or would not be capable of achieving state water quality temperature standards.

The Proposed RMP and Alternatives B, C, and E recognize prioritization of streams or watersheds for developing and implementing WQRPs to address waters listed as impaired pursuant to the CWA, section 303(d). This would facilitate recognizing or implementing management in areas most likely to respond to management efforts; management toward areas associated with special status species, WSR or wilderness; and coordination with other resource management efforts. In addition, the Proposed RMP, further prioritizes these streams and watersheds based on cooperative management opportunities such as private land management actions.

The Proposed RMP and Alternatives B and C, provide recognition and opportunities for passive and active restoration of riparian and upland communities to progress toward ecological conditions to meet water quality objectives. However, Alternative B emphasizes passive management that may delay or preclude restoration of ecological conditions necessary to meet water quality objectives, such as riparian or upland vegetation communities.

4.3.5 Cumulative Effects

Past management practices such as historic livestock grazing, coupled with natural events of drought, flood, and wildland fire, have and may continue to affect water quantity and quality across the Planning Area. Landform patterns further define potential susceptibility or resilience to disturbances that affect water quantity and quality, such as stream channel morphology and riparian vegetation condition. For example, high to moderate gradient stream channels found in confined canyons have evolved under conditions of hydraulic disturbance and provide natural resilience to erosion. These areas often have less exposure to public land uses such as livestock grazing and recreation. Less confined valleys would be generally comprised of alluvial sediments with stream channels that would be more reliant on riparian vegetation for stability and more susceptible to disturbance. These areas have generally been more accessible and susceptible to potential disturbance from livestock grazing, wild horses, and recreational uses. Hydraulic disturbance from moderate to high stream flow events following natural or human-induced disturbances to vegetation (e.g., wildland or human-caused fire or livestock grazing) altered some of these channels through excessive vertical or lateral channel erosion that may have resulted in lowering the local ground water table. Entrenched channels and a lowered water table reduce recruitment and recovery of riparian vegetation until channel adjustment occurs, such as channel widening and reestablishment of floodplain area to reduce erosive forces. Riparian vegetation succession would be interrelated with floodplain development, and likely proceeds in a nonlinear fashion. Therefore, the rate of recovery would be a matter of speculation.

The majority of perennial and intermittent stream reaches in the Planning Area subjected to past channel degradation has progressed along the channel adjustment phase as indicated by PFC assessments. Stream channels that are properly functioning, or functioning at risk contain the primary attributes to progress toward achieving water quantity and quality objectives. Present and future management of water resources on public lands in the Planning Area incorporates BMPs to reasonably prevent degradation of water quality. WQRPs and activity plan level objectives at a site, reach, or watershed scale would be developed and implemented to maintain, improve, or restore water quantity and quality relative to beneficial uses and TMDL requirements. Incorporation of the adaptive management approach and coordination with the DEQ would facilitate necessary adjustments in management to maintain or restore water quality. Additionally, this

should contribute to maintenance or improvement of water quality on downstream lands under other management jurisdiction, such as private property and the Malheur NWR.

4.4 Soils and Biological Soil Crusts

4.4.1 Goals and Objectives

4.4.1.1 Goal - Manage soils on public land to maintain, restore, or improve soil erosion classes, watershed health, and areas of fragile soils.

Objective. Manage mineral soil to limit accelerated erosion on critical sites, protect soil characteristics on noncritical sites, and maintain or improve existing infiltration and permeability rates.

4.4.1.2 Goal - Increase the understanding of the management of northern Great Basin biological soil crusts.

Objective. Collect biological soil crust data within the Planning Area.

4.4.2 Assumptions

Soil productivity varies widely and reflects site specific natural conditions and past management practices. Management actions affect soil productivity. Since natural processes would be slow to restore soil productivity in this semi-arid region, prevention of soil and biological soil crust degradation would be the most time and cost-effective remedy. Soil erosion rates would be highly dependent on the proportion of the soil surface that would be protected from raindrop impact by vegetation cover. Soil and biological soil crust resources would be dependent on the condition of other resources, primarily upland and riparian vegetation. Management actions that affect the condition of these resources would also affect soils and biological soil crusts. Erosion rates increase exponentially as plant cover decreases.

BMPs would be acknowledged as the best way to maintain and restore soils where management activities affect soil resources. BMPs would be designed for specific actions at individual sites and in overall management actions designed to reduce soil resource effects due to other uses and activities such as grazing and recreation. Additional BMPs specific to biological soil crusts may be identified and developed in an interdisciplinary process when evaluating site specific actions. The effectiveness of BMPs would be dependent upon the use of adequate measures, appropriate implementation, and performance in protecting soil and biological soil crust resources. These assumptions include: 1) BMPs are selected and implemented appropriately; 2) monitoring of BMP implementation and effectiveness would be conducted; and 3) monitoring data would be used in an adaptive management framework to promote effective BMPs for protecting soil resources. BMPs are found in Appendix F.

Several management actions in the sections describing environmental effects on these resources, particularly rangeland/vegetation, would be specifically designed to maintain or restore soil resources. These management actions would be analyzed under indirect effects in the following discussion.

Portions of the Planning Area would not be public lands, and BLM management actions alone may not sufficiently protect those soil and biological soil crust resources. In mixed ownership watersheds, the BLM would work in cooperation with surrounding land owners to develop activity plans that would protect soils, biological soil crusts, and other resource values.

As part of a continuing effort concerning biological soil crusts, the Burns District has provided for the development and implementation of the Pueblo-Lone Mountain monitoring studies and other potential studies in the Planning Area. This biological soil crust monitoring is an important and major part of this effort. The proposed monitoring methodology would be appropriate for other allotments within the Planning Area. Future crust monitoring would be one of the tools for the study and adaptive management of biological soil crusts, including the development of biological soil crust specific BMPs.

4.4.3 Analysis of Alternatives

4.4.3.1 Effects Common to All Alternatives

Direct Effects

BMPs would be prescribed and implemented at the activity plan level to prevent degradation of soil resources. Activity plans that could affect soils and biological soil crusts include site specific projects such as TPs and recreation management plans. During the development of the activity plan, specific BMPs designed to protect soil and biological soil crust resources would be selected. The application of BMPs would be an effective means of reducing erosion, protecting water quality, increasing desirable vegetation cover, and preventing noxious weeds or undesirable plant introductions.

Due to the fragility of biological soil crust communities, damage to biological soil crusts could occur through any management activities that disturb soils where biological soil crust communities have developed. Damage to biological soil crusts could result in erosion and noxious weed or other invasive plant introductions. The effects would be the same under all of the alternatives.

Biological soil crust monitoring data would be obtained and utilized to inform decisions and encourage cooperative management practices. The act of establishing and reading the monitoring plots would create some disturbance on the soil surface, which could damage existing biological soil crusts in a relatively small area.

Indirect Effects

Retaining current road use and closing other roads could affect the stability of soils over all the alternatives if there would be an unusual weather event with flooding. Soil movement would be accelerated on sites with exposed soils.

Energy and Minerals. There would be no effect on soil and biological soil crust resources by locatable, leasable, and salable energy and mineral exploration and development in these areas that are closed by Congressional action or subject to the WSA IMP nonimpairment criteria under all the alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, Steens Mountain Wilderness, and WSAs, which together cover 72 percent of the Planning Area. Under all alternatives, open areas could have effects on soil and biological soil crust resources including erosion, compaction, and changes in vegetation communities. It is likely that only land with high mineral resource potential would be subject to mineral exploration. Further, it is likely that only a portion of that area with high mineral potential could be economically mined or proposed for development. In leasing activities, there would be no surface disturbance and no effect on soils under NSO leasing stipulations and reduced effects on soils under seasonal or other special leasing stipulations. In surface disturbing exploration and development activities, biological soil crusts would be destroyed but soils could be protected by mitigation measures such as soil scraping and stockpiling; seeding the soil stockpiles; scarifying compacted ground and respreading the soil stockpiles as soon as an area is exhausted or no longer in use; seeding the disturbed area after respreading stockpiles; watering haul roads and taking other dust abatement measures; and constructing stormwater collection basins and taking other measures to control stormwater runoff.

Wild Horses and Burros. Current AMLs and wild horse forage allocation levels would be maintained in all HMAs. Increases and decreases in AML and forage allocations would be considered under all the alternatives except Alternative A. Therefore, Alternative A has the greatest potential for effects on soil and biological soil crust resources, including erosion, compaction, and changes in vegetation communities by wild horse and burro use.

Wildland Fire Management. Recovery of biological soil crusts on burned sites is greatest where fire rehabilitation involving seeding of perennial plants occurs. Seeding perennial grasses and resting from livestock grazing reduces exotic annual grasses and benefits native mosses (Hilty et al., 2004).

4.4.3.2 Alternative A

Direct Effects

Current management practices would continue, and would continue to reduce soil erosion. BMPs would be implemented on all potential surface disturbing activities affecting soils.

Indirect Effects

Woodlands. Mechanical removal of younger western juniper trees would be implemented to maintain late seral stage western juniper woodlands. Although this management activity may increase erosion through surface effects, these effects would be expected to be localized and minimal. Western juniper and associated woody species would be removed by mechanical methods or prescribed fire in quaking aspen and mountain mahogany stands. Over the short term, vegetation removal and manipulation treatments could result in soil compaction and increased erosion in both upland and riparian/wetland habitats. Over the long term, these practices could restore historic soil and vegetation characteristics, and watershed function.

Rangelands. Rangeland community plant cover and density would be maintained or increased, meeting the S&Gs, and resulting in decreased compaction and erosion. Desirable nonnative seedings would be managed to maintain vegetation composition and to meet S&Gs.

Prescribed fire and mechanical vegetation removal would be implemented to promote ecologically desirable traits such as a mosaic of successional stages in rangeland vegetation. These activities would result in initial soil and biological soil crust disturbance, including compaction and erosion. The application of BMPs and restoration or rehabilitation of these areas could reduce these short-term effects.

Long-term effects of these vegetation manipulation practices would reduce dominant woody vegetation and would release desirable plant species, resulting in reduced erosion and increased ground cover. Biological soil crusts may be affected by any actions that disturb soils where biological soil crust communities have developed.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-eight percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on soils and biological soil crusts on that much area. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized Officer, on a case-by-case basis, salable mineral development may not be permitted.

Grazing Management. Livestock grazing use would continue to be authorized in the existing allotments in the AMU and the CMPA. Livestock grazing could increase soil compaction and damage biological soil crusts, particularly along trails and at waterholes. Current management practices, including proper stocking rates for livestock, rotation of grazing, and periodic rest from grazing, have reduced soil effects and erosion.

Wildland Fire Management. Burned areas would be evaluated for the necessity of seeding and rehabilitation to protect soils. Evaluations would lead to the rehabilitation of burned areas to provide vegetation cover and reduce soil erosion, particularly in those areas where natural recovery would be limited. All wildland fires would be suppressed using appropriate management actions, which may provide beneficial short-term effects due to reduced erosion and maintenance of vegetation communities. The long-term effects may increase erosion and vegetation disturbance due to the potential for larger, hotter fires.

Fire suppression activities could disturb soils and cause erosion in the short term. A combination of mechanized and nonmechanized equipment would be utilized to rehabilitate areas altered by fire suppression activities to protect soil and other resources. A mixture of native and desirable nonnative plant species would be used to rehabilitate burned areas where natural recovery would be limited.

Prescribed fire and mechanical treatments would be used to reduce fuel loading, resulting in short-term effects such as soil compaction, increased erosion, and damage to biological soil crusts. These effects could be reduced through the application of BMPs. The reduction of fuels would reduce the risk for catastrophic fire and also reduce the potential disturbance, erosion, and sediment delivery of soils, while reducing the effects on vegetation community structure.

Any activities that disturb soils where soil crust communities have developed could deplete soil productivity and increase the potential for noxious weed establishment or accelerated erosion.

Off-Highway Vehicles. Approximately 675,914 acres would be designated as open to OHV and mechanized vehicle use in the AMU, potentially resulting in surface disturbance, soil compaction, erosion, and damage to biological soil crusts

in those areas. OHV and mechanized vehicle use on the Alvord Desert playa would result in visible tracks on the soil surface, but those tracks fade or disappear after seasonal high water events. Illegal OHV and mechanized vehicle use on the dunes adjacent to the Alvord Desert playa would result in visible tracks on the dune surface, but unless vegetation is damaged, wind events would generally erase the tracks rapidly. Less than ten percent of the dune area would be potentially affected by illegal vehicle activity.

Recreation. Expansion of existing developed and undeveloped recreation sites would be considered, potentially increasing surface disturbance and soil erosion and damaging biological soil crusts, particularly in concentrated use areas.

4.4.3.3 Alternative B

Direct Effects

There are no direct effects.

Indirect Effects

Woodlands. Under this alternative, no mechanical removal of younger western juniper trees would be implemented, reducing the short-term effects of disturbance. The historic fire regime could be restored by allowing fires to burn in old growth juniper stands. Short-term effects on soils may include an increase in erosion. Long-term effects on soil and biological soil crust resources would probably reduce erosion and loss of biological soil crust cover, since the size and intensity of fires would likely be reduced as the historic fire regime becomes reestablished.

Western juniper and associated woody species would not be removed by mechanical methods or prescribed fire in quaking aspen and mountain mahogany stands, reducing the short- and long-term effects on soils and biological soil crusts.

Grazing Management. With the removal of livestock grazing from the Planning Area, areas with depleted soils in high livestock concentration areas should start to recover, limited only by the opportunity for noxious weed establishment. Deposition of plant litter and incorporation of organic material into the soil would increase across the landscape, resulting in increased productivity, decreased erosion, and progression toward the DRC. The rate of water, nutrient, and energy cycling and soil movement would be restored on sites dominated by native species, thereby affecting soils. Effects to soils and biological soil crusts would be reduced through the elimination of grazing where natural processes are being jeopardized. Biological soil crusts could recover in areas previously damaged by livestock, resulting in increased vegetation cover, improved infiltration rates, and less erosion.

Short-term indirect effects on soil resources would occur as existing rangeland projects would be abandoned and removed. In the long term, areas disturbed during project removal would revegetate naturally in areas of heavy use.

Energy and Minerals. There would be no indirect effects on soil and biological soil crust resources because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Wildland Fire Management. A combination of mechanized and nonmechanized equipment would be utilized to rehabilitate areas altered by fire suppression activities, thereby increasing the disturbance on soils and biological soil crusts in the short term and decreasing the erosion rate and loss of biological soil crust cover in the long term.

Transportation and Roads. Road areas designated as closed would be maximized, reducing the effects on soils throughout the Planning Area. Road closures would help to reduce soil compaction and potential erosion. All other areas would be designated as limited to designated roads and ways with a minimum number of roads and ways identified. Only designated roads would remain open and would be maintained on an as needed basis. Limited maintenance of existing roads could increase effects on soils as a result of normal erosion of roadbeds, wet weather rutting by vehicles, and channeling of runoff. No new roads would be developed, thereby eliminating additional sources of soil erosion.

Off-Highway Vehicles. OHV and mechanized vehicle use would be limited to designated roads. Closure of many portions of the Planning Area would greatly reduce soil compaction, erosion potential, and effects to biological soil crusts, particularly on a watershed basis. Snowmobiles would not be allowed to operate in the CMPA, thereby reducing the potential effects from fuel spills and soil compaction.

Recreation. Closing areas to camping would reduce the effects to soils and biological soil crusts. Restricting camping in the CMPA to developed campgrounds would eliminate the effects to soils and biological soil crusts from dispersed camping. Effects to soils and biological soil crusts would be reduced through the closing or rehabilitation of dispersed sites where natural processes are being jeopardized. Limiting visitor use and group sizes would help maximize natural processes and minimize effects to soils and biological soil crusts.

4.4.3.4 Alternative C

Direct Effects

There are no direct effects.

Indirect Effects

Woodlands. Wildland fire would be used to remove younger western juniper trees to maintain late seral stage western juniper woodlands. Although this management activity may increase erosion through surface effects, these effects would be expected to be localized and minimal. Western juniper and associated woody species would be removed by mechanical methods, prescribed fire, and wildland fire in quaking aspen and mountain mahogany stands. Treated areas would be fenced where recovery may be limited by browsing of livestock and wildlife.

Over the short term, vegetation removal and manipulation treatments could result in soil compaction and increased erosion in both upland and riparian/wetland habitats. Over the long term, these practices could restore historic soil and vegetation characteristics, and watershed function.

Rangelands. Native rangeland plant communities would be maintained or improved with emphasis toward attaining improved ecological status and minimizing commodity production. Rangeland plant communities would be more widespread and variable, resulting in decreased compaction and erosion. Reestablishment of native plants in areas currently in poor condition from nonnative plantings would improve plant cover and reduce erosion.

Desirable nonnative seeding would be managed to diversify composition and structure of selected nonnative seedings, with emphasis on natural values and other resource objectives.

Only wildland fire would be used to promote the DRC in the range plant communities. Short- and long-term effects would be similar to Alternative A.

Prescribed fire and mechanical vegetation removal would be implemented to promote ecologically desirable traits such as a mosaic of successional stages in rangeland vegetation, similar to Alternative A, though only on selected sites. These activities would result in the same effects as described for Alternative A, only lesser in magnitude.

Any activities that disturb soils where biological soil crust communities have developed could deplete soil productivity and increase the potential for noxious weeds and other invasive species to degrade the site.

Energy and Minerals. See Effects Common to All Alternatives. Under this alternative, 13 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development with potential for effect on soils and biological soil crusts on that much area. Locatable minerals activity would be most likely on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 43 acres in the Planning Area that has high potential for leasable minerals and that would be open under this alternative; these acres would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 13 percent of the Planning Area that is open. As determined by the BLM authorized officer, on a case-by-case basis, salable mineral development may not be permitted.

Grazing Management. Livestock use would continue and the effects would be similar to Alternative A. Emphasis for this alternative would be to meet soils, biological soil crusts, and other resource management objectives by implementing (or removing) rangeland projects or livestock management practices to promote resource values. This action could decrease the number of acres where soils and biological soil crusts would be affected by livestock grazing, and increase vegetation cover on upland and in riparian/wetland plant communities in those areas.

Wildland Fire Management. All fires that threaten human life, private property, or areas that possess significant resource value would be suppressed. Fires that do not threaten human life, private property, or important areas would be evaluated and managed using minimal suppression actions.

A mixture of native plant species to rehabilitate soils in burned areas would be utilized where natural recovery would be limited, thereby reducing the potential soil erosion. A combination of mechanized and nonmechanized equipment would be utilized to rehabilitate soils in areas altered by fire suppression activities.

Short-term effects on soils and biological soil crusts may include erosion and compaction. These effects would be expected to be minimal and could be mitigated with the implementation of BMPs. Long-term effects on soils would increase vegetation cover and decrease erosion.

Any activities that disturb soils where biological soil crust communities have developed could deplete soil productivity and increase potential for noxious weeds and other invasive species to degrade the site.

Transportation and Roads. Road maintenance and seasonal road closures would be implemented to protect and promote soils and natural resource values and to reduce road damage. Specifically, 30 miles of roads would be permanently closed. Additional roads would be closed during winter, which would reduce soil compaction and erosion potential, particularly on a watershed basis. Existing roads and transportation routes would have the same effects on soil resources as Alternative A.

Off-Highway Vehicles. OHV and mechanized vehicles would be managed to minimize use in accordance with limited and closed OHV designations. Most of the Planning Area would be designated as limited to designated roads and ways. This could protect soils and biological soil crusts and prevent soil erosion in many areas throughout the Planning Area. Snowmobiles would not be allowed on the North Steens Loop Road, reducing potential fuel contamination of soils.

Recreation. New campgrounds would not be developed, reducing the potential disturbance of soils and biological soil crusts from construction activities and recreation use. Limiting camping to developed campgrounds and designated sites in the CMPA would reduce the area potentially disturbed. Effects to soils and biological soil crusts would be reduced through the closing or rehabilitation of dispersed sites where resource values are being affected beyond acceptable levels. Visitor use, including group size and trail development, would be managed with emphasis on protecting resource values, including soils and biological soil crusts.

4.4.3.5 Proposed RMP

Direct Effects

Balancing the increase in projects to improve soil condition through rehabilitation/restoration with the increase in recreation and commodity uses would be greatest under this alternative. Any activities that remove the vegetation cover would increase the erosion rate, requiring BMPs and soil protection.

Indirect Effects

Woodlands. With the same effects on soils and biological soil crusts as described in Alternative A, 90 percent of western juniper would be removed from old growth stands. Fires in old growth western juniper would have the same effects as Alternative C.

Mechanical removal of juniper in aspen, mountain mahogany, riparian, and sagebrush plant communities would have the same effects as Alternative A. Fire would be allowed in quaking aspen and mountain mahogany stands and riparian habitats with the same effects as described in Alternative B.

Rangelands. The ecological status of native plant communities would be maintained or improved as in Alternative A, with the same effects on soil and biological soil crust resources.

Desirable nonnative seedings would be managed to diversify composition and structure of selected seedings, consistent with other resource objectives.

Both prescribed and wildland fires would be allowed to promote ecologically desirable traits in rangeland plant communities. Short- and long-term effects would be similar to Alternative A, though greater in magnitude and more widespread across the Planning Area.

Any activities that disturb soils where biological soil crust communities have developed could deplete soil productivity and increase the potential for noxious weeds and other invasive species to degrade the site.

The mechanical removal of woody vegetation to create a mosaic of successional stages would have the same effects on soils and biological soil crusts as Alternative A.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-seven percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on soils and biological soil crusts on that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative; 281 of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer, on a case-by-case basis, salable mineral development may not be permitted.

Grazing Management. Grazing would continue in the Planning Area consistent with the Steens Act and S&Gs. Soil compaction would continue, particularly in high concentration areas such as along trails and at waterholes. Grazing management practices, including proper stocking rates for livestock, rotation of grazing, and periodic rest from grazing, should reduce effects to soils and biological soil crust.

Wildland Fire Management. As in Alternative B, all fires that threaten human life, private property, or significant resource values would be suppressed. A mixture of desired nonnative and native plant species would be used to rehabilitate burned areas to protect soils from erosion. A combination of mechanized and nonmechanized equipment would be utilized to rehabilitate areas where soils and other resources have been altered by fire suppression activities, which could affect soils and biological soil crusts in the short term with ground disturbance, and affect soils and biological soil crusts in the long term with site rehabilitation resulting in increases in plant cover and reduced erosion.

Opening the Planning Area to harvesting fuel byproducts would increase short-term effects on soils and biological soil crusts by surface disturbance, compaction, and erosion. These effects would be expected to be localized and minimal. In the long term, fuel load reductions and reduced potential for catastrophic fire would have an effect on soils and biological soil crusts.

Any activities that disturb soils where biological soil crust communities have developed could deplete soil productivity and increase the potential for noxious weeds and other invasive species to degrade the site.

Transportation and Roads. Seasonally closing the Moon Hill Road would eliminate vehicle activity during the winter and early spring when surface soils are more vulnerable to soil erosion. The potential for soil erosion, both in and along the Moon Hill Road would be reduced and the need for road maintenance activities would be minimized.

Off-Highway Vehicles. Soils and biological soil crusts could be affected by fuel spills, vegetation damage or removal, and compaction from OHV and mechanized vehicle use. OHV and mechanized vehicle use would be managed through cooperative agreements with clubs in accordance with OHV designations. Organized events would be allowed, potentially increasing the effect on soils and biological soil crusts. OHV and mechanized vehicle use on designated roads and ways in approximately 1,451,085 acres of the Planning Area could affect soil resources in areas where use may cause compaction, surface disturbance, and erosion. OHV and mechanized vehicle use on the Alvord Desert playa (25,285 acres designated as open) would result in visible tracks on the soil surface, but those tracks should fade or disappear after seasonal high water events. Illegal OHV and mechanized vehicle use on the dunes adjacent to the Alvord Desert playa would result in visible tracks on the dune surface, but unless vegetation is damaged, wind events would generally erase the tracks rapidly. Less than ten percent of the dune area would be potentially affected by illegal vehicle activity. This activity should be further reduced through cooperative agreements with OHV and mechanized vehicle clubs.

Recreation. Increased visitor use and recreation demands would increase the level of effects to soils and biological soil crusts. Soil compaction and erosion would occur in high recreation use areas, especially developed campgrounds and

dispersed sites. Increased dispersed recreation would increase the area and degree of soil compaction and erosion. In areas where recreation use increases, soil and biological soil crusts could become degraded, nonproductive and eroded, and susceptible to noxious weed introductions. Management and rehabilitation efforts would be necessary.

Wilderness. The designation of the No Livestock Grazing Area within the Steens Mountain Wilderness may have beneficial effects for the recovery of biological soil crusts and soil compaction. Soil compaction and erosion would occur in high recreation use areas, especially at dispersed campsites. Increased dispersed recreation would increase the area and degree of soil compaction and erosion. In areas where recreation use increases, soil and biological soil crusts could become degraded, nonproductive and eroded, and susceptible to noxious weed introductions. Management and rehabilitation efforts would be necessary.

4.4.3.6 Alternative E

Direct Effects

BMPs would be implemented on all potential surface disturbing activities affecting soils and biological soil crusts. More activities that affect soils and biological soil crusts would occur under this alternative from the construction or maintenance of roads, increases in OHV and mechanized vehicle use and open areas, increases in grazing and range improvement projects, or other surface disturbing projects. Any activities that remove the vegetation cover and increase the erosion rate would affect soils and other resource values.

Biological soil crust monitoring data would be utilized to inform decisions concerning natural resources and additional commodity production in areas containing biological soil crusts. A standard monitoring protocol would be developed the same as for all of the alternatives. The greatest effect on biological soil crusts would be under this alternative to promote commodity uses, with its potential increase in grazing, mining, roads, OHV and mechanized vehicle use, and recreation.

Indirect Effects

Woodlands. Ninety percent of western juniper would be removed from old growth stands with the same effects as described under Alternative A. Fires would be allowed to burn in old growth juniper stands with the same effects as Alternative C.

Mechanical removal of western juniper in quaking aspen, mountain mahogany, riparian, and sagebrush communities would have the same effects as described in Alternative A. Fire would be allowed in quaking aspen and mountain mahogany stands to reduce juniper dominance with the same effects as Alternative B.

Rangelands. The ecological status of native plant communities would be maintained or improved with the same effects as in Alternative A.

Desirable nonnative seedings would be managed to support grazing, while emphasizing diversity of composition and structure of nonnative seedings consistent with other resource objectives.

Prescribed and wildland fire would be implemented to promote ecologically desirable traits in rangeland vegetation communities. Short- and long-term effects would be similar to Alternative A, though greater in magnitude and more widespread.

The mechanical removal of woody vegetation to create a mosaic of successional stages in rangeland vegetation would have the same effects as Alternative A.

Energy and Minerals. Minerals management would be conducted the same as under Alternative A; therefore, the indirect effects on soils and biological soil crusts would be the same as Alternative A.

Grazing Management. Opportunities to maximize grazing in the AMU and the CMPA would be pursued under this alternative. Maximizing livestock grazing would have an increased effect on soils and biological soil crusts due to increased compaction, erosion, and resulting noxious weed introductions.

Wildland Fire Management. All wildland fires and wildland fire management activities would have the same effects as Alternative B. Mechanical treatments or prescribed fire would be implemented to reduce fuel loading, with the same effects as Alternative A.

Any activities that disturb soils where biological soil crust communities have developed could deplete soil productivity and increase the potential for noxious weeds and other invasive species to degrade the site.

Transportation and Roads. New roads would be constructed to encourage tourism, visitor use, and commodity production, which would have an effect on soils and biological soil crusts. New roads would increase soil compaction and erosion.

Road maintenance would be prioritized to meet commodity needs, and soil resource values could degrade. Road closures would occur only to protect the most critical resource values, and seasonal road closures would be implemented to reduce road damage.

Soils and biological soil crusts could become degraded, nonproductive, and eroded where road densities and resulting surface disturbances increase in the AMU. Disturbed soils could provide sites for increases in noxious weed introductions.

Off-Highway Vehicles. OHV and mechanized vehicle use in open areas could result in soil compaction, erosion, dust, and damage to biological soil crusts. Soils and biological soil crusts could potentially be affected by fuel spills, and compaction from OHV, mechanized vehicle, and snowmobile use. Organized OHV and mechanized vehicle events could compact and degrade soils and biological soil crusts in concentrated use areas. OHV and mechanized vehicle use on the Alvord Desert playa would result in visible tracks on the soil surface, but those tracks should fade or disappear following seasonal high water events. Illegal OHV and mechanized vehicle use on the dunes adjacent to the Alvord Desert playa would result in visible tracks on the dune surface, but unless vegetation is damaged, wind events would generally erase the tracks rapidly. 10% or more of the dune area would be potentially affected by illegal vehicle activity. The greatest effects from OHV and mechanized vehicle use on soils and biological soil crusts would occur under this alternative.

Recreation. Soil compaction and erosion would occur in high recreation use areas, especially developed campgrounds and dispersed sites. Increased dispersed recreation would increase the area and degree of soil compaction and erosion. All new construction could degrade soils and biological soil crusts. Undeveloped recreation sites would be expanded to increase tourism opportunities. In areas where recreation use is concentrated, soils, and biological soil crusts could become degraded, nonproductive and eroded, and susceptible to noxious weed introductions. Intensive management and rehabilitation efforts would be necessary.

4.4.4 Summary of Effects

Development and implementation of BMPs would be the primary mechanism under all of the alternatives to protect and manage soil, and to reduce erosion and disturbance to vegetation and water bodies. Activity level management planning would be developed to restore areas where soils would be eroding, particularly areas with impaired water bodies.

The collection of biological soil crust data and the development of a standard monitoring protocol would be used as indicators for rangeland health, which may provide additional protection of soil resources. Any activities that disturb soils where biological soil crust communities have developed could deplete soil productivity, and increase the potential for noxious weeds and other invasive species to degrade the site.

Under Alternative A, absence of prioritization at the watershed level for vegetation prescriptions could allow the degradation of soils and biological soil crust resources in specific locations. Grazing management would not be directed toward advanced ecological status, particularly in riparian/wetland habitats or for the restoration of roads outside of special designation areas. Soil and biological soil crust resource improvements in these areas would be slower than the Proposed RMP and Alternatives B and C.

Under Alternative B, potential activities that degrade soil and biological soil crust resources would be eliminated throughout most of the Planning Area.. Management emphasis toward an advanced ecological status would likely improve or maintain soil resources. The elimination of management actions that affect soil and biological soil crust resources would likely outweigh the potential consequences of less intensive management of noxious weeds and wildland fire. Over the short term, this alternative may lead to localized declines in soil productivity. In the long term, this alternative would be likely to maintain or improve soils and biological soil crusts.

Short-term effects on soil and biological soil crusts would be less under Alternative C, primarily due to closures and land access and use restrictions. Management goals and objectives for soil and biological soil crusts could be met under the Proposed RMP and Alternatives A, B, and C. The long-term effects from management emphasis under Alternatives E would likely not meet the management goals and objectives for soils and biological soil crusts.

The greatest effect on soils and biological soil crusts would be from OHV and mechanized vehicle use in open areas energy and mineral exploration and development, new recreation construction, and livestock grazing. Most of these activities would be limited or restricted under Alternative B, having the least overall effect on soils than other resource uses. The potential for effects on soil and biological soil crust resources by mineral exploration and development would be greatest under Alternatives A and E; there would be no effect under Alternative B, Alternative C, and the Proposed RMP, would be intermediate in their effects with Alternative C having less effect. OHV and mechanized vehicle use would have the greatest effect on soils and biological soil crusts under Alternatives E, A, and the Proposed RMP, in declining order. New road construction would have the greatest effect on soil and biological soil crusts under the Proposed RMP and Alternative E. New recreational sites and trails construction would have the greatest effect on soil and biological soil crusts under Alternative E. Grazing effects on soil and biological soil crusts would be greatest under Alternative E. The greatest emphasis to restore and rehabilitate soils and other natural resource values would be under the Proposed RMP and Alternative C. Due to the decrease in use and new development combined with the increase in restoration, Alternative C provides the greatest opportunity to meet the DRC for soil and biological soil crusts.

4.4.5 Cumulative Effects

Historically, erosion and loss of biological soil crust cover occurred on upland soils and in drainage channels as a result of uncontrolled land use, prolonged drought, and catastrophic storms. Ephemeral drainages were deeply incised by gully erosion more than 30 years ago. Some geologic and localized erosion as well as loss of biological soil crust cover still occurs, caused by concentrated uses. Introduced annual and perennial plants currently occupy many of these highly disturbed sites. Current soil productivity and biological soil crust cover reflects site specific natural conditions and past management practices. Current management practices have reduced erosion and have likely reduced loss of biological soil crust cover. These practices include proper stocking rates for livestock, rotation of grazing, improved designs of roads, rehabilitation of severely disturbed areas, restriction of motorized and mechanized vehicles to roads and ways, and control of concentrated recreational activities.

The future condition of soil and biological soil crust resources would be dependent on the condition of other resources, primarily upland and riparian vegetation. Management actions that affect the condition of these resources would also affect soils and biological soil crusts. Any activities that remove the vegetation cover and increase the erosion rate would affect soils. Due to slow soil recovery processes, the disruption of soils can lead to long-term changes in soil ecology and productivity. Implementation of BMPs would be the primary mechanism under all of the alternatives to protect and manage soil by reducing erosion, protecting water quality, increasing vegetation cover, and preventing noxious weeds or undesirable plant introductions.

Similarly, any management activities that disturb soils where biological soil crust communities have developed could deplete soil productivity, increase erosion, and increase the potential for noxious weeds and other invasive species to degrade the site. BMPs in Appendix F are not an exhaustive list of BMPs; additional BMPs for biological soil crusts may be identified in an interdisciplinary process when evaluating site specific actions.

A standard monitoring protocol for biological soil crusts would be developed under all of the alternatives. Monitoring data would guide management actions.

By implementing BMPs as standard operating procedure under all alternatives and for all ground disturbing activities, improvement in soil conditions would be expected to continue. BMPs would be prescribed and implemented at the activity plan level to prevent degradation of soil resources where they would be affected by management activities and other uses such as grazing and recreation. The management emphasis specific to each alternative (as summarized above) would determine the rate of improvement of soil and biological soil crust resource conditions from the cumulative effects of managing other resources. Over the long term, these practices could restore the historic characteristics of soil, biological soil crust cover, and vegetation, as well as watershed function.

4.5 Vegetation

4.5.1 Goal - Manage vegetation to achieve and maintain healthy watersheds.

4.5.2 Riparian and Wetlands

4.5.2.1 Goal and Objectives

Goal - Maintain, restore, or improve riparian vegetation, habitat diversity, and geomorphic stability to achieve healthy, productive riparian areas and wetlands and associated structure, function, process, and products that provide public lands values such as forage, water, cover, structure and security necessary to meet the life history requirements of fish and wildlife; public recreation and aesthetics; water quality and quantity; and livestock forage and water.

Objective 1. Achieve or maintain a rating of PFC for perennial and intermittent flowing and standing water bodies relative to site capability, site potential, and BLM management jurisdictions.

Objective 2. Maintain or improve riparian vegetation communities relative to ecological status, site potential and capability, or specific management objectives.

Objective 3. Manage riparian areas to maintain or restore soil moisture content and retention of ground water to augment base flow conditions during the warmer summer months.

4.5.2.2 Assumptions

Water bodies that do not meet Oregon's water quality standards would be managed with appropriate management actions developed for water quality limited or impaired streams, lakes, or other bodies of water in the Planning Area.

BMPs are recognized as the best way to maintain and restore water quality and riparian/wetland community structure, and to prevent or reduce erosion. The effectiveness of BMPs requires the use of appropriate measures and adequate implementation, as well as monitoring of the implementation and effectiveness. Where BMPs would be required, it is assumed that the selections and implementations would be appropriate, monitoring would be conducted, and monitoring data would be used in an adaptive management framework so that BMPs are effective.

Riparian zones serve as a primary indicator of watershed health and are a priority for management. The extent, continuity, and function of riparian/wetland areas have improved within the project area as a result of protection and management. Riparian/wetland vegetation is dependent on the condition of other resources throughout the watershed, including soils, upland vegetation, and water availability. Accomplishment of site/reach specific objectives would be dependent upon existing condition (ecological status), and subsequent environmental factors such as drought and flood cycles.

Since portions of the riparian/wetland vegetation throughout the Planning Area are not administered by the BLM, actions taken by the BLM alone may not be sufficient to restore riparian/wetland communities along their entire courses within the watershed. In order to restore riparian/wetland vegetation and associated water bodies, it is assumed that DEQ Water Quality Management Plans would be developed in coordination and cooperation with surrounding agencies and private land owners.

4.5.2.3 Analysis of Alternatives

4.5.2.3.1 Effects Common to All Alternatives

Direct Effects

The alternatives have the potential to affect riparian and wetland resources in terms of vegetation species diversity, cover, structure, distribution, and seral stage development of vegetation, and overall functioning condition of the riparian/wetland systems. BMPs would be continued, or prescribed and implemented at the activity plan level to promote the maintenance or improvement of riparian/wetland vegetation to maintain or progress toward PFC.

Based on surveys conducted between 1997 and 2000, 67 percent of the riparian areas assessed within the AMU and 75 percent of the riparian areas in the CMPA were in PFC. Management directed to progress toward PFC for those streams

not currently in PFC would likely increase the distribution and composition of riparian vegetation and facilitate opportunities to define and progress toward site/reach specific riparian vegetation ecological status objectives.

Sources of local riparian trees and shrubs (cottonwood, willow) would continue to be established and maintained to assist in riparian restoration efforts and to preserve genetic material.

Since the ODFW has the management responsibility for wildlife populations, the BLM would coordinate with the ODFW on the management of beaver populations throughout the Planning Area.

Indirect Effects

Water Resources. Management goals, objectives, and actions to maintain, restore, or improve water quality and quantity would promote the objectives for riparian/wetland vegetation and are addressed in the alternatives identified under Water Resources. These effects would be the same under all of the alternatives.

BMPs would be prescribed and implemented at the activity plan level to maintain, restore, or improve floodplain function and process, and to progress toward PFC across all alternatives. Although riparian/wetland communities in PFC would not necessarily be at site or ecological potential, PFC represents a condition where adequate riparian vegetation would be present to maintain functional stability, and facilitate progress toward site/reach specific ecological status objectives.

Noxious Weeds. Inventories would be conducted to detect new introductions and to determine changes in distribution of known introductions for all the alternatives. Control of the introduction and proliferation of noxious weeds would be a priority in all of the alternatives, although, at varying degrees by location and methods.

Noxious weeds invade native plant communities, including riparian/wetland communities, resulting in degraded plant community structure, cover, and diversity; loss of soil productivity and nutrient cycling; decreased water holding capacity; and increased soil erosion rates.

Public education and application of BMPs on surface disturbance projects would reduce the effects from potential introduction of noxious weeds into riparian areas.

Fish and Wildlife. Opportunities to improve or restore fish and wildlife habitat may affect riparian areas through vegetation manipulation such as juniper removal by mechanical means or by prescribed fire. The effects of these actions would be to decrease the amount of nonriparian vegetation in riparian areas and increase the amount and diversity of riparian vegetation. In addition, the effects of these actions would increase bank stability and cover for aquatic species. Effects would be analyzed on a case-by-case basis when site specific activity plans are developed.

Special Status Species. Goals and objectives for the management of special status species promote the objectives for riparian/wetland vegetation. The presence of special status species could direct specific riparian vegetation management objectives, such as ecological status, beyond a level of PFC.

Visual Resources. Depending on the VRM class of a proposed development or project location, a project may require mitigation, redesign, or relocation. This could constrain any development or project. Each project would be analyzed on a case-by-case basis.

Energy and Minerals. There would be no effect on riparian/wetland vegetation by locatable, leasable, and salable energy and mineral exploration and development in these areas that are closed by Congressional action or subject to WSA IMP nonimpairment criteria under all the alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, the Steens Mountain Wilderness, and WSAs, which together cover 72 percent of the Planning Area.

It is likely that only land with high mineral resource potential would be subject to mineral exploration. Further, it is likely that only a portion of that area with high mineral potential could be economically mined and would therefore be proposed for development. In leasing activities, there would be no surface disturbance and no effect on riparian/wetland vegetation under NSO leasing stipulations, and reduced effects under seasonal or other special leasing stipulations.

Under all alternatives, riparian/wetland vegetation located in areas open to minerals exploration and development could be degraded or destroyed by surface disturbance, lower soil productivity, erosion, compaction, and infestations or competition from noxious weed and other invasive species.

Riparian/wetland vegetation could be protected from surface disturbing minerals activities by mitigation measures such as these: stockpiling topsoil prior to surface disturbance, seeding the soil stockpiles with desirable riparian/wetland species, scarifying compacted ground, respreading soil stockpiles as soon as an area is exhausted or no longer in use, seeding the disturbed area after spreading the stockpiles, watering haul roads and taking other dust abatement measures, and constructing stormwater collection basins and taking other measures to control stormwater runoff.

Grazing Management. Appropriate management actions would be implemented to meet other resource objectives if it is determined that existing grazing management practices are contributing to nonattainment of resource objectives, such as riparian/wetland function, water quality and/or special status species habitat. The potential effects of livestock grazing on riparian/wetland vegetation, such as reduced composition and distribution, may continue pending site specific assessment, which would lead to the development and implementation of appropriate management. These effects may also be observed after implementation due to a lag in natural recovery processes.

Wildland Fire Management. Suppression of wildland fires would reduce the threat of burning riparian/wetland vegetation. Suppression action may result in temporary disturbance of riparian/wetland areas from trampling vegetation, compacting soil, and/or exposing soil to erosion. However, these effects may not be any greater or more likely than from the fire itself. Aerial application of retardant will follow current agency policy and manufacturer's recommended application.

Lands and Realty. Acquisitions through exchange or purchase of riparian/wetland areas would provide opportunities to increase public land acreage of these important and specialized habitats. ROWs for access or utility corridors that affect riparian areas would be mitigated on a case-by-case basis.

Transportation and Roads. Although road inventory and density estimates are not currently available, existing roads are assumed to be having limited effects on riparian areas based on existing knowledge of road proximity to riparian areas. Where road crossings occur in riparian/wetland areas, reduction of riparian vegetation would be localized and generally confined in area. Elimination and reduction of road use associated to wilderness road closures further reduces potential effects, as well as facilitating necessary restoration. Inventory and subsequent analysis of existing roads would facilitate necessary opportunities to minimize or mitigate effects to riparian/wetland vegetation. Application of BMPs for road construction, maintenance and general management would prevent, reduce or mitigate potential effects to riparian/wetland vegetation such as reduced density, erosion or soil compaction.

Wilderness. Actions allowed in wilderness would be limited to those in compliance with the Steens Act, the Wilderness Act, BLM regulations, and directives and policy regarding management of wilderness areas. This could constrain any proposed project. Each project would be analyzed through the use of MRDG.

Wilderness Study Areas. Actions in WSAs would be limited to those that would be in compliance with the WSA IMP. This could constrain any proposed project. Each project would be analyzed on a case-by-case basis.

4.5.2.3.2 Alternative A

Direct Effects

BMPs would be continued, or prescribed and implemented at the activity plan level to promote the maintenance or improvement of riparian/wetland vegetation to maintain or progress toward PFC. Depending on site/reach specific objectives, such as those developed and implemented to support WQRPs, riparian vegetation may be managed for a range of ecological status.

Beaver populations would be allowed to expand naturally under this alternative. Beaver expansion into riparian and wetland areas where riparian vegetation condition could not sustain increased utilization by beaver populations could result in reduced riparian vegetation. Beaver expansion into riparian communities where condition allows for sustainable increases in vegetation utilization by beaver could result in riparian/wetland vegetation expansion.

Indirect Effects

Woodlands. Juniper and other vegetation removal using prescribed fire and mechanical removal in the uplands and in riparian habitats could affect riparian/wetland vegetation by improving ground cover (e.g., increasing grass, forb, and shrub cover), increasing plant diversity, decreasing nondesirable species dominance, allowing greater infiltration and soil moisture storage, and improving watershed conditions. Initial effects on riparian/wetland habitats may include temporary reductions of riparian vegetation; however, these effects could be reduced or mitigated through application of BMPs such as timing and intensity of treatment, or active planting of riparian vegetation. These practices would restore riparian/wetland vegetation characteristics and improve watershed function.

Rangelands. Rangeland plant cover and density would be maintained or increased, thereby reducing potential erosion and improving conditions for streams and riparian/wetland habitats.

Prescribed fire and mechanical vegetation removal would be implemented to promote ecologically desirable traits such as a mosaic of successional stages in rangeland and riparian vegetation. The effects of these activities would be the same as described above in the Woodlands section.

Noxious Weeds. The effects of noxious weeds on riparian/wetland habitats include degradation of vegetation community structure, cover, and diversity. Continued public education and cooperative partnerships for the control of noxious weeds could maintain or improve riparian/wetland conditions resulting in effects to riparian/wetland vegetation, and bank protection. Reducing competition for water and nutrients would improve the ground cover by favoring perennial riparian species with better soil stabilizing capabilities than noxious weeds and other invasive species.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-eight percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on riparian/wetland vegetation on that much area. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer, on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Wild Horses and Burros. Maintenance of water for wild horses could have effects on riparian/wetland areas by reducing horse concentrations in riparian areas. Exclosure fences around springs would prevent grazing and trampling of vegetation at those sites.

Wild horses affect riparian/wetland sites through compaction and vegetation removal in some areas. Managing horses in HMAs reduces the effects on riparian/wetland areas outside these areas. Even though the boundaries for the South Steens and Kiger HMAs would remain the same, the effective area used by these horse herds has been reduced due to the Steens land exchanges and fencing of private land that followed. In the South Steens HMA, most riparian areas are in PFC. Retaining the same AML on a smaller land base might increase the effects of horse use to riparian areas at springs and along sections of the Donner und Blitzen River system. As interior fences are removed in the No Livestock Grazing Area, that portion of the HMA could be more accessible to horses. This would distribute horse use throughout more of the HMA and reduce riparian area use in other parts of the HMA. The Kiger horse herd has not used the portion of the HMA that was exchanged for approximately 15 years. Effects of horse use on riparian areas within the Kiger HMA would be the same as that which occurred before the Steens land exchange.

Grazing Management. Existing livestock grazing management has led to improved riparian/wetland conditions. Grazing and rangeland project implementation effects on riparian/wetland areas would be site specific, and has been adjusted to improve riparian/wetland resources in many portions of the Planning Area by managing vegetation and stream channel improvement. Other sites may still require management adjustments, and grazing could continue to have an effect on riparian/wetland areas. Grazing can reduce ground cover, litter development, watershed condition, and riparian/wetland vegetation.

Wildland Fire Management. Management actions to reduce fuels and/or restore historic fire regimes would increase watershed function and reduce the occurrence of wildland fire through riparian/wetland areas. This would facilitate maintenance and persistence of riparian/wetland vegetation. Prescribed fires could temporarily reduce riparian/wetland

vegetation if burned; however, this event would be avoided or mitigated as necessary. Rehabilitation of wildland fire areas would promote soil stability and infiltration adjacent to riparian areas. Where natural riparian regeneration would be expected to be limited, restoration could promote establishment of riparian/wetland vegetation. Temporary effects to riparian/wetland areas from mechanized fuels treatment or rehabilitation efforts may include soil compaction and vegetation disturbance. However, these effects would be expected to be of short duration, and minimized or mitigated.

Transportation and Roads. Road and ROW development in, near, or across riparian/wetland areas would affect riparian function and would be developed on a case-by-case basis. Most effects on riparian/wetland vegetation would be long term, resulting in the removal of vegetation, disruption or restriction of channel form, disruption of drainage patterns, surface and subsurface flows, and the loss or constriction of floodplains. The degree of effect would depend on the extent of the project within the riparian/wetland system. After surface disturbance, rehabilitation would concentrate on restoring riparian/wetlands to PFC.

Off-Highway Vehicles. OHV and mechanized vehicle use, where limited to designated or existing roads or ways, could result in localized disturbance of riparian/wetland vegetation through trampling of plants and soil compaction. Approximately 675,914 acres are open to OHV and mechanized vehicle use. These areas are likely to contain limited potential for riparian/wetland vegetation. Site specific protection or mitigation of OHV and mechanized vehicle disturbance would be addressed upon recognition.

Recreation. Recreational use could result in localized disturbance to riparian and wetland vegetation and soil compaction. Intensive management of some areas could provide greater protection for riparian/wetland areas through more immediate identification and resolution of potential conflicts between recreation uses and other resources.

4.5.2.3.3 Alternative B

Direct Effects

Natural processes would be emphasized in the maintenance and restoration of riparian/wetland areas to achieve or progress toward attainment of an advanced ecological status. Active restoration would be limited to reaches/sites that would not likely achieve or progress toward attainment of advanced ecological status within the RMP goal timeframe of 20 to 50 years.

Beaver populations would be managed as in Alternative A, with the same effects.

Indirect Effects

Woodlands. Reliance on natural processes and fire to reduce juniper in riparian/wetland areas could result in continued and increased suppression of riparian vegetation distribution and abundance, decreasing opportunities for maintaining or restoring riparian/wetland vegetation resources. Reduced emphasis on juniper and other vegetation removal in uplands and riparian areas could affect riparian/wetland vegetation by modifying watershed capabilities to capture and store precipitation, and by suppressing riparian vegetation recruitment/colonization through competition. This may result in increased runoff and reduced ground water contributions to riparian vegetation.

Rangelands. Natural processes would be allowed to determine rangeland vegetation communities. Where existing or future rangeland vegetation communities adjacent to riparian/wetland areas would be dominated by annual species (e.g. cheatgrass), which alter community stability and fire cycles, the density and distribution of riparian vegetation may be suppressed by fire.

Noxious Weeds. Noxious weed management would be limited to treating only high priority areas. The lack of emphasis on protection of riparian/wetland resources in areas that would not be high priority BLM administered lands could affect riparian/wetland vegetation cover and diversity, and bank protection where noxious weed introductions occur. Emphasis on manual and biological controls would be preferred, which may limit the effectiveness of control treatments of noxious weeds in riparian/wetland habitats.

Increased public education would reduce potential spread and new introductions of noxious weeds.

Energy and Minerals. There would be no indirect effects on riparian/wetland vegetation because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Wild Horses and Burros. Wild horse use would affect riparian/wetland sites the same as Alternative A. New spring/water developments would be implemented as necessary to sustain healthy viable herds, which could affect riparian/wetland vegetation by trampling and vegetation removal at those sites.

The effect of reducing the acreage in the Kiger HMA would be the same as described in Alternative A. The effects of reducing the acreage in the South Steens HMA by eliminating that part of the current HMA in the No Livestock Grazing Area while retaining the same AML would increase horse use in riparian areas and increase the possibility of reduction of riparian vegetation, decreased bank stability, and loss of PFC.

Management activities that restore riparian/wetland areas may require fencing to prevent trampling and grazing of planted materials.

Grazing Management. Elimination of grazing would promote maintenance and restoration of riparian/wetland vegetation.

Wildland Fire Management. The same as Alternative A.

Off-Highway Vehicles. The limitations and closures throughout the Planning Area would reduce the potential effects of OHV and mechanized vehicle use on riparian/wetland vegetation. Potential disturbance of riparian/wetland areas would be localized and associated with the designated roads in areas available for OHV and mechanized vehicle use.

Recreation. Minimal recreation management could reduce recreation use through much of the Planning Area. Reduced use could result in less localized disturbance to riparian and wetland vegetation. Minimal recreational management may provide less protection for riparian/wetland areas, as potential conflicts between recreation uses and other resources may be less likely to be identified and resolved.

4.5.2.3.4 Alternative C

Direct Effects

Riparian/wetland vegetation would be maintained or restored to an advanced ecological status through active and/or passive control of uses, such as livestock grazing and recreation, and development and implementation of restoration measures.

Beaver populations would be allowed to expand naturally as in Alternatives A and B, with the same effects. In addition, beaver would be reintroduced into suitable habitat. Since reintroduction areas would have suitable habitat for beaver, increases in vegetative utilization would be sustainable. The effects of reintroduction would therefore tend to include expansion of riparian vegetation, improved streambank stability, and increased cover and habitat complexity.

Indirect Effects

Woodlands. Juniper and other vegetation removal using fire and mechanical removal in the uplands and in riparian habitats would affect riparian/wetland vegetation the same as Alternative A. Managing naturally-ignited wildland fire to reduce juniper influence on other vegetation communities would increase maintenance and restoration of riparian vegetation and watershed function.

Rangelands. Rangeland plant communities would be maintained or improved, thereby reducing potential erosion and improving conditions for streams and riparian/wetland habitats.

Wildland fire, both naturally- and human-ignited, would be utilized to promote ecologically desirable traits in rangeland communities. The effects would be the same as Alternative A, though encompassing a larger area.

Mechanical removal of woody vegetation to create a mosaic of successional stages in rangeland and riparian vegetation would have effects similar to Alternative A.

Noxious Weeds. The effects would be the same as Alternative B.

Energy and Minerals. See Effects Common to All Alternatives. Under this alternative, 13 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development

with potential for effects on riparian/wetland vegetation on that much area. Locatable minerals activity would be most likely on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 43 acres in the Planning Area that have high potential for leasable minerals and that would be open; these acres would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 13 percent of the Planning Area that is open. As determined by the BLM authorized officer, on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Wild Horses and Burros. Spring development and maintenance of water for wild horses would have the same effects as Alternative A.

The effects of decreases in the acreage of the Kiger HMA on riparian areas would be as described in Alternative A. The effects of the decrease in acreage of the South Steens HMA would be the same as described in Alternative B.

Grazing Management. Grazing and rangeland project implementation effects on riparian/wetland areas would be site specific, and would be adjusted to improve riparian/wetland resources in many portions of the Planning Area by managing vegetation and stream channel improvements. Emphasis for grazing management under this alternative would be on nonconsumptive uses in the Planning Area, potentially reducing the effects on riparian/wetland resources from the current uses (Alternative A). Removal of projects and rehabilitation of project sites that do not function would be emphasized to improve resource values, including riparian/wetland resources. Permitted use in vacant allotments with resource conflicts could be discontinued, reducing the potential for effects on riparian/wetlands within or adjacent to those allotments.

Wildland Fire Management. Same as Alternative A.

Off-Highway Vehicles. OHV and mechanized vehicle use would be managed for minimal use in accordance with limited and closed OHV designations, thereby reducing the potential effects on riparian/wetland vegetation. Potential disturbance of riparian/wetland areas would be localized and associated with the use of designated roads and ways in those areas designated as limited to designated roads and ways.

Recreation. Recreational use could result in increased localized disturbance to riparian and wetland vegetation and soil compaction. Intensive management of some areas could provide greater protection for riparian/wetland areas through more immediate identification and resolution of potential conflicts between recreation uses and other resources, while conflicts between recreation uses and other resources may be less likely to be identified and resolved in other less intensively managed areas.

4.5.2.3.5 Proposed RMP

Direct Effects

Riparian/wetland vegetation would be maintained or restored at a range of ecological conditions depending on site/reach specific objectives, such as those prescribed for special status species habitat or water quality requirements. Riparian/wetland vegetation would be maintained or restored at least to a level adequate to maintain or progress toward PFC. However, the majority of perennial streams in the Planning Area on public lands are associated with special status fish, CWA 303(d) listed waters, wilderness and/or WSRs, and would be maintained or restored to a late or advanced ecological status through active or passive management.

Beaver populations would be managed as in Alternative C. However, this alternative would also allow for the removal of beaver if suitable habitat is not available or if economic harm or ecological damage is occurring. In areas where natural expansion of beaver into unsuitable riparian habitat (i.e., incapable of sustaining increased utilization) occurs, removal of beaver through recommendations to the ODFW could result in increased riparian vegetation density, with resulting improvements in aquatic habitat. In areas where natural expansion of beaver into suitable riparian habitat (i.e., capable of sustaining increased utilization) occurs but beaver are removed to reduce economic harm, changes to riparian vegetation and aquatic habitat associated with beaver would not occur.

Indirect Effects

Woodlands. Juniper and other vegetation removal using fire and mechanical removal in the uplands and in riparian habitats would affect riparian/wetland vegetation the same as Alternatives A and C.

Rangelands. Rangeland plant communities would be maintained or improved as in Alternative A and C with the same effects.

Wildland fire, both naturally- and human-ignited, would be utilized to promote ecologically desirable traits in rangeland communities. The effects would be the same as Alternative C.

Mechanical removal of woody vegetation to create a mosaic of successional stages in rangeland and riparian vegetation would have the same effects as Alternatives A and C.

Noxious Weeds. Increased public education and increased emphasis on inventory, research, prevention and restoration of noxious weeds would reduce the potential effects on riparian areas as discussed in the Effects Common to All Alternatives. Management emphasis on treating areas with high quality natural resource values (as in Alternatives B and C), and disturbed areas (as in Alternative A) would reduce or eliminate the potential effects of noxious weeds on riparian areas.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-seven percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on riparian/wetland vegetation on that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative; 281of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open. As determined by the BLM authorized officer, on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Wild Horses and Burros. Spring development and maintenance would have the same effects on riparian/wetland areas as Alternative A, with management emphasis on riparian/wetland resource objectives.

The effect of reducing the acreages in the Kiger and South Steens HMAs would be the same as described in Alternative A.

Grazing Management. Grazing management would continue toward improved riparian/wetland conditions while providing sustainable livestock grazing. Grazing and rangeland project implementation effects on riparian/wetland areas would be adjusted, when necessary, to improve riparian/wetland resources in the Planning Area, based on evaluations and rangeland health assessments that would determine allowable AUMs and plant community management.

Wildland Fire Management. Same as in Alternative A.

Off-Highway Vehicles. Same as in Alternative C.

Recreation. Same as in Alternative C.

4.5.2.3.6 Alternative E

Direct Effects

Same as in the Proposed RMP.

Indirect Effects

Woodlands. Juniper and other woody vegetation removal using prescribed fire and mechanical removal in the uplands and in riparian habitat would affect riparian/wetland vegetation the same as the Proposed RMP and Alternatives A and C.

Rangelands. Wildland fire, both naturally- and human-ignited, would be utilized to promote ecologically desirable traits in rangeland and riparian/wetland communities with the same effects as the Proposed RMP and Alternative C.

Mechanical removal of woody vegetation would be implemented to release suppressed desirable herbaceous vegetation. The effects would be the same as the Proposed RMP and Alternatives A and C.

Noxious Weeds. The effects would be the same as the Proposed RMP.

Energy and Minerals. Minerals management would be conducted the same as under Alternative A; therefore, the indirect effects on riparian/wetland vegetation would be the same as Alternative A.

Wild Horses and Burros. Spring development and maintenance would have the same effects on riparian/wetland areas as Alternative A, with management emphasis on commodity production such as livestock grazing while meeting other natural resource objectives. Wild horse use could increase at these sites, potentially increasing the effect on riparian/wetland vegetation and resources, including compaction, soil disturbance, vegetation community degradation, increased erosion, and bank deterioration. This would be the case if the South Steens HMA would be expanded to include the Dry Creek and Big Springs pastures of the Fish Creek-Big Indian Allotment, Serrano Point and Carlson Creek Allotments and the Bone Creek and Miners Field pastures of the Alvord Peak Allotment. Although wild horse use could be reduced on riparian areas in other parts of the HMA, many riparian areas in these allotments are in PFC or Functional At Risk (FAR) with a static or upward trend while some would be nonfunctional. Year long use by wild horses in this area would make achievement or maintenance of PFC in riparian areas and a thriving ecological balance an unrealistic goal. Existing fences on the north end of this area are not substantial enough to keep wild horses from roaming to the north into Wild Horse Canyon and further north on the east side of the Steens to Mann Lake Ranch. This could affect riparian areas along streams that contain Lahontan cutthroat trout. The effect of reducing the acreage in the Kiger HMA would be the same as described in Alternative A.

Grazing Management. Grazing and rangeland project implementation effects on riparian/wetland areas would be managed by accepted livestock management practices in order to meet riparian/wetland resource and other resource objectives. The greatest potential for effects to riparian/wetland vegetation and resources would result from this alternative, which emphasizes livestock grazing; however, this would likely result in additional mitigating infrastructure such as fencing and off-channel water developments to control livestock access to riparian areas.

Wildland Fire Management. The same as Alternative A.

Off-Highway Vehicles. The effects would be the same as Alternative A.

Recreation. Increased recreational use could result in increased disturbance to riparian/wetland areas. However, increased management of recreation would likely facilitate recognition, and subsequent prevention, reduction or mitigation of existing and potential disturbances.

4.5.2.4 Summary of Effects

The application of BMPs would serve as the general mechanism under any of the alternatives to maintain, restore, or improve riparian/wetland vegetation resources. The majority of riparian habitat in the Planning Area is associated with water bodies subject to CWA requirements as discussed in the Water Resources section. The development and implementation of WQRPs will further prescribe BMPs and site/reach specific objectives to improve management and protection of riparian vegetation regardless of selected alternatives in this plan. Riparian/wetland vegetation and associated values would continue to improve under all alternatives. Assessment and management under the Proposed RMP and Alternatives B, C, and E, would generally follow stream/watershed prioritization which should promote watershed level management and restoration.

Alternative A prescribes managing riparian/wetland vegetation to maintain or progress toward PFC. The distribution, diversity, and abundance of riparian/wetland vegetation to achieve PFC may vary in ecological status throughout the Planning Area. However, obligations pursuant to the CWA, ESA, WSRs Act and wilderness would likely result in managing riparian/wetland vegetation at or near a level of advanced ecological status throughout most of the Planning Area.

Alternative B prescribes managing to a level of advanced ecological status of riparian/wetland vegetation. This would likely be accomplished through the general exclusion of uses of public land resources, eliminating most of the potential human-caused disturbances to riparian/wetland vegetation. However, reliance on primarily passive measures for restoration of riparian/wetland vegetation, as well as watershed condition may prolong and in some cases preclude achieving a level of advanced ecological status. In particular, relying on fire without active cutting to reduce the

competition of juniper with riparian and other vegetation at a watershed scale may reduce the distribution, diversity, and abundance of riparian/wetland vegetation under this alternative.

Alternative C is similar to Alternative B in managing to a level of advanced ecological status of riparian/wetland vegetation, and overall reduced potential disturbance through focus on natural values and limited public land uses. However, this alternative promotes both passive and active management and restoration of vegetation resources. Therefore, this alternative is more likely to achieve a level of advanced ecological status and at a higher rate than other alternatives.

The Proposed RMP is similar to Alternative C in utilizing passive and active management to maintain, restore, or improve riparian/wetland vegetation resources. Although this alternative prescribes managing for a range of ecological conditions, rather than a level of advanced ecological status, attaining or progressing toward PFC would maintain, restore, or improve the distribution, diversity, and abundance of riparian/wetland vegetation throughout the Planning Area. Additionally, obligations pursuant to the CWA, ESA, WSR Act and wilderness would likely result in managing riparian/wetland vegetation at or near a level of advanced ecological status throughout much of the Planning Area. The emphasis on cooperative management would increase opportunities of establishing mutual resource management objectives, and would likely increase the success of maintaining, restoring, or improving riparian/wetland vegetation on public lands and potentially across jurisdictional boundaries.

Alternative E promotes increased uses and implies the potential for increased disturbance to riparian/wetland vegetation and associated values. However, obligations pursuant to the CWA, ESA, WSR Act and wilderness, and implementation of active and passive measures, would likely require more site specific management, protection and/or mitigation such as off channel water development and riparian exclosure fences for livestock, controlled recreation access to riparian/wetland areas, or riparian restoration.

4.5.2.5 Cumulative Effects

Riparian/wetland vegetation resources support and are supported by the ecological function of watersheds. Past management practices such as historic livestock grazing coupled with natural events of drought, flood, and wildland fire have and may continue to affect the distribution, abundance and diversity of riparian/wetland vegetation and the overall function of watersheds throughout the Planning Area. PFC assessments, of which riparian/wetland vegetation is a primary attribute, indicate that the majority of riparian areas assessed in the Planning Area are at a level of PFC. While PFC does not necessarily equate to the PNC, PFC demonstrates the level of resiliency required for a system to function and allow for maintenance and recovery of riparian/wetland communities and associated values. The values derived from riparian/wetland vegetation include water quality, fish and wildlife habitat, scenery, recreation and livestock forage. All of the alternatives described in this plan provide and promote the short- and long-term sustainability of riparian/wetland vegetation.

4.5.3 Woodlands

4.5.3.1 Goals and Objectives

Goal 1 - Maintain and improve integrity of old growth juniper woodlands.

Objective. Maintain or improve characteristics of old-growth juniper woodlands. Reduce the influence of post settlement western juniper trees in old growth western juniper woodlands.

Goal 2 - Maintain, restore, or improve the integrity of quaking aspen and mountain mahogany stands/groves.

Objective. Reduce the influence of western juniper and other associated woody plant species in quaking aspen and mountain mahogany stands/groves.

Goal 3 - Manage woodland habitats so the forage, water, cover, structure, and security necessary to meet life history requirements of wildlife would be available on public lands.

Objective. Reduce juniper woodlands to help restore riparian and sagebrush habitats.

4.5.3.2 Assumptions

Old growth western juniper woodlands would be defined by a set of characteristics related to the individual tree and the group of trees in the stand. The trees generally have a nonsymmetrical appearance, with rounded, spreading canopies. Individual branches or entire portions of the canopy may senesce, giving the canopy a sparse, open appearance. Trunks become irregular in shape, with severe taper. Deep furrows develop in the trunk and bark begins to take on a fibrous appearance. Bright green lichen can be found on the branches and upper portions of the trunks. Historically, these stands were found on rocky ridge tops and areas where soil development was minimal. Therefore, these areas burned at a lower frequency than adjacent plant communities. Fires were limited to individual trees or small patches following lightning strikes. Old growth western juniper stands occupy less than one percent of the total Planning Area, occupying specialized habitats. Density and cover of western juniper has increased over the past 120 years, with younger western juniper establishing and competing with old and ancient trees. Rates of mortality in the older, less vigorous trees may be increased by the increase in density and cover.

Cutting in old growth western juniper stands would be done primarily by chainsaws, or other cutting methods in wilderness. The rocky soils and steep slopes common to these stands makes the use of large mechanized equipment unlikely.

Western juniper has encroached into the majority of the quaking aspen stands below 7,500 feet in elevation. The encroachment would be most severe within the CMPA. Encroachment of western juniper has amplified the reduction in quaking aspen stands that is occurring across the western United States. Quaking aspen stands comprise just over one percent of the total landscape in the Andrews RA, but they are critically important to numerous wildlife species and contain many unique plant species and assemblages. Encroachment of western juniper into quaking aspen stands has not been observed to the same degree above 7,500 feet or in the Pueblo or Trout Creek Mountains. However, the stands in those areas reflect a general decline in quaking aspen common across the western United States. Fire suppression and subtle climatic shifts would be identified as the major causal factors.

Mountain mahogany stands occupy a small area within the Andrews RA, but are important for many wildlife species, similar to quaking aspen. However, these woodlands are commonly found on rocky ridge tops and shallow soil areas. Reduction in fire frequency and past management has allowed western juniper to establish in these stands. Western juniper would eventually overtop the mountain mahogany and eliminate it from the community. Mountain mahogany does not sprout following top removal.

Over 90 percent of present day western juniper woodlands in the Planning Area are less than 120 years old. Western juniper is actively encroaching into mountain big sagebrush plant communities in the northern end of the Planning Area. Post settlement western juniper woodlands are primarily found on Steens Mountain, Jackass Mountain, and lands directly adjacent to those mountains. Western juniper occurs as isolated individuals or small clusters throughout the rest of the Planning Area. In the post settlement woodlands, where western juniper has established since 1870, tree density and cover increase at the expense of the associated understory vegetation. The degree to which western juniper dominates a site is dependent on soil type and depth. Understory plants are most dramatically reduced on shallow south slopes. A fully developed western juniper woodland can reduce the understory to the point that herbaceous plants cover less than one percent of the soil surface. Shrubs are most dramatically affected on deeper soils. The herbaceous understory is capable of utilizing resources closer to the upper soil layers.

Establishment and woodland development in riparian areas is similar to quaking aspen stands. Western juniper woodland established less than 120 years ago has the greatest cover in quaking aspen and riparian areas. Response to juniper removal in these communities would be dramatic because of the inherent site productivity.

The increase of western juniper in the mountain big sagebrush and riparian plant communities can be attributed to past livestock management, fire suppression, subtle climatic shifts since the end of the 19th century, or a combination of all three factors. Fire can be an effective tool for restoring sagebrush and riparian habitats, but must be applied before the shrubs in the understory are lost from the community. Once that occurs, a pre-treatment must be applied to build ladder fuels in the understory. Past projects have shown positive response to cutting, burning or a combination of both. In most cases, the residual plant community is capable of responding to the removal of the western juniper overstory. Understory cover values as low as one percent under western juniper woodlands have increased to over 30 percent within five years of treatment across the Planning Area. However, conditions exist at the lower elevations where removal of the western juniper overstory must be followed by seeding. In these instances the understory vegetation has been reduced to very low levels or there are noxious weeds present.

4.5.3.3 Analysis of Alternatives

4.5.3.3.1 Effects Common to All Alternatives

Direct Effects

Cutting with chainsaws would have the lowest soil disturbance of all treatment methods. However, the amount of soil disturbance caused by mechanized equipment would be minimal due to the rocky surface soil conditions. Disturbance could be further reduced by working larger equipment over dry or frozen soils.

Removal of western juniper would result in an increase of available resources (soil moisture and soil nutrients). Residual understory plants would be capable of responding to removal of the western juniper overstory. The amount of mineral soil exposed may be similar to pre-treatment conditions or slightly increase following burning. The risk of soil erosion following the fire would be directly tied to soil type and slope position. In general, the amount of soil movement would be greatest immediately following fire. Once plant cover begins to increase, the amount of erosion would decrease. Soil movement from closed woodlands would likely be similar to that encountered following burning. However, plant cover would increase following burning as compared to western juniper woodlands where the understory plant cover would either stay static or decrease.

Soil disturbance from western juniper cutting would be least following cutting with chainsaws and would increase with the size of the machinery used. A large percent of the Andrews RA has western juniper on slopes that exceed the safe operation limits of larger machinery.

Indirect Effects

Water Resources. Development and prescription of BMPs to reasonably prevent degradation of water quality could modify or direct the treatment method, and timing and extent of treatment, particularly associated to removal of western juniper in riparian areas. Management direction for water quality or quantity may prioritize locations for woodland vegetation management, such as removal of western juniper from upland and riparian areas to increase ground cover to reduce sediment runoff and increase density and distribution of riparian vegetation for bank stability and shade.

Riparian and Wetlands. Although removal of western juniper from riparian and wetland areas would promote maintenance restoration of riparian and wetland vegetation communities, the timing, extent and method of removal of western juniper may be directed or modified to reduce potential impacts to existing riparian/wetland vegetation.

Noxious Weeds. Noxious weeds would be inventoried for regularly and treated in all alternatives. The treatment of noxious weeds by mechanical, chemical or biological methods, would help to control weeds that have established in woodland areas. By controlling noxious weeds, the diversity of vegetation could be maintained or improved on woodland sites. Frequent inventory would help to keep infestations from becoming large and difficult to manage.

Wildlife and Wildlife Habitat. Maintenance, restoration, or improvement of wildlife habitat in old growth western juniper stands may retain a greater cover and density of western juniper in portions of these stands depending on the wildlife management objectives for the site.. Maintaining cover for big game or woodland settings for certain species of migratory birds and other wildlife, could increase mortality of trees established prior to 1870. Especially susceptible to greater levels of competition would be the very old trees with partially live canopies. Restoration of juniper woodlands to sagebrush-steppe habitat for sagebrush dependent wildlife would help retain old growth juniper stands by removing the competition from trees established since 1870.

Maintenance, restoration, or improvement of wildlife habitat in aspen and mountain mahogany stands would allow for removal of juniper in these habitats and promote the maintenance of these stands.

Special Status Species. Manage special status plant and animal species and their habitats so management actions do not contribute to their decline or listing as T&E species. Presence of special status species or management actions to preserve their habitat could alter the treatment method, timing, or size of the treatment area, which could affect the results of actions to preserve old growth juniper, aspen or mountain mahogany stands.

Paleontological Resources. Identify significant localities where paleontological resources may be in conflict with other resource uses. Prior to treatment, the potential for paleontological resources would be evaluated. If paleontological resources were found, treatment actions would be designed to protect these resources from damage.

Cultural Resources. Identify significant localities where cultural resources may be in conflict with other resource uses. Prior to treatment, the potential for cultural resources would be evaluated. If cultural resources were found, treatment actions would be designed to protect these resources from damage.

Native American Traditional Practices. Consult with the Burns Paiute Tribe on all management actions. The Burns Paiute Tribe would be informed of treatment areas. Project objectives would consider tribal and other interests.

Visual Resources. The methods for treating woodland communities would be dependent on the VRM class objectives for specific areas. Most woodland sites in the Planning Area are within areas classified as either VRM class I or II in all alternatives, which would limit treatment techniques and size of treatment units. Those woodland communities located in VRM Class III and IV areas could be treated using more techniques on larger sites.

Wilderness. Management actions such as mechanical removal of vegetation and prescribed wildland fire may be limited or restricted in designated wilderness. Each project would be analyzed on a case-by-case basis and apply the Minimum Requirement Decision Guide.

Wilderness Study Areas. Actions in WSAs would be limited to those that would be in compliance with the WSA IMP. This could constrain any proposed project. Each project would be analyzed on a case-by-case basis.

Wild and Scenic Rivers. Management actions such as mechanical removal of vegetation and prescribed wildland fire may be limited or restricted in WSR corridors. Each project would be analyzed on a case-by-case basis and apply the MRDG.

4.5.3.3.2 Alternative A

Direct Effects

Fires are a rare event in old growth western juniper stands. However, the relatively recent increase in post settlement western juniper has increased the risk of wildland fire in these older stands. Increases in western juniper stand density and cover would also reduce the understory cover of herbaceous and woody plants. Suppression of fires in these stands would allow the continued establishment of younger trees at the expense of the understory vegetation. Tree density and cover would continue to increase, further reducing understory vegetation. The increase would continue until tree intraspecific competition would be severe enough to limit additional western juniper growth and establishment. Older trees would also be exposed to greater levels of competition from younger trees. Stands in this condition would be at an elevated risk of wildland fire and post-fire response would be limited due to the loss of understory plant species. Wildland fire intensity and severity would be greater than historic conditions because of the increase in tree cover and density. A larger number of older trees would be lost due to the potential for larger fires in these old growth stands. In areas targeted for cutting, removal of all post settlement western juniper from old growth stands would limit replacement of ancient trees that senesce or individuals killed by lightning or fire.

Removal of western juniper from lower elevation quaking aspen and mountain mahogany stands would release resources for quaking aspen and mountain mahogany growth. Trees cut and left in place would provide some physical protection for new and existing plants. However, many western juniper less than three feet tall would remain in the plant community. Uncut western juniper would also benefit from removal of overstory trees. Minor soil surface disturbance would occur during the cutting if chainsaws were used. Limited suckering would occur following cutting, especially if quaking aspen is also cut. Seedling establishment of mountain mahogany would be encouraged, with some degree of soil disturbance. Falling of western juniper may damage quaking aspen and mountain mahogany plants. Herbaceous and other woody understory vegetation cover would increase following cutting.

In stands where many western juniper saplings and seedlings exist, prescribed fire would kill these individuals. Quaking aspen suckering would be greatly favored by burning. However, areas with large accumulations of cutting slash may generate enough heat at the soil surface to reduce suckering. Burning when soil moisture is high and/or over frozen soils would reduce the effects of burning, but also reduce consumption of slash.

Burning in mountain mahogany stands would also kill mature mahogany. Slash could be removed from the site or burned during periods of high soil moisture. Cool temperatures would reduce the loss of mountain mahogany, similar to quaking aspen stands.

Burning would increase the amount of bare ground exposed. Increased bare ground may favor establishment of mountain mahogany. Establishment of mountain mahogany would be increased in areas where bare ground is present because of a hygroscopic awn attached to the seed that helps to drill the seed into the ground.

Suppression of fires in quaking aspen and mountain mahogany stands would permit western juniper to continue to increase density and cover. Sapling and smaller sized western juniper in the understory of quaking aspen and mountain mahogany stands provides ladder fuels for fire to spread into the canopies of the woodlands. Western juniper also contains a higher concentration of volatile oils that increases the flammability of the stand. Fires that do occur would burn with a greater intensity and result in a more severe fire than those of the past. In the absence of fire, existing quaking aspen and mountain mahogany would continue to be out-competed by western juniper, and stand dominance would shift to juniper.

Fencing of treated aspen and mahogany stands would protect new seedlings from grazing by large herbivores. Fences would be constructed to limit access by domestic and wild herbivores. Removal of the fence would occur when quaking aspen or mountain mahogany seedlings have grown to the point where browsing by large herbivores would not affect survival.

Following burning, tree cover would be reduced. This may have short-term effects in riparian areas. However, the inherent site productivity in the riparian areas would lead to a rapid plant response from herbaceous and broadleaved plants. Herbaceous plant productivity would increase in response to tree removal in the short term, but would decline as shrubs reestablished on site.

Overstory removal of western juniper by chainsaws or other mechanical methods would result in the accumulation of slash on the soil surface. The amount of slash would depend on the number of trees cut. Downed trees would provide physical protection to understory plants during recovery.

Burning in cut stands would result in the greatest amount of bare ground following treatment. A greater amount of heat would be transferred to the soil surface in burned areas where trees have been cut.

Indirect Effects

Rangelands. The use of prescribed fire and mechanical removal of juniper would create a mosaic of multiple successional stages in some woodland communities. Those actions would improve the health of woodland communities currently overpopulated with juniper.

Energy and Minerals. About 28 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development. A small percent of the open area is made up of woodland communities of aspen, juniper and mountain mahogany. Effects to woodlands would be low because of the low potential for minerals.

Livestock Grazing. Grazing, in the Planning Area, is currently managed using the Standards and Guidelines, which should allow woodland communities in upper seral status to maintain favorable conditions, and allow woodland communities in lower seral status to improve. Livestock occasionally browse aspen and mountain mahogany saplings in some areas, slowing the growth of those plants.

Wildland Fire Management. All wildland fires would be suppressed with the appropriate management response. Continued suppression of fires would permit young western juniper to establish and increase in old growth. Shrubs and herbaceous understory plants would be replaced by younger western juniper. Bare ground would be increased by the reduction in understory plants. Rehabilitation following wildland fire would utilize native and desirable introduced plant species. However, the small size of these old growth stands and inherently shallow, rocky surface conditions limit the fire rehabilitation options.

Suppression of all fires within the Planning Unit would allow the continued dominance of western juniper in quaking aspen and mountain mahogany stands. Prescribed fire and mechanical treatments would be the only method available to reduce the influence of western juniper in quaking aspen and mountain mahogany stands. Western juniper would

continue to increase and dominate in untreated stands. Quaking aspen clones could be permanently lost if western juniper is allowed to totally dominate the site.

Use prescribed fire and mechanical treatments to reduce fuel loads in areas where fire regimes have been altered. Reducing the accumulation of fuels would also reduce the influence of western juniper on upland and riparian plant communities.

Social and Economic Values. Contracts to cut younger western juniper trees from the old growth stands would be made available to local residents. Partnerships would be sought with adjoining private land owners. This would allow treatment areas to be designed based on biophysical boundaries and not geopolitical boundaries.

Fish and Wildlife. Maintain, restore or improve wildlife, fish and other aquatic habitat. Reducing the influence of western juniper in the uplands and adjacent riparian areas may increase the amount of water in the adjacent streams by reducing the evaporation in the adjacent plant communities. The additional soil moisture would be utilized by the understory plants during recovery. Short-term increases in bare ground may occur following treatment, but post-treatment response of understory plants would reduce the amounts of bare ground and the potential for sediment to move into the streams.

Allocate forage for wildlife at current demand and allow wildlife populations to expand naturally or through limited transport. Removal of western juniper from the uplands and riparian area would allow understory plants to increase, concomitantly increasing forage for wildlife. Wildlife populations may not initially increase, but the increase in forage could distribute grazing and browsing over a larger area reducing impacts on more sensitive areas.

Special Status Species. Manage in accordance with the Migratory Bird Executive Order and Sagebrush Steppe Ecosystem Management Guidelines. Many special status species require the presence of sagebrush for part or all of their life cycle. Timing and method of treatment would be modified to minimize negative effects on identified special status species.

4.5.3.3.3 Alternative B

Direct Effects

Post settlement western juniper trees would continue to establish and grow in the old growth stands. Cover and density of western juniper would increase as the younger trees grow. Risk of wildland fire would increase with the increasing tree cover. Wildland fire intensity and severity would be greater than historic levels in these stands. Prior to establishment of post settlement trees, fire was limited to single trees or small areas within the stand.

Mortality rates of ancient trees would increase due to intraspecific competition. The amount of standing and dead woody material would increase.

Fires would not be suppressed in these stands. Where post settlement trees have established and dominate the stand, fires would burn at greater intensity and severity. Acreage burned and number of ancient trees lost to fire would be greatest in this alternative.

Increased tree cover and density of post settlement trees would occur at the expense of the associated understory vegetation. As understory vegetation cover declines, the amount of bare ground and risk of soil erosion increase. This effect would be exacerbated by burning.

Western juniper would continue to increase cover and density in the lower elevation quaking aspen and mountain mahogany stands. Quaking aspen and mountain mahogany would decline at the lower elevation due to increases in western juniper. Associated understory plants would also decline in response to the increases in western juniper. Once western juniper forms a closed woodland in these plant communities, return to pre-encroachment plant communities would require planting of quaking aspen, mahogany, and many of the associated understory species.

Total number of acres burned would decrease in the short term and potentially increase in the long term. Encroachment of western juniper in the understory of quaking aspen and mountain mahogany provides ladder fuels. The flammability of western juniper would also be greater than quaking aspen. Fires that may have had limited potential for spread would have a greater chance of expanding. Response of quaking aspen to burning would be reduced because of the low vigor of the quaking aspen and mountain mahogany that would be competing with western juniper.

Burned areas would not be fenced for protection from grazing animals since no livestock would be grazing in the Planning area. Large wild herbivores would be drawn to areas where quaking aspen responds to fire. Concentration of these animals in the burned area would slow recovery of quaking aspen and mountain mahogany. Effects could be reduced if quaking aspen or mountain mahogany communities would be part of a larger burn.

Natural processes would permit a continued increase in the number of post settlement western juniper in riparian and sagebrush habitats, creating a general homogenization of the landscape. Increases in western juniper would occur at the expense of the understory vegetation. The amount of mineral soil exposed would increase, especially on south slopes.

Wildland fires would be evaluated for resource benefits. Those fires that do not pose a threat to firefighter or public safety and also do not threaten to affect private land would be managed for resource benefits. Wildland fires would be high intensity, and stand-replacing instead of the mixed intensity fires experienced by sagebrush prior to western juniper encroachment.

Allowing natural processes to determine the structure and composition of riparian, and sagebrush communities can be expected to result in a continued increase in the importance of western juniper established after 1870, in these communities, with gradual diminishing or loss of at least some of the habitat values that would be unique to those communities. Due to the increased fuel, temperatures would probably be higher when fires inevitably occur in these other communities. For this reason, and because the species that would be dependent upon or characteristic of those habitats were not adapted to low frequency high-intensity fire, the degree to which the existing vegetation and/or soil seed bank would be consumed would probably be greater.

Indirect Effects

Rangelands. Wildland fire would be utilized in woodland communities to create a mosaic of multiple successional stages within woodland communities, which would reduce the domination of juniper and allow for the return of suppressed desirable plant species.

Fish and Wildlife. Identify opportunities for improvement/restoration of fish and wildlife habitat through use of wildland fire, and other mainly passive methods. Under this management western juniper would continue to increase and dominate these stands.. Older juniper trees would be lost due to increased competition from western juniper trees.

Western juniper would continue to increase throughout much of the sagebrush plant communities and riparian areas between 4,000 and 7,000 feet elevation. Western juniper stands would be allowed to attain a density where only large scale catastrophic fires would reduce the influence of juniper on sagebrush plant communities.

Special Status Species. Let natural processes determine habitat for special status plant species except for management of critical habitat identified in recovery plans for federally listed species. Reliance on natural processes would permit western juniper to increase density and cover in quaking aspen and mountain mahogany stands not burned in wildland fire events.

Energy and Minerals. The entire Planning Area would be withdrawn from minerals. There would be no effects to woodlands.

Livestock Grazing. There would be no grazing in the Planning Area. Woodland communities in lower seral status should recover faster with no grazing.

Wildland Fire Management. Naturally-ignited wildland fires that do not threaten human life, private property or significant resource values would be evaluated and managed for resource benefits. Fire suppression actions would utilize Minimum Suppression Tactics, and MRDG would be conducted on suppression actions conducted in wilderness. Rehabilitation following wildland fire would utilize native and desirable introduced plant species. However, the small size of these old growth stands and inherently shallow, rocky surface conditions limit the fire rehabilitation options.

Natural fire starts would be insufficient to reduce the influence of western juniper in aspen and mountain mahogany stands. Increases in western juniper would cause a loss of lower elevation aspen and mountain mahogany stands and also change the fuel structure of the stand.

Many small fires would occur in areas dominated by western juniper. Single trees that were previously extinguished would continue to burn and likely form small, isolated patches of dead western juniper. However, the potential for large catastrophic wildland fires increases as the density and cover of western juniper increases. These large intense fires would result in mortality of western juniper and the associated desirable understory plant species. Natural recovery would be limited under these conditions because of the extensive plant mortality and the consumption of seeds stored in the soil.

4.5.3.3.4 Alternative C

Direct Effects

Post settlement western juniper trees would be cut in old growth stands, but up to ten percent of these trees would be left to replace dead and dying trees. The exact number of trees left uncut would be based on site specific stand characteristics and mortality. Disturbance to soils and the associated understory plant community in this alternative would be lower than Alternatives A and E.

Removal of the majority of the post settlement trees would help to reallocate resources to the understory plant community. Cover and density of understory plants would increase, reducing the size and extent of bare ground patches. Reduction in post settlement western juniper would also help to reduce live fuel loading and the potential for stand-replacement fires in the old growth stands.

Wildland fires would be evaluated for threats to firefighter safety, public safety, and private lands. Fires that do not pose threats to firefighters, public, or private land would be managed for resource benefits. Post-fire plant community would be similar to Alternative A. Post-fire plant communities would be dominated by herbaceous plants for five to fifteen years. Sagebrush and other shrubs would begin to reassert dominance throughout that period of time. As shrubs increase, herbaceous plant cover and density would decrease.

The direct effects of cutting of western juniper would be similar to Alternative A.

Indirect Effects

Rangelands. The effects would be similar to Alternative A, except wildland fire would be used instead of prescribed fire.

Fish and Wildlife. The effects of actions under this alternative would be similar to Alternative A but would allow for more reduction of younger juniper in old growth juniper stands, aspen stands, mountain mahogany stands and in sagebrush steppe habitat in efforts to restore, maintain or improve wildlife habitat.

Special Status Species. The effects of actions under this alternative would be similar to Alternative A but would allow for more reduction of younger juniper in old growth juniper stands, aspen stands, mountain mahogany stands and in sagebrush steppe habitat in efforts to restore, maintain or improve special status species habitat.

Energy and Minerals. About 13 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development. A small percent of the open area is made up of woodland communities of aspen, juniper and mountain mahogany. Effects to woodlands would be low because of the low potential for minerals.

Livestock Grazing. The effects of livestock grazing on woodlands would be similar to Alternative A, but with a reduced effect on young aspen and mountain mahogany saplings.

Wildland Fire Management. Similar to Alternative A except that leaving younger trees in the plant community could increase the fuel available to burn and provide fire a ladder to reach the canopy of older juniper trees. Fires that occur within these stands could be larger than in Alternative A where all younger trees would be removed and result in increased mortality of older juniper from fire.

Fires managed for resource benefits in aspen stands, mountain mahogany stands and juniper woodlands may burn acreage in addition to those areas treated by prescribed fire. Over the long term, the number of acres treated with prescribed fires would decrease as more naturally ignited fires were managed for resource benefits.

Social and Economic Values. Contracts to cut younger western juniper trees from the old growth stands would be made available to local residents. Partnerships would be sought with adjoining private land owners. This would allow treatment areas to be designed based on biophysical boundaries and not geopolitical boundaries.

4.5.3.3.5 Proposed RMP

Direct Effects

Direct effects of the Proposed RMP would be similar to Alternative C.

Development of markets for byproducts of mechanical treatments would help boost the economy of Harney County. The amount of material generated from the old growth stands would be minimal, but when added to other areas, could help to create jobs and increase economic activity in the county.

Direct effects of the Proposed RMP are a combination of Alternatives A and B. Direct effects of western juniper cutting and prescribed burning would be similar to Alternative A and the effects of utilizing wildland fire for resource benefits would be similar to Alternative B. The Proposed RMP incorporates the use of naturally-ignited wildland fires in combination with prescribed fire and mechanical treatment of western juniper.

Utilization of cut western juniper would reduce the fuel loading in quaking aspen and mountain mahogany. Fire intensity and severity would be lower in wildland fires than if slash were left on site.

Direct effects of the Proposed RMP would be similar to Alternative A and C. A greater number of acres may be cut in the Proposed RMP than in Alternative C.

Indirect Effects

Rangelands. Prescribed fire, wildland fire, and mechanical removal of juniper would be utilized in some woodland sites to create a mosaic of multiple successional stages. Woodland health would be improved by the removal of excess trees on some sites.

Fish and Wildlife. Same as Alternative A

Special Status Species. Same as Alternative A.

Energy and Minerals. About 27 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development. A small percent of the open area is made up of woodland communities of aspen, juniper and mountain mahogany. Effects to woodlands would be low because of the low potential for minerals.

Livestock Grazing. The effects of grazing on woodlands would be similar to Alternative A.

Wildland Fire Management. Wildland fires in western juniper woodlands within the WUI would be suppressed with the appropriate management response. Suppression actions would also be initiated on fires that threaten human life, private property or significant resource values. Continued suppression in these areas would permit young western juniper to establish and increase in old growth. The younger western juniper would increase the continuity of fuel in the plant community, providing a means of fire spread between trees, which may increase the mortality of old growth juniper trees due to fire.

The average size of smaller fires would increase in the quaking aspen and mountain mahogany stands. The number of acres mechanically treated to remove western juniper would decrease because wildland fires would be managed for resource benefits, reducing the reliance on mechanical methods.

4.5.3.3.6 Alternative E

Direct Effects

Direct effects of mechanical treatments in Alternative E would be the same as in Alternative A.

Direct effects of fire management in Alternative E would be similar to Alternative C with the following exceptions. Areas burned in old growth stands would be seeded to plant species that maximize forage production.

Direct and indirect effects of market development of byproducts from mechanical treatments would be the same as the Proposed RMP.

Direct effects of Alternative E would be similar to Alternative A with the following exceptions. Seeding of forage species following burning in quaking aspen stands would slow the recovery of native herbaceous and woody plants. No fencing following burning would also slow recovery. Wild and domestic larger herbivores would have ready access to the sites. Use of desirable forage species could help to defray some grazing on new quaking aspen and mountain mahogany shoots.

Same as the Proposed RMP and Alternatives A and C. Burned areas would be seeded with desirable forage species to facilitate forage production following burning. Seeding would slow recovery of native species.

Indirect Effects

Rangelands. The effects would be the same as the Proposed RMP.

Fish and Wildlife. Same as Alternative A

Special Status Species. Same as Alternative A

Energy and Minerals. The effects of energy and minerals would be the same as Alternative A.

Livestock Grazing. The effects of grazing on woodlands would be similar to Alternative A, but grazing damage on young aspen and mountain mahogany saplings could be greater.

Wildland Fire Management. Same as Alternative A, except that rehabilitation of burned areas would utilize forage grasses. Recovery of native grasses, forbs and shrubs would be slowed by the seeded forage species.

Social and Economic Values. Provide for commodity production to the maximum extent allowed under the Steens Act. Cut western juniper would be made available for use by industry and the public. Removal of this material would increase the travel into these stands.

4.5.3.4 Summary of Effects

Direct and indirect effects would be similar across all alternatives, with the exception of Alternative B. In this alternative, site specific biologic and physical processes would govern the stand structure. Without mechanical removal of the young trees (established after 1870), the number of trees on the site would increase at the expense of the associated understory plants. Removal of these younger trees would allow understory vegetation to be self-sustaining and support a variety of wildlife. Retention of a small percentage of younger trees, as in the Proposed RMP and Alternative C and, would allow for replacement of dead and dying western juniper. The mortality of the older trees occurs at a very slow rate, but retention of the younger trees would allow for their replacement.

Fire is a relatively rare event in these old growth stands, but fires do occur at a frequency of once every 100 to 200 years. These fires were limited in size due to the sparse fuel. Often only one tree was involved. Alternative B would retain the younger trees, allowing the stand to become dense and possibly support more continuous fuel layers and larger fires. This would increase the risk of loss of entire old growth stands in wildland fires, especially with the emphasis on minimum suppression tactics.

Alternative E would have the greatest number of acres mechanically treated and Alternative B would most likely have the lowest number of acres mechanically treated. Alternative E would have the greatest impacts of mechanized machinery because of the emphasis on commercial products. Harvested western juniper would be mechanically transported off site utilizing mechanized equipment. Soil disturbance would be greatest in this alternative. However, Alternative E would have the greatest short-term economic gain to the local community. Cutting of western juniper could be done by local contractors, and the small diameter material cut could be utilized by a local industry. The small acreage and remote locations of most quaking aspen and mountain mahogany stands reduce the likelihood of this use under current conditions.

The Proposed RMP and Alternatives B and C rely heavily on wildland fire to reduce the influence of western juniper in the quaking aspen and mountain mahogany stands. Air quality would be affected most by the Proposed RMP and Alternatives B and C. In these alternatives, wildland fires that do not threaten human life, private property or significant resource values would be managed with minimum suppression tactics. Smoke produced in the Proposed RMP would be concentrated for the most part in the late summer to early fall when areas were burned under management prescription. Total number of acres burned in the Proposed RMP and Alternatives B and C on average may be similar, but the Proposed RMP would have least variation in the number of acres from year to year. The Proposed RMP and Alternative C rely on natural ignitions that would be dependent on local climatic conditions. Smoke would be produced for a longer period than in Alternatives A and E where suppression would extinguish many of the fires in a shorter period of time. Alternatives A and E would require the greatest level of fire suppression action and have the smallest number of acres burned in either wild or prescribed fire. Full suppression could disturb the soil to a greater extent than in the Proposed RMP and Alternatives B and C.

Western juniper would continue to increase at a quicker rate in quaking aspen and mountain mahogany stands in Alternatives B and C than in the other three alternatives. Continued increases in western juniper would reduce the presence of quaking aspen and mountain mahogany. The number of cavities present for cavity nesting birds would be reduced as western juniper replaces quaking aspen. Increases in western juniper would also suppress the establishment and growth of mountain mahogany, especially on the edge of the stands. Younger mountain mahogany provides grazing animals a forage source periodically throughout the year. Trees in the interior of the stand would become decadent and eventually die. A combination of mechanical and wildland fire would be most effective in reducing the influence of western juniper in these stands. The Proposed RMP would treat the greatest number of acres in these plant communities.

Treatments over time would result in a mosaic of multiple successional stages across the landscape. As the number of acres and years since initial treatment increase, there should be an increase in the occurrence of wildland fire use in areas where threats to human life and private property were low. This would indicate that the vegetation and subsequently the fire regime would be approaching the appropriate conditions. Post-fire stabilization and rehabilitation efforts should decrease as the vegetation approach this condition. However, there would still need to be some type of treatments in areas where there continues to be threats to human life and private property where no cooperative agreements are in place.

Reduction of western juniper in woodlands established after 1870 would move toward restoration of big sagebrush from 4,000 to 7,000 feet in elevation across areas of the Planning Area. Wildlife and plant species that prefer sagebrush habitats would benefit from the reduction in competition from western juniper. Alternative E would convert the largest number of acres from western juniper woodlands to sagebrush/grassland plant communities. The Proposed RMP and Alternatives A, C, and E would utilize a combination of mechanical treatments and prescribed and/or wildland fire to reduce the influence of western juniper. Alternative B would rely on naturally-ignited wildland fires. However, only a small percentage of these fires would be managed for resource benefits because of potential threats to human life and private property.

Alternative E would treat the most acres mechanically. Encouraging development of new markets for western juniper would increase the level of mechanical activity due to a greater level of tree removal than the other three alternatives with mechanical treatments. However, this treatment would seed the most acres to grass species. This would increase the number of years before sagebrush would reestablish on the treated areas.

The Proposed RMP would have the greatest number of acres burned because of the combination of prescribed fire and management of wildland fire for resource benefits. Alternative A would not evaluate wildland fires for resource benefits. All fires would be suppressed under that alternative. Alternative C would burn a similar number of acres as the Proposed RMP, but without the use of mechanical treatments the total number of acres treated would be lower than the Proposed RMP.

Wildlife species that prefer sagebrush habitats would benefit most from the Proposed RMP and Alternative A. These alternatives would return a greater area to sagebrush habitats over the short and long term. Alternatives B and C would convert a smaller number of acres to sagebrush habitats and overall would favor species that prefer dense western juniper woodlands. Alternative E may convert a similar number of acres to sagebrush habitats as the Proposed RMP and Alternative A, but there would be a prolonged grassland stage with the seeding of forage species in treated areas.

Soil erosion would be greatest in the short term in Alternative E because of the reliance on mechanical equipment and harvest of western juniper. As herbaceous species increase following treatment, that effect would be reduced. Soil erosion immediately after treatment would be next highest in Alternatives A, Proposed RMP, Alternatives C, and B,

respectively. However, Alternative B would have the greatest soil erosion in the long term. The least number of acres would be converted back to sagebrush habitats in Alternative B. Western juniper would continue to increase in density and cover at the expense of understory plants. The amount of exposed bare ground would increase as the understory plants decrease. Soil would continue to be lost beneath these woodlands compared to treated areas where understory plant response has slowed the loss of soil.

4.5.3.5 Cumulative Effects

The relatively small size and position of the old growth stands limits the implication of treatments across a landscape. Old growth western juniper stands are located on rocky ridgetops and shallow soil areas. They often form islands within mountain big and Wyoming big sagebrush plant communities. However, these stands can be extremely important to some wildlife species that utilize older trees for nesting and brood rearing habitat. The presence of these stands helps to increase the diversity of plants and animals across the landscape. Loss of these sites to wildland fire or through replacement by younger western juniper would result in a loss of habitat for small mammals and some neotropical migrant birds.

Quaking aspen and mountain mahogany stands comprise less than two percent of the total land area within the Planning Area. Over the past ten years, less than one percent of all quaking aspen stands within the Planning Area has been treated by cutting and/or burning (wildland fire or prescribed fire). An unknown acreage of quaking aspen and mountain mahogany has been totally converted to western juniper woodlands. These two woodlands occupy a very small percentage of the total Planning Area, but provide important habitat for many wildlife and plant species. Conversion of quaking aspen to western juniper woodlands has the greatest effect on neotropical migrant birds, small mammals and to some extent wild ungulates. Treatment of these areas would often be in conjunction with larger units of mountain big sagebrush and western juniper. This allows for a more efficient management of these areas. Treatment with larger units in the mountain big sagebrush and western juniper woodlands helps to spread grazing pressure. Some treatment units would be fenced to protect new quaking aspen suckers or mountain mahogany seedlings. These fences would be temporary and only limit access until the suckers and seedings grow to a point where browsing by large ungulates would have minimal impacts.

Western juniper has replaced or would be in the processes of replacing big sagebrush across approximately 350,000 acres of the Planning Area. Alteration of the sagebrush plant communities has had an effect on many plant and animal species that were found in these plant communities. Continued expansion of western juniper would cause a further reduction in sagebrush plant communities and loss of habitat. There would also be an overall increase in the amount of bare ground or exposed mineral soil. This would increase the risk of soil movement. Loss of soil would reduce future site productivity and potential for the site to respond to management actions. Increases in erosion may also have impacts on adjacent stream systems and water quality.

Reduction of the western juniper would help to increase watershed integrity by reducing the total amount of soil eroded and transported into streams. Capture and release of precipitation would also be improved with reductions in western juniper. This would help to improve fish habitat downstream from the treatment areas by improving water quality, quantity and seasonal distribution.

Treatment of western juniper woodlands established after 1870 would help to increase the acreage of sagebrush and riparian habitats in the AMU. Reduction in western juniper would also increase the amount of forage available for grazing animals across the planning unit. The increase in western juniper has forced grazing animals, domestic and wild, to utilize a smaller area. Treatment would help to distribute the use across the area more evenly. Animals that rely on big sagebrush for part or all of their life cycle have also been forced to utilize a smaller area. Treatment of western juniper would create a mosaic of shrub and woodland communities across the AMU. Diversity at the species, plant community and landscape level would be highest under these conditions.

4.5.4 Wildlands Juniper Management Area

4.5.4.1 Goal and Objectives

Goal - Manage the WJMA for the purposes of experimentation, education, interpretation, and demonstration of active and passive management intended to restore the historic fire regime and native vegetation communities on Steens Mountain.

Objective 1. Establish a series of demonstration areas within the 3,267 acre WJMA for technology transfer and public education.

Objective 2. Evaluate different treatments and management strategies for plant communities dominated by western juniper.

4.5.4.2 Assumptions

Except for Alternative b, where grazing would be cancelled, all other alternatives could result in a temporary reduction in AUMs while some treatments would be evaluated. The BLM will work cooperatively with permittees to minimize the impacts of short-term forage reductions due to treatments in the WJMA. The WJMA contains an existing salable mineral site located north of the North Steens Loop Road in Township 32 South, Range 32 3/4 East, Section 29 Northeast and Sec 28 West. The 120-acre site was initially established to provide crushed rock for the Steens Loop Road.

4.5.4.3 Analysis of Alternatives

4.5.4.3.1 Effects Common to All Alternatives

Direct Effects

Inventories of biological communities present in the WJMA would help provide information on past, current, and future management actions in the western juniper zone. Data would provide a baseline for future comparison. Signs would be placed adjacent to treatments to help display the type of treatment and the effects. Signs would be an important part of the dissemination of information related to western juniper management.

Indirect Effects

Demonstration areas and signage would be important for disseminating improved scientific understanding of range and juniper management, and would promote improved land management by owners and permittees. Public demonstration of treatment options in a controlled field experiment situation would increase understanding and acceptance of juniper management actions and their effects.

Wildland Fire Management. Implementation of appropriate fire suppression actions in areas identified as possessing significant values could be significantly altered by unplanned wildland fire. Fire suppression actions will help to maintain existing demonstration and research plots within the WJMA. A significant investment will be made in these areas to collect pertinent information on past, current, and future potential projects.

Energy and Minerals. A 120-acre salable mineral site is located within the boundary of the WJMA. Placement of treatments or demonstration areas within the 120-acre site will be avoided. In some cases a buffer area around the site may be necessary to reduce any unexpected effects of the mineral activities.

Visual Resources. Depending on the VRM class of a proposed development or project location, a project may require mitigation or redesign. Each project would be analyzed on a case-by-case basis.

4.5.5 Rangelands

4.5.5.1 Goals and Objectives

Goal 1 - Maintain, restore, or improve the integrity of desirable vegetative communities including perennial, native, and desirable introduced plant species. Provide for their continued existence and normal function in nutrient, water, and energy cycles.

Objective 1. Maintain or restore native vegetation communities through sound landscape management practices.

Objective 2. Manage desirable nonnative seedings to meet resource objectives.

Objective 3. Rehabilitate plant communities that do not have the potential to meet the DRC through management.

Objective 4. Increase species and structural diversity at the plant community and landscape levels in the big sagebrush communities. Provide multiple successional stages within the landscape.

Goal 2 - Manage rangeland habitats so that the forage, water, cover, structure, and security necessary to meet life history requirements of wildlife are available on public lands.

Objective 1. Manage big sagebrush, quaking aspen, and western juniper communities to meet habitat requirements for wildlife.

Objective 2. Manage big sagebrush communities to meet the life history requirements of sagebrush dependent wildlife.

4.5.5.2 Assumptions

All actions and effects of the different alternatives that are discussed in this section are restricted to areas of public lands other than riparian/wetland, aquatic, woodland, and special status species habitat areas. Those areas are addressed in other sections.

Changes in vegetation that result either from natural ecological succession or from human-applied treatments include the following:

- increases or decreases in overall or "absolute" cover; namely, the proportion of the ground surface that has live plant material directly above it;
- increases or decreases in the total list of plant species occurring within a discrete area ("species diversity" in this document);
- changes in degree of uniformity or patchiness of occurrence of different species associations or successional stages ("community diversity" in this document; it would be described as being higher when the species compositions of different patches of vegetation are not as similar); and
- changes in "structural diversity," or the degree of patchiness or uniformity of the physical appearance of vegetation.

Generally, vegetation recovers more quickly from disturbances when all aspects of diversity are higher. Also, many environmental parameters that might be included in the general term "habitat values" correlate with the aspects of vegetation described above. For example, increased vegetation cover correlates with increased root density and biomass, which in turn correlates with increased soil stability and reduced erosion. This would be especially true when the vegetation includes a high proportion of herbaceous plants. Increased plant species and community diversity generally correlate with supporting a greater diversity and biomass of wildlife species (including nonpest insects, which are an important link in the food chain between plants and vertebrate wildlife). Structural diversity may be advantageous to some wildlife species, but not necessarily to all.

4.5.5.3 Analysis of Alternatives

4.5.5.3.1 Effects Common to All Alternatives

Indirect Effects

Energy and Minerals. There would be no effect on rangeland resources by locatable, leasable, and salable energy and mineral exploration and development in these areas closed by Congressional action or subject to the WSA IMP nonimpairment criteria under all the alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, the Steens Mountain Wilderness, and WSAs, which together cover 72 percent of the Planning Area.

It is likely that only land with high mineral resource potential would be subject to mineral exploration. Further, it is likely that only a portion of that area with high mineral potential could be economically mined and would therefore be proposed for development. In leasing activities, there would be no surface disturbance and no effect on rangelands under NSO leasing stipulations and reduced effects on rangelands under seasonal or other special leasing stipulations.

Under all alternatives, areas open to mineral exploration and development activities could have effects on rangeland resources including erosion, compaction, and changes in vegetation and animal communities. Minerals activities reduce cover and diversity of rangeland vegetation due to the creation of roads and operations areas. Creation, use, and reclamation of roads and exploration sites could encourage the growth of weeds, which in turn reduces native plant species and community diversity both in and adjacent to the road and further away if the weeds spread. Some minerals activities alter use of rangeland resources by cattle and wildlife as follows: 1) physical presence while operations are active; 2) the choice of seed mix used in revegetating an area; and 3) fencing used around some operations.

In surface disturbing exploration and development activities, rangeland resources could be protected by mitigation measures such as these: stockpiling topsoil; seeding the soil stockpiles; scarifying compacted ground and respreading the soil stockpiles as soon as an operations area is exhausted or no longer in use; seeding the disturbed area after respreading stockpiles; monitoring and treating for weeds; and constructing stormwater collection basins and taking other measures to control stormwater runoff.

Soils and Biological Soil Crusts. The application of BMPs on all surface disturbing activities would help vegetation cover on the limited amount of area involved. The collection of biological soil crust data by means of a standard monitoring method would have minimal effects by itself, but would enable better informed future decisions about management actions and consequences.

Visual Resources. Depending on the VRM class of a proposed development or project location, a project may require mitigation, redesign, or relocation. This could constrain any development or project. Each project would be analyzed on a case-by-case basis.

Wilderness Study Areas. Actions in WSAs would be limited to those that would be in compliance with the WSA IMP. This could constrain any proposed project. Each project would be analyzed on a case-by-case basis.

4.5.5.3.2 Alternative A

Direct Effects

Nonnative seedings would be managed or manipulated to meet S&Gs. Vegetation characteristics in areas where management or manipulations were applied would probably be altered. Interseeding of only 200 acres would have no appreciable effect on vegetation in the context of the acreage of Greater sage-grouse habitat (probably several hundred thousand acres) and deer winter range habitat (537,929 acres) in the Planning Area.

Mechanical methods of decreasing shrub biomass (brushbeating or disking) in a mosaic pattern of 50 percent of nonnative seedings where brush cover is high would generally have the effect of increasing the relative cover and biomass of herbaceous species.

Indirect Effects

Woodlands. Active vegetation manipulations and rehabilitation of burned areas would likely result in higher cover and diversity in post-burn early successional communities

Similarly, the use of prescribed fire and mechanical treatments to create a mosaic of successional stages and release suppressed desirable plants would create a greater plant community diversity than exists at present, and would facilitate implementation of the S&Gs that pertain to upland habitat areas. These actions would be necessary for promoting the structural and species diversity of sagebrush, woodland, and other upland habitats.

Noxious Weeds. Under Alternative A, integrated weed management actions would emphasize human-disturbed areas such as roadsides, ROWs, and recreational areas. These actions would result in localized reductions in weed numbers and biomass in such areas. In these areas, weeds can frequently spread and outcompete native species due to their inherent characteristics, the disturbed soil conditions, and increased soil moisture that can result where compacted or impervious surfaces concentrate sheet runoff in the nearby areas. Weed control also tends to protect the integrity and diversity of rangeland vegetation by reducing the spread of weeds into areas further from human influence.

Fish and Wildlife. The seeding of 9,000 acres of deer winter range would result in increased plant numbers and possibly in community diversity in that specific area. Allocation of wildlife forage at current levels would have no effect when compared with the existing condition, but would allow for the persistence of desired wildlife at viable population levels.

Special Status Species. Limiting the management of big sagebrush habitat for wildlife habitat values on a case-by-case basis would reduce the degree to which these values can be created, improved, or restored, due to the staff and calendar time required to review and act on each case. However, any actions taken to implement the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush Steppe Ecosystem Management Guidelines would probably increase the plant species, community, and structural diversity of rangeland vegetation where those actions occurred.

A determination of existing suitable habitat conditions to support reintroductions of locally extirpated wildlife species and needed improvements could guide habitat restoration actions that would be specified under other management actions. These actions would likely increase the structural and species diversity of rangeland vegetation. Generally, actions under other issue areas, such as restoration of quaking aspen and mountain mahogany stands, would be those that would be important to support reintroductions (e.g., of sharp-tailed grouse and mountain quail, respectively).

Installation of guzzlers in suitable locations would be an important action to improve the wildlife values of rangelands in the Planning Area. Water would generally be a limiting resource in habitat use by larger mammals and some other species in arid lands such as the Planning Area; if water were not available within relatively short distances, the area would not be suitable for use by larger species of wildlife even where excellent upland habitat conditions exist.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-eight percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on rangeland resources on that much area. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources that would be open under this alternative. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer, on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Wild Horses and Burros. Managing for the AML in the wild horse HMAs is mostly compatible with maintenance of the DRC on rangelands. Continuation of the current management would still allow wild horse grazing during the critical growth period which may affect herbaceous vegetation in the more easily accessible areas.

Grazing Management. Under Alternative A, livestock grazing provisions, especially the implementation of the S&Gs, should allow for the improvement of soil conditions, overall vegetation cover, structural diversity, and species composition of rangelands in many areas of the Planning Area.

4.5.5.3.3 Alternative B

Direct Effects

Areas burned by naturally and human-ignited fires would subsequently support early successional vegetation communities. Limitations on methods available for management and restoration of rangeland habitat values under Alternative B could limit or preclude the likelihood of achieving Goal 1, Objectives 2 and 3.

Indirect Effects

Woodlands. Under Alternative B, natural processes would be allowed to determine vegetation composition and successional stages; burned areas would be rehabilitated using native species. Burned areas sometimes convert to cheatgrass habitat if not rehabilitated. Analogous statements apply to all other similar management actions under Alternative B, which would allow natural processes rather than active management to determine plant community conditions.

Noxious Weeds. Limiting noxious weed treatments to only high priority sites would allow noxious weeds to continue to spread, and to increase the proportion of the current plant community. Preference for manual or biological control methods may result in less effective control than would integrated weed management. The spread and ineffective control of noxious weed species could result in reduction in diversity of rangeland vegetation. Inventories to detect new introductions have no environmental effect without contingent actions to control introductions when found.

Fish and Wildlife. Aerial reseeding of 9,000 acres of deer winter range with sagebrush would have limited effects on rangelands because other species, whether native or desirable nonnative, would not be included in the seed mixture.

Special Status Species. The reintroduction of extirpated animals (e.g., sharp-tailed grouse and mountain quail) would have a negligible effect on rangelands. Allowing bighorn sheep to expand naturally with no control on populations in any given area could eventually deplete forage resources in some areas.

Energy and Minerals. There would be no indirect effects on rangeland resources because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Wild Horses and Burros. The AML and season of use for wild horses would not change from the existing situation. With no competition from livestock, impacts to vegetation would be reduced from the existing situation. Impacts to herbaceous vegetation during the growing season would still be evident in the more easily accessible areas.

Grazing Management. The grazing provisions of Alternative B would generally result in recovery of natural communities to the DRC, although reliance only on natural processes and not active management could retard this process in degraded areas, particularly those where cheatgrass or other noxious weeds dominate. In some cases such communities do not recover quickly, or at all without active management.

4.5.5.3.4 Alternative C

Direct Effects

Interseeding of 20,000 acres of nonnative seedings could result in increases of native vegetation diversity and cover. The inclusion of nonnative species could result in competition with native species and thereby may reduce the degree to which an increase in native plant species diversity and cover would be realized.

Generally, the emphasis on use of native species for rehabilitation could result in higher species, community, and structural diversity. Actions to diversify structure and composition of selected nonnative seedings by interseeding native species on 20,000 acres of nonnative seedings on the north and west side of Steens Mountain, would increase the diversity of rangeland vegetation.

Seeding of native species along with desired nonnative species would increase rangeland vegetation diversity. Provisions for allowing natural processes and naturally ignited wildland fire to create mosaic and release of desired suppressed components of the vegetation would also increase rangeland vegetation community and structural diversity.

Indirect Effects

Woodlands. By burning and mechanically removing post settlement western juniper from rangelands, native herbaceous plant species would respond with improved vigor and repopulate the niches formerly occupied by the juniper. Fire tolerant shrub species would also reestablish within the control area. Fire intolerant species, such as big sagebrush, would take longer to reestablish unless reseeding would be part of the rehabilitation effort.

Noxious Weeds. Treatment of only high priority noxious weed infested areas could increase diversity at those sites, but has the potential to allow weed introductions to spread in lower priority areas, with possible loss of community and structural diversity. Inventory to detect new infestations has no environmental effect without contingent actions to control infestations when found.

Fish and Wildlife. Management actions that allow for increasing community or structural diversity by prescribed fire, other vegetation manipulations, fence removal, and new water developments, would provide for the maximum level of flexibility in increasing existing rangeland diversity.

Allocation of more forage to wildlife would have only limited effects on quantitative aspects of rangeland conditions (e.g., vegetation cover, soil stability, crusts, and erosion) because the same amount of vegetation removal would occur. However, qualitative changes to vegetation structure and composition could occur, resulting from differences in grazing/browsing preferences.

Seeding low vegetative diversity deer winter range with the use of both native and desirable nonnative species would affect rangelands by providing greater diversity and community structure.

Management actions under Alternative C would provide habitat characteristics that would be valuable to game and nongame species in all sagebrush habitats.

Special Status Species. The effects of management actions that improve big sagebrush habitat for the benefit of wildlife, provide for management of bighorn sheep and allow for potential reintroductions of sharp-tailed grouse and mountain quail, would be the same as Alternative A.

Installation of up to ten guzzlers under Alternative C would have the same environmental consequences as those discussed under Alternative A.

Energy and Minerals. See Effects Common to All Alternatives. Under this alternative, 13 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development with potential for effects on rangeland resources on that much area. Locatable minerals activity would be most likely on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 43 acres in the Planning Area that have high potential for leasable minerals and that would be open; these acres would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 13 percent of the Planning Area that is open. As determined by the BLM authorized officer, on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Wild Horses and Burros. The AML and season of use for wild horses would not change from the existing situation. Livestock grazing would occur at a reduced rate, when compared with the existing situation, and would compete with wild horse use in areas where the use overlaps. Impacts to vegetation in the more easily accessible areas would be greater here than in Alternative B but less than the existing situation.

Grazing Management. The effects of livestock grazing on rangeland vegetation would be reduced from the existing situation, possibly allowing the ecological condition in some areas to improve. A reduction in grazing may also limit the dominance of woody plant species and increase the diversity in most plant communities. Natural functions and watershed stability would also improve with higher ecological condition.

4.5.5.3.5 Proposed RMP

Direct Effects

The effects of management actions under this alternative would be very similar to those under Alternative C

Indirect Effects

Woodlands. The effects of woodlands management on rangelands would be the same as Alternative C.

Noxious Weeds. By applying integrated management, emphasizing prevention of noxious weeds, and increasing inventory in the effort to control noxious weeds, most rangeland sites may stay free from new and existing infestations. By removing all or most of the noxious weed introductions and preventing new introductions, the ecological condition of rangelands would improve or maintain, depending on the site.

Fish and Wildlife. Under the Proposed RMP, management of most big sagebrush habitat for game and nongame species would have the effect of improving the diversity and community structure in degraded deer winter range; however, with the use of nonnative species, native plants may not be as prevalent as if all natives were used.

Special Status Species. The effects of management actions for the benefit of special status species would be the same as Alternative A.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-seven percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on rangeland resources on that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable

minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative; 281of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open. As determined by the BLM authorized officer, on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Wild Horses and Burros. The AML and season of use for wild horses would not change from the existing situation. The effects of wild horse management on rangelands would be the same as Alternative A.

Grazing Management. Managing for sustainable livestock grazing in both the AMU and the CMPA would not change the present management greatly. New range improvements may change grazing patterns in some areas. By managing to the satisfaction of the S & Gs, rangelands should be protected from impacts caused by grazing.

4.5.5.3.6 Alternative E

Direct Effects

Vegetation cover would be increased. Compared with the present condition, the emphasis on vegetation biomass and species selection for commodity production would result in lower diversity of native species due to competition with nonnative species, and lower community and structural diversity. Establishment of new nonnative seedings would reduce native species diversity, community diversity, and structural diversity.

Indirect Effects

Woodlands. The effects of management actions under this alternative would be the same as Alternative A except where the development of markets for juniper byproducts may mean removal of more juniper than with fuels reduction treatments alone. The immediate impacts could compact soil and lead to increased erosion, which could affect productivity. In the long term, the removal of juniper would allow for increased herbaceous cover and the reestablishment of sagebrush steppe community.

Noxious Weeds. The effects of noxious weed management in this alternative would be the same as the Proposed RMP, except that increasing inventories for detecting new introductions of noxious weeds would allow for increased treatment of existing infestations and reduce the risk of new infestations going undetected.

Fish and Wildlife. The effects of management actions in this alternative would be to provide for some increase in diversity and community structure in nonnative seedings as well as in some deer winter range where vegetative species diversity would be low. In most of the areas with low species diversity remaining and progressing toward restoration of native vegetation, the process would be slow and possibly extend beyond the life of this plan.

Special Status Species. The effects of the management actions in this alternative would be the same as Alternative A.

Energy and Minerals. Minerals management would be conducted the same as under Alternative A; therefore, the indirect effects on rangeland resources would be the same as Alternative A.

Wild Horses and Burros. The effects of the management actions in this alternative would be the same as Alternative A except that wild horses would be reintroduced into part of the South Steens Herd Area along the east side of the Steens from Wild Horse Canyon south to Long Hollow Road. This would affect rangeland vegetation in that area by introducing year long use by wild horses on much of the native vegetation, thereby reducing the vegetative cover and productivity of this area.

Grazing Management. Livestock grazing would be maximized, allowing greater forage utilization. This would put more pressure on forage resources in easily accessible areas. Rangeland projects would be constructed for the benefit of the increased grazing, causing some disturbance to vegetation in small, localized areas from trampling and trails. The overall long-term vigor and health of vegetation communities could still be maintained across the landscape.

4.5.5.4 Summary of Effects

In Alternative A, interseeding of only 200 acres would have no effect on vegetation within Greater sage-grouse habitat and deer winter range. Mechanical methods used to decrease shrub biomass would increase the cover and biomass of herbaceous plant species. The application of prescribed fire in some vegetation communities would create a mosaic of successional stages and release plants that have been suppressed due to lack of fire. Noxious weeds could be successfully managed by using integrated weed management in some of the problem areas such as roadsides, ROWs, and recreational areas. Additional seeding of sagebrush in deer winter ranges could improve habitat and community diversity. Construction of guzzlers in areas where water would not be present could improve wildlife habitat in those areas. Management of livestock grazing would have a beneficial effect on rangelands by allowing for improved watershed conditions, vegetation cover, structural diversity, and species composition.

With the removal of livestock grazing in Alternative B, native rangelands would respond with increases in vigor and plant diversity except in areas where noxious weeds have established. Limited controls on noxious weed spread could allow the weeds to dominate native rangelands and could result in a reduction in plant diversity. Allowing bighorn sheep to expand naturally with no transplants out of the population could eventually result in depleted forage resources in some areas. Wild horses would continue to be managed within the AML to keep the effects on vegetation resources minimal.

The interseeding of 20,000 acres within nonnative seedings in Alternative C could result in beneficial increases in diversity and cover for wildlife. Burning and mechanically removing post settlement western juniper from rangelands would allow herbaceous plant species to respond with improved vigor and repopulate the niches formerly occupied by the juniper. Treating only high priority, noxious weed infested areas could protect some areas while allowing weeds to occupy sites in other areas and spread uncontrolled. Seeding lower seral deer winter range with native and desirable nonnative species would provide greater diversity and community structure. The installation of new improvements for the benefit of extending wildlife habitat would have little or no effect on rangelands and could provide additional wildlife habitat. The effects of wild horse management on rangelands would be the same as Alternative B, but the effects of livestock grazing would be greater. Livestock grazing would still be less than in the existing situation, and ecological condition should improve in most areas.

In the Proposed RMP, a smaller number of acres within nonnative seedings would be seeded with native and desirable nonnative plant species than in Alternative C, reducing the effect on the seeding. The effects of controlling post settlement juniper would be the same as in Alternative C. The effect of noxious weed control would be greater than any other alternative because the management actions emphasize control on all existing sites and extensive inventory in other areas. The management of most big sagebrush plant communities in degraded deer winter range would also improve the diversity and plant community structure. The effects of management actions for the benefit of special status species would be the same as in Alternative A. The effects of wild horse management on rangelands would be the same as in Alternative B. Management for sustainable livestock grazing in both the AMU and the CMPA would not change the present management greatly.

Vegetation cover would be increased in Alternative E. The establishment of new nonnative seedings could reduce the diversity of rangelands in general. More juniper could be removed in this alternative, which could cause impacts to both soils and plant communities. In the long term, herbaceous vegetation would improve with the removal of the juniper. The effects of noxious weed management on rangelands would be the same as in the Proposed RMP. The effects of wild horse management would be the same as in the Proposed RMP, except that vegetation could be affected if horses are reintroduced on the east side of the Steens Mountains from Wild Horse Canyon to the Long Hollow Road. Productivity and cover could be reduced from horses grazing year long in this area. The maximizing of livestock grazing would allow for greater forage utilization and may affect vegetation in easily accessible areas. New rangeland improvements would be constructed, possibly causing disturbance to vegetation in small, localized areas.

The potential for effect on rangeland resources by mineral exploration and development would be greatest under Alternatives A and E; there would be no effect under Alternative B; and the Proposed RMP and Alternative C would be intermediate in their effects with Alternative C having less effect.

4.5.5.5 Cumulative Effects

Many changes have taken place since the introduction 150 years ago of cattle, sheep, and horses. The drastic reduction of wildland fires and the accidental introduction of noxious weeds and other aggressive weed species have also changed the landscape in some areas. The application of grazing management, prescribed burning, and integrated weed management would help to change the direction of conditions on some rangelands. The objective would be to improve

the ecological condition in key areas where diversity of vegetation would be lacking and exotic species dominate the community.

4.5.6 Noxious Weeds

4.5.6.1 Goal and Objectives

Goal - Control the introduction and proliferation of noxious weeds and reduce the extent and density of established populations to acceptable levels.

Objective 1. Treat noxious weeds and inventory for new infestations using the most effective means available, as outlined in the Burn's District Integrated Weed management Program EA/Decision Record.

Objective 2. Create public awareness on how to utilize public lands without inadvertently spreading noxious weeds.

Objective 3. Maintain partnerships with local groups and government agencies to combine efforts in the control and prevention of noxious weed infestations.

4.5.6.2 Assumptions

Noxious weeds are currently present throughout the SBR area, and have become introduced in the Planning Area primarily where disturbance has occurred. Where early detection and control do not occur, these weeds spread out from the initial introduction site, invading even excellent condition plant communities. An integrated weed management program has been implemented covering approximately 3.7 million acres within three counties, including both the Three Rivers and Andrews RAs.

To date, 18 different noxious weed species have been discovered in the Planning Area. Noxious weed infestations contribute to the loss of rangeland productivity, increased soil erosion, reduced species and structural diversity, and loss of riparian/wetland and wildlife habitat.

Effective management of noxious weeds includes incorporating prevention measures to avoid weed establishment during the design and implementation of any authorized activities. These include such measures as reducing surface disturbance, cleaning all equipment and vehicles, providing public awareness of the noxious weed issue, and monitoring high risk areas (e.g., high recreational use areas, livestock holding, salting and watering areas, heavily traveled roads, materials sites). Early detection would be critical in order to control noxious weeds before they spread from the site of introduction. Inventory and monitoring must occur annually in high risk areas; systematic inventory of all areas should occur as priorities and resources allow.

Since portions of the Planning Area are not public land, BLM management actions alone may not sufficiently protect resources from noxious weed infestations. In mixed ownership watersheds, the assumption would be that the BLM would continue to work in cooperation with federal, state, county, private interests, and the Harney County Weed Management Partnership to control noxious weeds and other invasive species in order to protect soil and other resource values.

4.5.6.3 Analysis of Alternatives

4.5.6.3.1 Effects Common to All Alternatives

Direct Effects

There are no direct effects common to all alternatives.

Indirect Effects

Energy and Minerals. There would be no effect on noxious weeds by locatable, leasable, and salable energy and mineral exploration and development in these areas that are closed by Congressional action or subject to the WSA IMP nonimpairment criteria under all the alternatives for the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, the Steens Mountain Wilderness, and WSAs. Together these areas cover 72 percent of the Planning Area.

Under all alternatives, areas open to minerals activities could have an increase in noxious weeds due to vehicle traffic that brings in weed seeds, surface disturbance that provides a place for the weeds to establish, and erosion and compaction at operations areas that kill existing plants and form an environment where hardy weeds outcompete native plant communities.

Only land with high mineral resource potential is likely to be subject to mineral exploration. Further, it is likely that only a portion of that area with high mineral potential could be economically mined and would therefore be proposed for development. In leasing activities, there would be no surface disturbance and no effect on noxious weeds under NSO leasing stipulations and reduced effects on noxious weeds under seasonal or other special leasing stipulations.

In surface disturbing exploration and development activities, noxious weeds could be reduced by mitigation measures such as cleaning vehicles of weed seeds prior to entry to the operations area, seeding surface disturbances, scarifying compacted ground, and monitoring and treating for weeds.

Visual Resources. Depending on the VRM class of a proposed development or project location, a project may require mitigation, redesign, or relocation. This could constrain any development or project. Each project would be analyzed on a case-by-case basis.

Wild Horses and Burros. Wild horse grazing in areas infested with noxious weeds could increase the distribution of noxious weeds by directly spreading seed or reproductive parts through hair, hooves, or fecal material. This effect would continue under all of the alternatives. Current AMLs and wild horse forage allocation levels would be maintained in all HMAs.

Wilderness Study Areas. Actions in WSAs would be limited to those that would be in compliance with the WSA IMP. This could constrain any proposed project. Each project would be analyzed on a case-by-case basis.

4.5.6.3.2 Alternative A

Direct Effects

The effect of implementing integrated management on noxious weeds should effectively eliminate the smaller, more easily eradicated infestations. Larger infestations would be very difficult to eradicate, but could be contained given enough of the most effective tools.

Existing drought conditions play a prominent role in the distribution and number of new infestations of noxious weeds. Invasive species typically tolerate and proliferate in conditions such as drought, while native plant species often could not compete with invasive plants for the necessary resources. Drought conditions may cause an increase in the number of new infestations and the growth rate of existing infestations.

Indirect Effects

Woodlands. Juniper management could have long-term effects on the rate and spread of noxious weeds by improving desired ground cover. BMPs should include requiring clean equipment, revegetation of treated sites and weed treatment and monitoring as appropriate for each site.

Rangelands. Rangeland vegetation diversity, plant cover and density would be maintained or increased, reducing the potential for noxious weed infestations and distribution. Prescribed fire and mechanical vegetation removal would be implemented to promote ecologically desirable traits such as a mosaic of successional stages in rangeland vegetation. These activities could result in short-term damage to vegetation, soil disturbance, soil compaction, erosion, and increased runoff. The application of BMPs, and restoration or rehabilitation of these areas could reduce these short-term effects, and potentially limit noxious weed establishment.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-eight percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for establishment of noxious weeds on that much area. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM

authorized officer, on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Grazing Management. Livestock grazing in areas infested with noxious weeds could increase the distribution of noxious weeds by directly spreading seeds or reproductive parts through hair, hooves, or fecal material. Managed livestock grazing can be a useful method to improve competitive vegetation and reduce noxious weed infestations.

Wildland Fire Management. Suppression of wildland fires could reduce the effects caused by noxious weed infestations by limiting the amount of vegetation and soil disturbance resulting from burns, thereby reducing the amount of area available to noxious weed infestations. Suppression activities could also increase the potential for noxious weed infestations by increasing disturbance when using roads and off-road access to fight fire. Other fire related activities include developing staging areas and fire camps in weed infested areas or by increasing disturbance activities that would disturb soils and remove vegetation, opening up disturbed sites to potential new infestations. Prescribed fire and vegetation manipulation projects could potentially reduce noxious weed infestations by using vegetation management practices and BMPs that reduce bare or disturbed soils. Seeding and rehabilitating areas after wildland and prescribed fire would reduce the chances of new noxious weed infestations by providing vegetation cover.

Transportation and Roads. Existing roads, particularly high use roads, would continue to affect vectors for noxious weed establishment in the Planning Area. Public education efforts could reduce the spread of noxious weeds by informing area users to stay on existing roads and ways and identifying and reporting infestations.

Off-Highway Vehicles. OHV and mechanized vehicle use could continue to contribute to the spread of noxious weeds in the areas designated as open, and along existing and designated routes.

Recreation. Recreation activities in the Planning Area would continue to be a factor in spreading noxious weeds. Vehicle use, saddle and pack stock use, and hiking could introduce noxious weeds from other areas by carrying and distributing seeds to campsites and along ways and roads. Public education efforts could reduce the frequency of noxious weed infestations by informing recreation users of the need to clean their vehicles and camping gear, to stay on existing roads and ways, and to avoid walking through areas infested with noxious weeds.

4.5.6.3.3 Alternative B

Direct Effects

Public education would be expanded to include the local area and areas outside Harney County, which could reduce the effects caused by noxious weed distribution. The reduction in effects may be realized in the form of observations and mechanical control of small infestations.

Inventories would be increased with emphasis on detecting new infestations, and to determine changes in distribution of known infestations, which could reduce the effects caused by noxious weeds if control efforts also increase. The change of priority to treat high quality resource lands for noxious weeds may allow for the establishment and spread of noxious weeds in other parts of the Planning Area. Limiting treatment of noxious weeds to only biological or mechanical methods means there would be no treatment of weed species or infestation situations that do not respond positively to those particular methods.

Indirect Effects

Woodlands. Juniper management could have long-term effects on establishment and rate of spread of noxious weeds, with the same effects as Alternative A, though lower in magnitude.

Rangelands. Allowing natural processes to determine vegetation species composition, successional stages, and reintroduction rate of native species on rangeland plant communities could allow for increased noxious weed infestations. Minimizing control options to influence desired vegetation trends could increase the distribution and rate of new infestations of noxious weeds. Manual and biological controls would not always be efficient or effective methods for controlling some noxious weed species, and would not effectively reduce the effects from such weed infestations.

Energy and Minerals. There would be no indirect effects on noxious weeds because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Grazing Management. The elimination of livestock grazing throughout the Planning Area would reduce disturbance and thereby reduce opportunities for establishment of new infestations of noxious weeds.

Wildland Fire Management. Fire suppression activities would be minimized, which would reduce the effects of ground disturbances and therefore result in a reduction in the establishment and potential spread of noxious weeds. Minimizing fire suppression activities could increase some noxious weed infestations that already exist in the Planning Area by reducing the opportunity for fire to burn those areas and rejuvenate competitive vegetation, and by reducing the number of acres that could be rehabilitated to prevent noxious weed infestations in the future. Prescribed fire and vegetation manipulation would have the same effects as under Alternative A.

Transportation and Roads. Road closures, both seasonal and permanent, would reduce the establishment and spread of noxious weeds. Limiting travel to designated roads would help reduce the spread of noxious weeds in areas where control would be difficult. Continued motorized vehicle travel on open routes would enable weeds to become established on those sites. Management priorities would shift from control treatments focused on roads and high use recreation areas to areas of high quality resource value, thereby increasing the opportunities for noxious weed introduction and spread along roadsides.

Off-Highway Vehicles. Maximizing the areas designated as closed to OHV and mechanized vehicle use, limiting the number of roads designated for use, and not allowing OHV or mechanized vehicle group events would greatly reduce the possibility for noxious weed establishment in those areas. The rate of noxious weed spread and number of new infestations would be greatly reduced by restricting OHV and mechanized vehicle use.

Recreation. Reduced recreation use associated with area and site closures, lack of new recreational facilities, and limits on visitor use and group size would reduce noxious weed spread and establishment. Minimal management of recreation use could increase the distribution of noxious weeds in previously infested areas. Closing and rehabilitating undeveloped sites and other sites where natural processes are being jeopardized would reduce noxious weed distribution and limit new infestations.

4.5.6.3.4 Alternative C

Direct Effects

The direct effects of noxious weed actions would be the same as Alternative B.

Indirect Effects

Woodlands. The effects of Juniper removal and prescribed fire would be the same as Alternative A, with the same effects.

Rangelands. Native rangeland plant communities would be maintained or improved, with emphasis toward attaining ecological status. Rangeland community plant cover and density would be maintained or increased, thereby reducing the potential for noxious weed introduction and spread.

Desirable nonnative seeding would be managed to maintain or improve vegetation composition, and opportunities to restore areas with unsuccessful nonnative seedings would be implemented. Many of the seedings of crested wheatgrass that have become infested with cheatgrass or medusahead could be restored to desired vegetation cover, reducing noxious and invasive plant species.

Prescribed fire and mechanical vegetation removal would be implemented to promote ecologically desirable traits such as a mosaic of successional stages in rangeland vegetation. This would have the same effects as Alternative A.

Energy and Minerals. See Effects Common to All Alternatives. Under this alternative, 13 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development with potential for establishment of noxious weeds on that much area. Locatable minerals activity would be most likely on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 43 acres in the Planning Area that have high potential for leasable minerals and that would be open; they would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 13 percent of the Planning Area that is open. As determined

by the BLM Authorized Officer, on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Grazing Management. The effects of livestock management on the distribution and new infestations of noxious weeds would be similar to Alternative A, with emphasis on nonconsumptive uses while providing for minimal grazing. The spread and effect of noxious weeds would be reduced where disturbance would be reduced due to a lower level of livestock grazing than under Alternative A.

Wildland Fire Management. Noxious weed management would have the same effects as Alternative B for fire suppression and prescribed fire; however, there would be an increased emphasis on rehabilitation and restoration of burn areas, thereby decreasing the effects of noxious weed infestations in the long term.

Transportation and Roads. The effects of noxious weed infestation from roads on other resources would be similar to Alternative B; however, more emphasis on control and restoration of noxious weed sites would reduce the negative effects.

Off-Highway Vehicles. Minimizing OHV and mechanized vehicle use would reduce the spread of noxious weeds, thereby limiting the effects of weeds in areas designated as limited to roads and ways.

Recreation. Recreation use in the Planning Area would continue to spread noxious weeds, thereby affecting other resource values. Control of noxious weeds would continue in high recreation use areas and could reduce the effects by controlling the spread to other areas. Although some recreational development would occur under this alternative, creating more potential for noxious weeds to become established, this alternative emphasizes the protection of natural and cultural values. Closure or rehabilitation of dispersed sites would reduce noxious weed spread by actively treating infested areas. Public education efforts could reduce the effects of noxious weeds by informing recreation users to stay on existing roads and ways and to avoid traveling through noxious weeds infestations.

4.5.6.3.5 Proposed RMP

Direct Effects

Cooperative management with federal, state, county, and private interests would be applied for the management of noxious weeds. The Harney County Weed Management Partnership would continue to be implemented. Public education would be expanded to include areas outside Harney County. Coordination with local, county, state, and federal interests would help to reduce negative effects on resource values from noxious weed infestations through cooperative management and information sharing activities.

Cooperative activities would emphasize prevention, restoration, research, and expanded efforts to inventory and detect new infestations. Control of the introduction and proliferation of noxious weeds would be emphasized on disturbed areas such as roads, ROWs, mineral materials sites, and recreation sites. BMPs would be implemented to emphasize preventive measures to minimize weed spread.

Noxious weed infestation would continue to have an effect on vegetation resources, including riparian, rangeland, and woodlands (e.g., aspen and juniper) plant communities, and control would be emphasized across the entire Planning Area.

Indirect Effects

Woodlands. Juniper removal and prescribed fire would be the same as under Alternative A, with the same effects.

Rangelands. Native rangeland plant communities would be maintained or improved with the same effects as Alternative C.

Desirable nonnative seeding would be managed to maintain or improve vegetation composition. Opportunities to restore areas having unsuccessful nonnative seedings would be the same as under Alternative C, with the same effects.

Prescribed fire and mechanical vegetation removal would be implemented to promote ecologically desirable traits such as a mosaic of successional stages in rangeland vegetation and would have the same effects as Alternative A.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-seven percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for establishment of noxious weeds on that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative; 281of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open. As determined by the BLM authorized officer, on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Grazing Management. Livestock grazing would have the same effects on noxious weed distribution as Alternative A; however, emphasis for management would be for nonconsumptive uses and multiple resource management, which may decrease the magnitude of effects.

Wildland Fire Management. Fire suppression of wildland fires would reduce the effects on other resources caused by noxious weed infestations the same as Alternative A. More emphasis would be implemented to harvesting byproducts from fuel treatments, which could increase the spread of noxious weeds by increased level of ground disturbance.

Transportation and Roads. Existing roads, particularly the high use roads, would continue to be vectors for weed introduction, affecting soil and vegetation resources. Under this alternative, noxious weed inventory and treatment would be a high priority consideration for road maintenance; therefore, road maintenance and noxious weed control treatments could likely reduce the effects caused by the distribution and new infestations of noxious weeds. New road development could increase the effects caused by noxious weeds.

Off-Highway Vehicles. OHV and mechanized vehicle use would continue to contribute to the spread of noxious weeds on 25,285 acres designated as open; and 1,451,685 acres designated as limited to designated roads and ways. More acres of land in the Planning Area would be designated as closed to OHV and mechanized vehicle use than under Alternative A, and less than Alternative B. Cooperative management with OHV and mechanized vehicle clubs would be sought, and group events would be allowed. Opportunities to reduce noxious weed infestations and the effects to other resources would be sought through educational efforts with cooperators as well as increased inventory, treatment, and monitoring.

Recreation. Recreation management in the Planning Area would emphasize maintenance of existing improvements, establishment of new recreation sites to accommodate increased demand, and allowing tourism opportunities, which could potentially increase the spread of noxious weeds to new areas. Control of noxious weeds would continue in high recreation use areas and in newly developed recreational sites. Public education efforts could reduce effects of noxious weeds by informing recreation users to stay on existing roads and ways and to avoid traveling through noxious weeds infestations.

4.5.6.3.6 Alternative E

Direct Effects

Integrated management would be applied for the control of noxious weeds the same as the Proposed RMP. Inventories would be increased to detect new infestations that may have adverse effects on commodity reserves. Control of introduction and proliferation of noxious weeds would be emphasized on disturbed areas such as roads, ROWs, mineral material sites, and recreation sites.

The distribution of noxious weeds and the effects on other resources in the Planning Area, as well as the implementation of BMPs, would be the same as under Alternative A. Noxious weed infestation would continue to affect vegetation resources, including riparian, rangeland, and forest (e.g., aspen and juniper) plant communities; control would be emphasized to protect commodity resources. Management emphasis for the control/treatment of noxious weeds from natural resource areas to commodity protection would potentially have an adverse effect if the high quality natural resource areas become neglected.

Indirect Effects

Woodlands. Juniper removal and prescribed fire would be the same as under Alternative A, though effects may be greater with an emphasis on commodity production.

Rangelands. Native rangeland plant communities would be maintained or improved, the same as Alternative A, with greater effects due to the emphasis on commodity uses.

Desirable nonnative seeding would be managed to maintain vegetation composition and increase forage. Many of the seedings of crested wheatgrass infested with noxious weeds and other invasive species would be rehabilitated, which would reduce weeds and additional invasive plant infestations.

Prescribed fire and mechanical vegetation removal would be implemented to promote commodity uses in rangeland vegetation. These activities would result in short-term damage to vegetation, soil disturbance, compaction, erosion, and runoff. The application of BMPs and restoration or rehabilitation of these areas could reduce these short-term effects and prevent noxious weed infestations. Long-term effects of these vegetation manipulation practices in vegetation communities would reduce undesirable dominant woody vegetation and release desirable plant species, increasing native plant diversity and community structure and preventing infestations of noxious weeds and other invasive species.

Energy and Minerals. Minerals management would be conducted the same as under Alternative A; therefore, the indirect effects on noxious weeds would be the same as Alternative A.

Grazing Management. Maximizing livestock grazing could have a greater effect on other resources by potentially creating more livestock related disturbance, providing additional opportunities for new introductions of noxious weeds than under the other alternatives. Additional ground disturbances caused by increased rangeland projects and maximizing livestock use in weed infested areas and throughout the Planning Area would increase effects of noxious weeds and other invasive plant infestations on soils, biological soil crusts, and vegetative diversity. Noxious weed inventory, treatment, and monitoring would be stepped up in areas of heavy livestock use.

Wildland Fire Management. Suppression of wildland fires and prescribed fire would reduce the effects to other resources caused by noxious weed infestations the same as under Alternative A. More emphasis would be placed on harvesting byproducts from fuel treatments, which could increase the spread of noxious weeds through an increase in the level of ground disturbance.

Transportation and Roads. Existing roads and newly developed roads to maximize commodity uses would affect soil and vegetation resources, resulting in an increase of noxious weed introductions to the area. Noxious weed control would be a priority under this alternative for management of road maintenance as in the Proposed RMP. New road development would increase the potential adverse effects to other resources resulting from noxious weed infestations.

Off-Highway Vehicles. OHV and mechanized vehicle use would contribute to the spread of noxious weeds because most of the AMU would be open to OHV and mechanized vehicle use. Designating 683,968 acres as open; 535,666 acres as limited to existing roads and ways; and 257,454 acres as limited to designated roads and ways would increase the potential spread of noxious weeds and other invasive plant species. Organized OHV and mechanical vehicle events would be encouraged, increasing the potential introduction and spread of noxious weeds. Opportunities to reduce the noxious weed infestations would be sought through educational efforts with cooperators. Noxious weed inventory, treatment, and monitoring would be increased in areas of heavy OHV and mechanized vehicle use.

Recreation. Recreation management in the Planning Area would emphasize improvement of existing developed sites, establishment of new recreation sites, and tourism opportunities, which could spread noxious weeds to new areas. The need to control noxious weeds would be important in high use recreation areas and newly developed recreational sites. The potential would be greatest for new noxious weed infestations and expansion of existing infestations throughout the Planning Area. Noxious weed inventory, treatment, and monitoring would be increased in heavy recreation use areas.

4.5.6.4 Summary of Effects

Under all alternatives, the introduction and spread of noxious weeds would continue. Any resource activity or management action resulting in ground disturbances would increase the chances for weed introduction and spread. The different management emphasis under each alternative would determine the degree to which the introduction and spread of weeds would be controlled.

Under Alternative A, weeds would continue to invade from areas outside the Planning Area, although the size and number of existing infestations would decrease with continued treatment.

The effects of noxious weeds on other resources under Alternative B would be mixed. The exclusion of permitted uses and commodity production would decrease weed introductions and establishment. Increased distribution of current weed infestations could result from the following: lack of emphasis on treating areas that would not be considered high resource value; lack of restoration; prescribed fire; and potential increases in catastrophic wildland fire with less rehabilitation.

Under Alternative C, increased inventory, control, and education efforts could decrease the spread of noxious weeds. The limitations on commodity and recreation uses would decrease new introductions of noxious weeds.

Under the Proposed RMP, the effect of noxious weeds would be mixed. While an increase in commodity and recreation uses would increase new weed introductions and potentially spread those already existing, the emphasis for increases in inventory, control, and education efforts would decrease the spread of noxious weeds overall.

Under Alternative E, weed introduction and establishment could occur due to increased commodity production, recreation uses, and developments that would attract people and equipment to the Planning Area. Such activity could introduce weeds to the area or spread existing infestations.

4.5.6.5 Cumulative Effects

Eighteen noxious weed species have been identified in the Planning Area to date. The introduction and proliferation of these weeds is the result of past and present activities. The introduction of noxious weeds would be likely to continue for the foreseeable future under all the management alternatives. The current weed management program, which includes public education and work with the Harney County Weed Management Partnership, minimizes weed introductions to the Planning Area from outside sources, and thus minimizes cumulative effects to noxious weeds. This program would continue under all of the alternatives; however, weed management strategies that target treatment and control in certain areas rather than the entire Planning Area, such as under Alternative B, may result in varying levels of cumulative effects. In addition, impacts to other resources, such as soils, and disturbance of vegetation associated with increased recreation and commodity use specified under Alternative E, may also result in varying levels of cumulative effects.

Indirect cumulative effects of noxious weed infestations may include habitat conversion or loss of vegetation and wildlife species. Riparian/wetland habitats would also be at risk for noxious weed establishment. Biological soil crusts and soil productivity could be lost. Such cumulative effects could occur on a watershed scale as a result of untended weed introductions and habitat conversion.

An integrated approach to the problem that includes prevention strategies, inventory, early detection, multiple tools for control, research to determine the most effective and efficient strategies, and followup monitoring, would enable effective noxious weed management throughout the Planning Area and minimize the direct and indirect cumulative effects of the management actions.

4.6 Fish and Wildlife

4.6.1 Fish and Aquatic Habitat

4.6.1.1 Goal and Objective

Goal - Provide diverse, structured, resilient, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms.

Objective. Maintain, restore or improve habitat.

4.6.1.2 Assumptions

The ODFW or the USFWS or both, retain jurisdiction over the management of fish and wildlife populations. Maintenance, restoration or improvement of habitat for fish and other aquatic organisms on public lands would be primarily associated with the management of water and riparian vegetation resources. Salmonid and resident fish habitat would be a designated beneficial use in the Planning Area and would be subject to water quality criteria established by the state. Nonpoint source pollution, such as elevated water temperature and sediment input, would be the primary water quality issue regarding public land management.

Most fish species found in the Planning Area require relatively cool, clean water to provide sufficient oxygen and gravel substrates that would be relatively free of fine sediment for spawning. Other aquatic organisms, such as aquatic macroinvertebrates, also require living spaces in gravel and cobble that would be relatively free of fine sediment. Management actions designed to maintain and restore water quality would assist in maintaining and restoring fish and aquatic habitat. Refer to the Water Resources section of this document for analysis of the effects of management actions on water quality, especially sediment and water temperature.

As with water resources, fish and aquatic habitat would be dependent on the condition of resources throughout the watershed, including soils, upland vegetation, and especially riparian vegetation. Maintenance or restoration of both water resources and fish habitat would be primarily attained through maintaining or improving the condition of riparian and upland vegetation and soils. Management actions to achieve this end would be found in the Water Resources, Soils, and Vegetation sections of this document.

In the Water Resources section, management actions would be reviewed for their effects on water temperature and sediment supplied to water bodies. Temperature and sediment effects occur through changes to riparian and upland vegetation and soils. These changes in vegetation and soils have very similar effects on physical fish habitat as follows:

- Increased riparian vegetation density tends to affect the water resource by reducing erosion, sedimentation, and stream temperature; improving streambank stability; and providing cover for fish in the form of undercut banks and overhanging vegetation.

- Increased riparian vegetation density and structure tends to improve channel function, by stabilizing streambanks, resulting in increased pool density and quality, and increased habitat complexity, all important components of fish and aquatic organism habitat.

- Increased floodplain vegetation density and increased stability of soil on floodplains improve the ability of the floodplain and channel to resist erosion during floods, thereby maintaining physical fish and aquatic organism habitat.

- Increased floodplain vegetation density and increased stability of soil on floodplains increases the ability of the floodplain to store ground water during wet periods. This additional water can be released to the channel during dry periods, resulting in increased flow that benefits fish and other aquatic life during low flow periods.

- Increased riparian and floodplain vegetation density tends to improve the condition of stream gravel and cobble substrate, thereby reducing fine sediment. This allows higher production in aquatic insect and other stream invertebrate communities. Also, reductions in fine sediment in gravel substrate improve fish spawning success, by reducing erosion and promoting functional channel geomorphic processes.

Due to this strong link between water resources and fish habitat, mediated by the influence of vegetation and soil on both resources, the effects of management actions on water resources would be very similar to effects on fish habitat. Since water quality would be affected by sediment and temperature, these factors would be analyzed in the Water Resources section of this document. This section emphasizes other effects on fish habitat, such as changes in physical habitat structure or direct perturbations of aquatic animals.

Habitat improvement through the implementation of physical structures or channel manipulation would be analyzed at the activity plan level and respective NEPA requirements.

Most of the perennial streams on public lands within the Planning Area and available habitat for fish and other aquatic species are located within the Steens Mountain Wilderness and designated WSR segments. Management requirements of these areas include "nondegradation" and "protect and enhance ORVs." ORVs include fish habitat and riparian vegetation. These requirements imply managing riparian and stream habitat to maintain or progress toward an advanced ecological status. The interrelated nature of riparian condition to channel stability and complexity, and subsequently aquatic habitat, would facilitate maintaining or restoring fish and aquatic habitat within these areas regardless of resource-specific management actions.

4.6.1.3 Analysis of Alternatives

4.6.1.3.1 Effects Common to All Alternatives

Direct Effects

Aquatic habitat would be formed and maintained by physical processes operating throughout the watershed, especially in riparian vegetation communities. The maintenance, restoration, or improvement of fish and aquatic habitat would, therefore, be primarily accomplished through management actions under Water Resources, Vegetation, and in some cases, the Special Status Species sections.

Fences within the No Livestock Grazing Area would be removed unless identified as necessary, such as maintaining an HMA boundary. This would remove many fences within the No Livestock Grazing Area that pose a hazard to wildlife.

Indirect Effects

Water Resources. As described in the Water Resources section, BMPs would be prescribed and implemented at the activity plan level to reasonably prevent degradation of water quality. The prevention and reduction of erosion and sediment introduction to water bodies would maintain and restore fish habitat by reducing fine sediment levels in gravel and cobble substrate, thereby increasing invertebrate production and improving spawning success. Increasing riparian vegetation density and structure would increase overhanging cover available to fish, and would also increase the occurrence of undercut banks. Stream channels would be stabilized, increasing habitat complexity and the quality of pools.

BMPs would also be directed toward management practices to facilitate maintenance or improvement of attributes identified through PFC assessment, such as channel geometry or vegetation characteristics. By stabilizing streambanks and increasing vegetation, BMPs designed to reduce channel width-to-depth ratios would tend to increase shade and reduce stream temperature, as well as provide additional overhanging cover. Increases in the density and coverage of riparian vegetation would stabilize streambanks, shorelines and floodplains, resulting in reduced erosion and amount of sediment reaching water bodies. Increased riparian vegetation density would also lead to greater canopy cover, thereby increasing shade and buffering stream temperature.

Waters identified on the 303(d) list would be evaluated to validate impairment or improvement following the listing and where required, WQRPs or other sufficiently stringent measures would be developed to restore water quality. Although the primary objective of WQRPs would be to address the limiting water quality condition such as temperature, this objective would be realized by maintaining or restoring characteristics of riparian and floodplain vegetation communities. These actions would also tend to improve fish habitat characteristics (e.g., increased cover, pool quality, substrate quality, etc.).

Riparian and Wetlands. Prescriptions at the activity plan level would be implemented or continued to manage riparian/wetland vegetation to maintain or progress toward PFC. While vegetation communities in PFC would not be necessarily at site potential or ecological potential, PFC represents a condition where potential erosion, sediment production, and associated effects would be reduced. In streams not currently at PFC, management direction to maintain or progress toward PFC would likely increase the density and coverage of riparian vegetation. This action would stabilize streambanks and floodplains, reducing erosion and sediment delivery to water bodies, thereby reducing fine sediment in gravel and cobble substrates. Increased density of riparian vegetation may also result in greater canopy cover and may narrow stream channels, reducing stream temperature and providing cover. In streams currently at PFC, this management action would promote maintenance of PFC and facilitate managing for site/reach specific values such as fish and aquatic habitat.

Reach/site scale riparian vegetation, hydrology, morphology and soil characteristics (subsamples) would be assessed to evaluate site potential and capability in the development of activity level plans. Some aspects of fish habitat, such as overhanging cover or pool-riffle complexity, may be improved with riparian communities in or approaching potential ecological condition beyond the base condition level of PFC. This assessment would therefore assist in developing prescriptions for riparian communities to improve fish habitat, such as grazing practices designed to promote stream functional attributes that contribute to habitat complexity.

BMPs would be prescribed and implemented at the activity plan level to maintain, restore, or improve floodplain function and process across all alternatives. These BMPs may include active or passive measures to manage livestock grazing

and recreation use in riparian areas. Functioning floodplains store ground water during wet periods and release it slowly to adjacent streams during drier months, providing additional water for fish during low flow periods. Functioning floodplains tend to promote stream channel stability, which increases habitat complexity and the quantity and quality of pools.

Noxious Weeds. Noxious weed prevention and control would continue to be a priority in all alternatives. Noxious weed invasion of native plant communities, including riparian vegetation, results in degraded plant community structure, cover, composition, and diversity. Streambanks may become less stable, or recovery from disturbance may be slower. Fish and aquatic habitat effects include increased sedimentation in gravel and cobble, reduction in cover for fish, and increased temperature. The priority on noxious weed prevention and control would reduce these effects.

Effects to aquatic organisms through the potential introduction of chemicals into water would be assumed to be minimized or avoided through appropriate application techniques according to label restrictions and BLM guidance.

Visual Resources. Depending on the VRM class where a proposed project or development is located, mitigation, redesign, or relocation may be required. This could constrain any development or project. Each project would be analyzed on a case-by-case basis.

Energy and Minerals. There would be no effects on fish and aquatic resources by locatable, leasable, and salable energy and mineral exploration and development in these areas that are closed by Congressional action or subject to the WSA IMP nonimpairment criteria under all the alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, Steens Mountain Wilderness, and WSAs, which together cover 72 percent of the Planning Area. It is likely that only land with high mineral resource potential would be subject to mineral exploration. Further, it is likely that only a portion of that area with high mineral potential could be economically mined or would be proposed for development. In leasing activities, there would be no surface disturbance and no effects on fish and aquatic resources under NSO leasing stipulations and reduced effects on fish and aquatic resources under seasonal or other special leasing stipulations.

Under all alternatives except Alternative B, open minerals areas could have effects on fish and aquatic resources including loss of habitat or displacement due to sediment production, noise, physical presence, and surface disturbance. In surface disturbing exploration and development activities, fish and aquatic resources could be protected by mitigation measures such as these: seasonal restrictions on minerals activities, locating access routes away from fish and aquatic resources, and reclamation of disturbed areas.

Grazing Management. Whenever existing grazing management practices on public land would be determined to be contributing to nonattainment of resource objectives, appropriate actions would be implemented to meet habitat and other resource objectives (e.g., increases in riparian vegetation density and structure, reduced erosion, increased streambank stability).

Where grazing occurs along perennial or intermittent streams, physical effects to aquatic habitat may include bank disturbance from hoof action and subsequent reduction of cover and channel complexity. This would be anticipated to be a localized effect, and would be minimized or avoided through grazing management BMPs. Where grazing use occurs during salmonid spawning, livestock could disturb eggs or pre-emergent juveniles through trampling of redds (the spawning area of trout or salmon). However, early season grazing management (spring/early summer) during the salmonid spawning period tends to reduce livestock presence along the stream, thereby reducing the likelihood of effects to salmonid spawning sites. Areas burned by wildland or prescribed fire would be rested for a minimum of two growing seasons, or until monitoring data support resumption of grazing. This would allow increased vegetation density, and would reduce erosion and sediment delivery to water bodies, thereby reducing fine sediment in gravel and cobble substrates.

Special Status Species. Goals and objectives for the management of special status species promote the objectives for fish and aquatic habitat. The management of special status species habitat for conservation and recovery, primarily realized through improvements in the riparian vegetation community, would lead to increases in available cover and habitat complexity in water bodies where redband trout and other special status aquatic species were found.

Off-Highway Vehicles. The effects of OHV and mechanized vehicle designations to fish habitats are discussed in Water Resources (Section 4.3.3) and Riparian and Wetlands Vegetation (Section 4.5.1).

Recreation. The effects of recreation to fish habitats are discussed in Water Resources (Section 4.3.3) and Riparian and Wetlands Vegetation (Section 4.5.1).

Wilderness Study Areas. Actions in WSAs would be limited to those that would be in compliance with the WSA IMP. This could constrain any proposed project in a WSA. Each project would be analyzed on a case-by-case basis.

Wilderness. Actions in Steens Mountain Wilderness would be limited to those that would be in compliance with the Steens Act, the Wilderness Act, and BLM wilderness management regulations and directives. This could constrain any proposed project in the Steens Mountain Wilderness. Each project would be analyzed through the use of MRDG.

4.6.1.3.2 Alternative A

Indirect Effects

Water Resources. Current management with respect to impaired waters would continue, with management of riparian and adjacent uplands based on site or reach management objectives. Management would be modified where necessary with development and implementation of WQRPs and associated activity plans. The development of WQRPs would be based on the TMDL schedule established by the DEQ, with completion planned for 2007. Fish and aquatic habitat improvements would be expected through the development and implementation of WQRPs as riparian vegetation would be restored and channel and floodplain function improves.

Riparian and Wetlands. Activity plan level management prescriptions or WQRP prescriptions would be developed based on reach or site scale assessment, and on site specific resource management objectives. Management would not be guided by prioritization across the Planning Area, but site specific management objectives with respect to water quality, and therefore fish habitat, would be developed and implemented through other scheduled assessments or activity planning processes.

Existing grazing and recreation systems and improvements to maintain PFC would continue. Outside of areas affected by WQRPs or other special planning requirements (e.g., WSRs), riparian/wetland areas would not necessarily be managed to attain advanced ecological status; however, management to maintain or promote PFC may also promote advanced ecological status in many areas. In some locations, vegetation communities in PFC may not provide as much shade or resistance to erosion as communities in advanced ecological status. Fish habitat may be less complex, and less cover may be available in areas managed solely for PFC.

Sources of localized tree and shrub source material for restoration would continue to be established and maintained. These sources would assist in restoring riparian vegetation. Restoration of riparian vegetation in disturbed areas may increase streambank stability, the amount of cover available to fish, and aquatic habitat complexity.

Roads within or affecting riparian areas would be maintained and developed in conformance with existing laws and regulations. Although BMPs would be applied to minimize or eliminate the effects of roads, the development and management of roads would be based on all resource management objectives. Where roads disturb riparian vegetation, streambank instability or stream channel changes may cause reductions in aquatic habitat complexity and available cover.

Beaver populations would be allowed to expand naturally under this alternative. Beaver expansion into riparian and wetland areas where riparian vegetation condition could not sustain increased utilization by beaver populations could result in reduced bank stability and shade, and subsequent increases in sediment input and water temperature. Abandoned beaver dams could wash out, resulting in reduced channel stability and increased sediment load, as well as reduced aquatic habitat complexity and quality at the site or stream reach scale. Beaver expansion into riparian communities where condition allows increased and sustainable vegetation use could result in riparian vegetation expansion and increased in-channel, streambank, and floodplain water storage. Such water storage would moderate summer stream temperatures and trap sediment, thus increasing the complexity of aquatic habitat. Beaver dams could also impede fish migration, particularly during low flow periods.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-eight percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on fish and aquatic resources on that much area. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative. Salable minerals activity could be proposed

anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

4.6.1.3.3 Alternative B

Indirect Effects

Water Resources. An assessment component would be added under this alternative to identify and manage stream reaches or sites that provide cold-water habitat in streams where temperature seasonally limits the distribution of cold-water fish species. These cold-water areas serve as refuges for fish and other cold-water aquatic organisms within streams when temperatures in other areas may be too high. Active identification, assessment, and management of these areas would promote habitat protection, maintenance, or restoration for cold-water organisms.

All perennial streams and contributing intermittent streams would be managed for an advanced ecological status. This would emphasize management for riparian resource values such as riparian density, structure, and cover. Improvements in these attributes would provide for maintenance or improvement of cover and complexity in aquatic habitat.

Under this alternative, the development of WQRPs would be generally guided by stream/watershed prioritization (Table 2.3.1) along with consideration of new circumstances or emerging opportunities. A primary criterion in prioritization would be the presence of special status aquatic organisms, including fish. Prioritization of assessment and activity development would promote maintenance, restoration, or improvement of aquatic habitat for fish and other aquatic organisms.

Riparian and Wetlands. Activity plan management prescriptions or WQRP prescriptions promoting maintenance or restoration of riparian conditions would be developed similar to Alternative A, but would be guided by stream/watershed prioritization. Criteria for prioritization would include the presence of special status aquatic organisms or species of concern, which would promote habitat maintenance or restoration for these organisms.

An advanced ecological status would be promoted, which could result in increased density and structure in the riparian community. These changes in the riparian community could result in increased aquatic cover and habitat complexity.

Similar to Alternative A, the establishment of sources of localized tree and shrub source material for restoration would assist in restoring riparian vegetation. However, restoration actions would be limited to areas that would not achieve advanced ecological status in the 20 to 50 year timeframe. In other areas where restoration of habitat would be required, restoration would take place more slowly.

Roads within or affecting riparian areas would be inventoried, and alternate routes that affect riparian areas would be eliminated, relocated or reconstructed. Natural recovery of roads would be allowed in areas where erosion potential would be low and recovery potential would be high; active restoration of roads would be pursued in other areas. All of these actions related to roads would decrease disturbances to riparian and wetland vegetation and soils, and maintain or restore aquatic habitat. Road crossings would be evaluated and modified, as necessary, to simulate natural stream function and processes. This action would prevent roads and associated culverts from acting as barriers to migrations of fish or other aquatic organisms.

Beaver populations would be managed as in Alternative A, with the same effects.

Energy and Minerals. There would be no indirect effects on fish and aquatic resources because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

4.6.1.3.4 Alternative C

Indirect Effects

Water Resources. As in Alternative B, BMPs would be prescribed and implemented, with an assessment component added to identify and manage stream reaches or sites that provide cold-water habitat in streams where temperature seasonally limits the distribution of cold-water fish species, with the same effects.

As in Alternative B, perennial streams and contributing intermittent streams would be managed to progress toward advanced ecological status, with the same effects.

As in Alternative B, WQRPs would be generally guided by stream/watershed prioritization (Table 2.3.1), with the same effects. However, active restoration may be pursued to initiate or increase the rate of progress toward an advanced ecological status. In disturbed or degraded areas, where natural rates of recovery may be slow, this action would increase vegetative cover and improve riparian community structure, increasing cover and habitat complexity for aquatic organisms.

Riparian and Wetlands. As in Alternative B, activity plan management prescriptions or WQRP prescriptions promoting maintenance or restoration of riparian conditions would be developed; they would be guided by stream/watershed prioritization, with the same effects.

This alternative would direct management of existing grazing systems and improvements to maintain PFC, and would promote an advanced ecological status, with the same effects. In addition to Alternative B, both active and passive management and restoration of vegetation may be pursued. Some vegetation communities currently in degraded condition would develop coverage and structure more quickly under this alternative than under Alternative A or B, thereby reducing erosion and stream temperature.

The establishment of sources of localized tree and shrub source material for restoration would be the same as for Alternative A, with the same effects.

Management of roads within or affecting riparian areas would be the same as in Alternative B, with the same effects.

Beaver populations would be allowed to expand naturally as in Alternatives A and B, with the same effects. In addition, beaver would be reintroduced into suitable habitat. Since reintroduction areas would have suitable habitat for beaver, increases in vegetative utilization would be sustainable. The effects of reintroduction would therefore tend to include expansion of riparian vegetation, improved streambank stability, and increased cover and habitat complexity.

Energy and Minerals. See Effects Common to All Alternatives. Under this alternative, 13 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development with potential for effects on fish and aquatic resources on that much area. Locatable minerals activity would be most likely on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 43 acres in the Planning Area that have high potential for leasable minerals and that would be open. These acres would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 13 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

4.6.1.3.5 Proposed RMP

Indirect Effects

Water Resources. As in Alternatives B and C, BMPs would be prescribed and implemented. An assessment component would be added to identify and manage stream reaches or sites that provide cold-water habitat in streams where temperature seasonally limits the distribution of cold-water fish species, with the same effects.

All perennial waters and contributing intermittent streams identified on the 303(d) list as water quality limited would be managed toward an appropriate ecological status to attain or progress toward attainment of water quality standards or other surrogate measures, with effects to fish and aquatic species similar to Alternatives B and C.

WQRPs would be generally guided by stream/watershed prioritization (Table 2.3.1) along with consideration of new circumstances or cooperative management opportunities. However, priorities for development of WQRPs would also be based on cooperative management opportunities. Effects would be similar to Alternative C.

As in Alternative C, active restoration may be pursued to initiate or increase the rate of progress toward a desired ecological status, with similar effects.

Riparian and Wetlands. As in Alternatives B and C, activity plan management prescriptions or WQRP prescriptions promoting maintenance or restoration of riparian conditions would be developed and would be guided by stream/watershed prioritization, with the same effects.

This alternative would direct management of existing grazing systems and improvements to maintain PFC and would promote an ecological status dependent on meeting multiple resource objectives. Effects would be similar to Alternative A. Similar to Alternatives B and C, both active and passive management and restoration of vegetation may be pursued, with similar effects.

The establishment of sources of localized tree and shrub source material for restoration would be the same as in Alternative C, with the same effects.

Management of roads within or affecting riparian areas would be similar to Alternatives B and C, with the same effects.

Beaver populations would be managed as in Alternative C. However, this alternative would allow for the removal of beaver if suitable habitat would not be available or if economic harm can be demonstrated. In some areas where natural expansion of beaver into unsuitable riparian habitat occurs (i.e., habitat that would be incapable of sustaining increased utilization), removal of beaver could result in increased riparian vegetation density and consequent improvements in aquatic habitat. In some areas where natural expansion of beaver into suitable riparian habitat occurs (i.e., habitat capable of sustaining increased utilization) but beaver would be removed to reduce economic harm, improvements to riparian vegetation and aquatic habitat associated with beaver would not occur.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-seven percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effect on fish and aquatic resources on that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative; 281of those acres would be open for leasing with seasonal or other special stipulations, and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

4.6.1.3.6 Alternative E

Indirect Effects

Water Resources. As in Alternative A, BMPs would be prescribed and implemented to facilitate maintenance or improvement of attributes identified in PFC assessment, and management would consider refuges important to cold-water aquatic organisms as delineated by the state. Effects would be the same as Alternative A.

Similar to Alternative A, riparian areas and adjacent uplands of 303(d) listed water bodies would be managed according to site or reach management objectives. However, development and implementation of WQRPs would be guided by stream/watershed prioritization as in the Proposed RMP and Alternatives B and C, with the same effects.

Riparian and Wetlands. As in Alternative B, activity plan management prescriptions or WQRP prescriptions promoting maintenance or restoration of riparian conditions would be developed; they would be guided by stream/watershed prioritization, with the same effects.

Grazing and recreation management would be implemented to provide maximum use while maintaining or progressing toward PFC or WQRP objectives. Effects would be similar to Alternative A.

The establishment of sources of localized tree and shrub source material for restoration would be similar to the Proposed RMP and Alternative C, with the same effects.

Management of roads within or affecting riparian areas would be similar to that in Alternative A, with the same effects.

As in Alternative A, beaver populations would be allowed to expand naturally as habitat conditions indicate, unless suitable habitat would not be available or economic harm would be demonstrated, with the same effects. As in the Proposed RMP, the removal of beaver would be allowed if suitable habitat would not be available or if economic harm can be demonstrated, with the same effects.

Energy and Minerals. Minerals management would be conducted the same as under Alternative A; therefore, the indirect effects on fish and aquatic resources would be the same as Alternative A.

4.6.1.4 Summary of Effects

Under all alternatives, the management of waters on the 303(d) list would require the eventual development of WQRPs, which would be directed toward maintaining or restoring riparian vegetation density, coverage, and structure, with associated increase in aquatic habitat complexity. Many of the perennial waters in the Planning Area are found within areas with wilderness or WSR designation, both of which promote management for maintaining, improving, or restoring aquatic habitat values.

Under all Alternatives except A, the development of WQRPs would be prioritized based on the sensitivity of aquatic species present, as well as identified needs, risks, and opportunities to maintain or improve habitat. This action would allow for identification of areas that would benefit most from restoration, thus providing the greatest benefit to aquatic species and habitat.

Cold-water refuges, an important component of aquatic habitat, would be actively identified and protected by BLM management under the Proposed RMP and Alternatives B and C.

Under Alternatives A and E, riparian and wetland community management would generally be directed toward attaining and maintaining PFC in areas where other management requirements, such as WQRPs or WSR designations, do not apply. Management for PFC would maintain or restore aquatic habitat by reducing or minimizing sediment inputs. However, the lack of emphasis under this alternative on attaining objective-specific ecological status may not provide for increased cover and habitat complexity as under the Proposed RMP, Alternatives B, and C.

Active restoration of riparian areas may be pursued to some extent under all Alternatives, although Alternative B has greater limitations. In areas where riparian vegetation is currently degraded, Alternative B may not allow for restoration during the life of this Plan.

Roads in riparian areas would be inventoried under the Proposed RMP and Alternatives B and C, and some roads may be modified or recontoured and revegetated. This action would improve aquatic habitat by removing potential barriers to migration of aquatic animals where roads cross streams. Under Alternatives B and C, road crossings would be modified to simulate natural stream processes and function. This action would improve migration characteristics with respect to the Proposed RMP, where crossings would be modified to reduce erosion. However, fish passage would be addressed through project specific analysis under the Proposed RMP, as well.

Under Alternatives A and B, beaver populations would be allowed to expand naturally. In some instances, beaver expansion may conflict with other objectives, such as riparian restoration, or may cause short-term increases in erosion. Under the Proposed RMP, Alternatives C, and E, expansion would be limited to areas of suitable habitat, which may restrict beaver expansion into areas where they would conflict with other management objectives or cause short-term increases in erosion. The Proposed RMP and Alternative C allow for active reintroduction into suitable areas. The Proposed RMP, and E allow for beaver to be removed if economic harm or conflicts with other objectives can be demonstrated. Overall, the Proposed RMP, limits the potential for beaver populations to conflict with other management objectives (e.g., reduction of erosion or restoration of riparian areas), while providing for increased aquatic habitat complexity that may accrue from expansion of beaver populations. Alternative C maximizes the aquatic habitat benefits of beaver expansion, but may conflict with other resource objectives.

4.6.1.5 Cumulative Effects

Historically, many of the riparian areas throughout the Planning Area may have been heavily utilized for grazing. Decreases in riparian vegetation density and coverage resulted in increased sediment in streams, streambank instability, loss of cover and shade, reduction in instream habitat complexity, and loss of wetland habitat along streams through channel instability or disturbance of wetland vegetation and soils. Recent management to attain and maintain PFC or

similar resource objectives through application of grazing management BMPs has resulted in improvement in riparian and wetland vegetation community structure and function, with associated improvements in aquatic habitat.

For many of the streams in the CMPA, management actions would cumulatively promote maintenance of PFC and movement toward an advanced ecological status in riparian and wetland communities. Many of the perennial streams on public land in the CMPA are within the No Livestock Grazing Area, in areas designated as wilderness, or in WSR designation, where protection of ORVs includes protecting aquatic habitat. Also, WQRPs would be developed for many streams in the CMPA, with the objective of improving aquatic habitat values. For most streams in the CMPA, therefore, aquatic habitat conditions would likely improve due to the cumulative effects of management actions under any of the alternatives.

Management actions to promote objective-specific ecological status in riparian and wetland communities apply to most streams outside the CMPA as well, either through WQRPs or because of wilderness or WSR designation. In some locations, however, management may be primarily directed toward maintenance of PFC under Alternatives A and E. In these areas, under Alternatives A and E, aquatic habitat may not reach its structural or functional potential due to the cumulative effects of management for other objectives. Alternatives B and C, and to some extent the Proposed RMP, would reduce cumulative effects on aquatic habitat through emphasis on promoting an advanced ecological status of riparian areas.

4.6.2 Wildlife and Wildlife Habitat

4.6.2.1 Goal and Objectives

Goal – Provide diverse, structured, resilient, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms.

Objective 1. Maintain, restore, or improve habitat.

Objective 2. Manage forage production to support wildlife population levels identified by the ODFW.

4.6.2.2 Assumptions

The ODFW or the USFWS or both, retain jurisdiction over the management of wildlife populations. The BLM manages the habitat for wildlife species in cooperation with the ODFW and the USFWS through plans for various species. BLM management emphasis of wildlife species indicated in the alternative themes of this plan would be through recommendations to and in coordination with these agencies.

The management actions found in the Water Resources, Riparian/Wetlands, Rangelands, Woodlands, and Special Status Species sections would directly and indirectly maintain, restore, or improve habitat for general wildlife species. As stated above in the Assumptions section of the Fish and Aquatic Habitat analysis, there would be a strong link between the management actions and the effects of these actions on the quality and quantity of wildlife habitat.

References to either mule deer habitat or Greater sage-grouse habitat or both, includes habitat for a myriad of species that are sagebrush dependent such as sage sparrow, Brewer's sparrow, sage thrasher, pygmy rabbit, sagebrush vole, and others. Some of these are also special status species such as sage-grouse, pygmy rabbit, and sage sparrow. Through the use of the DRCs for the management of and restoration of sagebrush steppe habitat, it is anticipated that the effects of these actions would promote habitat improvements not solely for mule deer and Greater sage-grouse, but for many of these other species.

4.6.2.3 Analysis of Alternatives

4.6.2.3.1 Effects Common to All Alternatives.

Direct Effects

Maintenance, restoration, or improvement of habitat to support these resources would be primarily relative to the alternatives identified under Water Resources and Vegetation.

Fish and wildlife habitat management and monitoring would be coordinated with the ODFW, DEQ, USFWS, and other cooperators, as appropriate. The BLM would coordinate with the ODFW on the management of wildlife populations through the Planning Area.

Indirect Effects

Riparian and Wetlands Vegetation. Prescriptions at the activity plan level would be implemented or continued to manage riparian/wetland vegetation to maintain or progress toward PFC. While vegetation communities in PFC would not be necessarily at site potential, PFC represents a condition where potential erosion and sediment production would be minimized. In streams not currently in PFC, management direction to maintain or progress toward PFC would increase the density and cover of riparian vegetation. These management actions would have the effect of improving wildlife habitat quality and quantity by providing greater structure, diversity, cover and stability.

Noxious Weeds. Noxious weed prevention and control would continue to be a priority in all alternatives. Noxious weeds invade native plant communities resulting in degraded plant community structure, cover, composition and diversity. The priority on noxious weed prevention and control would reduce these effects on wildlife habitat.

Visual Resources. Depending on the VRM class where a development or project is proposed, mitigation, redesign, or relocation may be required. This could constrain any development or project. Each project would be analyzed on a case-by-case basis.

Energy and Minerals. There would be no effects on wildlife and wildlife habitat by locatable, leasable, and salable energy and mineral exploration and development in these areas that are closed by Congressional action or subject to the WSA IMP nonimpairment criteria under all the alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, the Steens Mountain Wilderness, and WSAs, which together cover 72 percent of the Planning Area. It is likely that only land with high mineral resource potential would be subject to mineral exploration. Further, it is likely that only a portion of that area with high mineral potential could be economically mined or would be proposed for development. In leasing activities, there would be no surface disturbance and no effect on wildlife and wildlife habitat under NSO leasing stipulations and reduced impact on wildlife and wildlife habitat under seasonal or other special leasing stipulations.

Under all alternatives, areas open to energy and mineral exploration and development could have effects on wildlife and wildlife habitat including loss of habitat, loss of reproductive output, or displacement due to noise, physical presence, and surface disturbance. In surface disturbing exploration and development activities, wildlife and wildlife habitat could be protected by mitigation measures such as these: seasonal restrictions on minerals activities, locating access routes away from wildlife and wildlife habitat, and reclamation of disturbed areas.

Grazing Management. In areas where grazing is determined to be contributing to nonachievement of objectives, changes in management would be implemented that would result in increased riparian and upland vegetation density and structure.

Wildland Fire Management. Areas burned by wildland or prescribed fire would be rested for a minimum of two growing seasons; grazing would be resumed when monitoring data support achievement of objectives. This would allow vegetation to increase in density, and would provide increased habitat for wildlife.

Wilderness Study Areas. Actions in WSAs would be limited to those that would be in compliance with the WSA IMP. This could constrain any proposed project. Each project would be analyzed on a case-by-case basis.

Wilderness. Management of wildlife and wildlife habitat in Steens Mountain Wilderness would be conducted in accordance with the Steens Act, the Wilderness Act and Appendix B of House Report 101-405 of the 101st Congress. MDRG analysis would be conducted on all actions. Actions would be limited to those that would be in compliance with these acts, and BLM wilderness management regulations and directives. This could constrain any proposed project in the Steens Mountain Wilderness.

4.6.2.3.2 Alternative A

Direct Effects

Single species oriented management would be emphasized in most habitats.

Opportunities would be identified and undertaken for improvement or restoration of other fish and wildlife habitat, such as vegetation manipulation and water development. A variety of methods, including seed drilling and aerial reseeding, could be used to reseed approximately 9,000 acres of deer winter range that are in unsatisfactory condition. The timing and methods used could affect the success rate of vegetative establishment and would be determined on a site specific basis in coordination with the USFWS, ODFW, and permittees. The composition of the seed mix would include sagebrush and a mix of other native and desirable nonnative species. Reseeding activities would be conducted so that minimal disturbance to wildlife would occur. This management action would contribute to increased habitat suitability for wildlife adapted to natural rangeland conditions.

Forage for wildlife would be allocated at management objective levels. Forage allocations currently support wildlife population levels identified by the ODFW. Wildlife populations would be allowed to expand naturally or through limited transplants in coordination with the ODFW. Wildlife could establish populations outside their historic range; no efforts would be made to stop expansion, even if expanding populations caused conflicts with other uses. Transplants would be conducted by the ODFW in accordance with current species-specific management plans.

Indirect Effects

Riparian and Wetlands. Improvements to riparian vegetation, including increased vegetative density, structure, and cover, could occur at specific locations with a proportional increase in wildlife habitat quality. In some locations, vegetation communities in PFC may not provide as much structural diversity and suitable wildlife habitat as would communities in advanced ecological status. A different diversity and abundance of wildlife species may be present at different stages along the ecological status continuum.

Existing grazing systems and improvements to maintain PFC would continue. Outside of areas affected by WQRPs or other special planning requirements (e.g., WSRs), riparian/wetland areas may not be managed to attain advanced ecological status, even though management to maintain or promote PFC may also promote advanced ecological status in many areas.

Sources of localized tree and shrub restoration material would continue to be established and maintained. These sources would assist in restoring riparian vegetation and preserving the genetic integrity of riparian plants. This process would contribute to the viability of riparian vegetation, thereby providing essential habitat components for wildlife.

Roads within or affecting riparian areas would be maintained and developed in conformance with existing laws and regulations. The current effects of roads on wildlife would continue, including displacement due to vehicle noise and human disturbance as well as some reduction in forage, cover, and breeding habitat due to the reduction of riparian vegetation density and coverage

Beaver populations would be allowed to expand naturally under this alternative. Beavers would not be actively introduced or transported into other areas. Beaver activities that expand riparian vegetation and result in construction of ponds also increase habitat for insectivorous and piscivorous (fish-eating) birds, amphibians, and other types of wildlife.

Woodlands. Late seral stage ecological characteristics of old growth western juniper woodlands would be maintained by mechanical removal of younger trees. Old growth junipers provide cavity nesting habitat for a variety of bird species. Removal of younger trees could reduce the risk of catastrophic fire, thereby helping to retain old growth juniper habitat. Mechanical removal of younger trees may cause temporary displacement to wildlife, with wildlife returning after activity ceased. Mechanical removal of younger trees would also benefit grassland and shrubland species of birds as these habitats recovered. This same action would reduce habitat for woodland species. All species would be present, but abundance of the different species would vary with the type of habitat that remained after treatment. To the degree that management actions would be in accordance with the Migratory Bird Executive Order, some disturbance to nesting birds could occur. All lightning- and human-caused fires would continue to be suppressed. This would eliminate short-term potential effects of fire, such as loss of habitat; however, the long-term effects could include more catastrophic fires and increased habitat loss. Some younger juniper trees would not be removed, allowing for younger trees to attain old growth characteristics and replace older trees as they die out.

Western juniper would be mechanically removed from quaking aspen and mountain mahogany stands. In quaking aspen stands where juniper has the potential to dominate, the stands would be rehabilitated by prescribed burning. Both quaking aspen and mountain mahogany provide important habitat for wildlife. Since juniper invasion could eventually cause

decreased effectiveness of these habitat types, management actions that restore these communities would maintain habitat viability for wildlife.

In sagebrush habitats, increasing juniper density causes a decline in herbaceous and shrub plant diversity and cover, and consequently a decline in wildlife species diversity. Mechanical removal and use of prescribed fires would reduce the presence of younger western juniper trees in sagebrush habitats. These management actions would restore and improve habitat for a diversity of wildlife species. Compliance with the Migratory Bird Executive Order would help to minimize disturbances to reproductive wildlife species (e.g., young birds would have fledged and young mammals would be mobile).

Fencing of treated quaking aspen and mountain mahogany stands where recovery could be suppressed by browsing might temporarily affect forage availability for big game species such as elk and mule deer. When plants are vigorous enough to tolerate browsing, fences would be removed and big game could return to forage in the treated areas. The fencing could allow increases in vegetation structure that would increase habitat quality for wildlife.

Rangelands. The ecological status of native plant communities would be maintained or improved. Plant density and coverage in these communities would be maintained or increased. Desirable nonnative seedings would be managed to maintain vegetation composition and to meet S&Gs. Maintaining nonnative seedings reduces habitat viability for a diversity of wildlife species, but would provide suitable habitat for species dependent on grasslands. To the extent that sagebrush is maintained in these seedings, habitat for a variety of wildlife would still be provided to a greater extent than a monoculture of crested wheatgrass. In sage-grouse habitat or deer winter range or both, native vegetative species diversity would be maintained or restored through interseeding of native species on 200 acres, resulting in a slight increase in winter habitat for deer and habitat connectivity for sage-grouse. On 50 percent of nonnative seedings where brush cover is high, brushbeating or disking in a mosaic pattern would be allowed. This activity could reduce habitat for sagebrush dependent wildlife, but removal of sagebrush canopy could also allow growth of more forbs and grass, thereby providing important habitat components for wildlife.

Both prescribed fire and mechanical removal would be used to create a mosaic of multiple successional stages. Reduced dominance of woody vegetation and release of desirable plants would occur, which could result in increased habitat quality for wildlife. Areas burned by wildland fire would be rehabilitated where needed, reducing future effects such as conversion of the burned landscape into one dominated by undesirable nonnative species such as noxious weeds or cheatgrass.

Wildlife would be temporarily displaced during management actions, but could return after activities ceased. Compliance with the Migratory Bird Executive Order would reduce potential effects to reproducing wildlife. Impacts would be further considered on a case-by-case basis, specific to each activity.

Noxious Weeds. The current integrated management of weeds would continue. Control on disturbed areas would be emphasized, as would inventories of new infestations. Noxious weeds displace high value native vegetation needed by wildlife and consequently decrease habitat value. Management actions to control and eradicate noxious weeds would restore habitat for wildlife and slow the expansion of weeds into currently uninfested areas. Short-term limited disturbance could occur to wildlife during weed control activities. In the long term, improvements in habitat quality and quantity would result from weed control. The habitat improvements from noxious weed control would correspond to the decrease in noxious weeds and the degree of restoration that would occur after weed control actions.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-eight percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on wildlife and wildlife habitat. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Wild Horses and Burros. Current AMLs and wild horse forage allocation levels would be maintained in all HMAs. Permanent increases or decreases in AMLs and forage allocations would not be considered. Wild horses can reduce forage, cover, and structure in habitats needed by wildlife. Excessive utilization in some areas can remove herbaceous species needed by wildlife and can result in limited plant regrowth. Since forage conditions in each HMA would be

monitored annually, wild horse forage use and AMLs could be adjusted through management actions to help maintain a thriving natural ecological balance. New water developments for wild horses could be used by wildlife, and might distribute horses over areas formerly used only lightly or sporadically.

Grazing Management. Existing grazing management would continue within the AMU and the CMPA. Interim adjustments, long-term grazing management, and stocking levels would continue to be adjusted in accordance with the results of monitoring studies, allotment evaluations, and rangeland health assessments. Livestock management practices and administrative solutions would continue to be implemented. These management actions promote livestock use in balance with forage production, thereby assuring that wildlife habitat would not be degraded.

Rangeland improvements such as fences could impede the movement of wildlife and potentially cause mortality due to entanglement. Compliance with BLM fencing requirements would reduce these potential effects. Where livestock would be excluded from streams, springs, riparian habitat, and wetland areas, more forage and cover would be available for wildlife. Detrimental changes in plant communities due to livestock overgrazing would not occur, resulting in improved habitat conditions.

Wildland Fire Management. All wildland fires would be suppressed. Although fire suppression would maintain current wildlife habitat in the short term, larger and hotter fires that would contribute to degradation of wildlife habitat and cause more frequent fire cycles could occur in the long term. Mechanical treatments or prescribed fire would be used to reduce fuel loading in areas where the fire regime has been altered. Such actions would help to reduce the potential for increased fire cycles and subsequent conversion of sagebrush habitat into less suitable, weed infested wildlife habitat. The effects of prescribed and wildland fires depend on the intensity, duration, and timing of the fire activity. Effects from prescribed fire would be analyzed on a case-by-case basis prior to and specific to each project.

Fire rehabilitation would improve habitat value for wildlife in burned areas where vegetation would not be expected to recover naturally. In these areas, a mixture of native and desirable nonnative plant species would be used to restore wildlife habitat and prevent a decline in habitat quality. Disturbances to wildlife from these activities would be unlikely, since suitable habitat would not be present prior to restoration.

Lands and Realty. The management actions associated with authorizations of new ROWs, utilities, and permits for large scale powerlines, fiberoptic cables, and pipelines would be conducted consistent with existing land use planning, regulations, and laws. ROWs would be located within designated corridors on a case-by-case basis. Siting additional disturbances within previously disturbed sites, such as designated powerline corridors, could reduce effects to wildlife, due to the assumption that this wildlife has already adapted to or been displaced by the developed corridors.
Siting new projects in undisturbed areas could decrease habitat quality for wildlife. Impacts to wildlife from new projects would be analyzed on a case-by-case basis in NEPA documents and would identify any effects that must be minimized through mitigation.

Transportation and Roads. This alternative would maintain the existing transportation and road management, while implementing the provisions of the Steens Act that apply to transportation. Only currently mapped roads would be considered in this section. Unmapped roads would be inventoried and managed based on an EA that would include consideration of effects to wildlife. The potential effects of the operation and maintenance of roads on wildlife would vary depending on the location and proximity of the road to concentrations of wildlife and their movement corridors.

Off-Highway Vehicles. OHV and mechanized vehicle use would continue to be managed in accordance with the existing open, limited, and closed OHV designations. OHV and mechanized vehicle use can cause short- and long-term disturbances to wildlife. Potential effects due to disturbance include vehicle-caused mortality, poaching, habitat fragmentation, behavior modification, displacement into less suitable habitat, and increased human access into previously undisturbed locations. When OHV or mechanized vehicle use occurs near important breeding habitat, disturbances can lead to a loss or decline in reproduction for wildlife. In certain areas, potential effects due to disturbances would be reduced to the extent that OHV and mechanized vehicle use would be limited to designated roads and ways, seasonal closures have been implemented, and OHV and mechanized vehicle use would be excluded.

Recreation. Some displacement of wildlife could occur as a result of continuing current recreation management. The numbers of some species that are tolerant of people and recreation activities could increase.

4.6.2.3.3 Alternative B

Direct Effects

The emphasis would be on managing self-sustaining native species.

Aerial reseeding would be used for approximately 9,000 acres of deer winter range. This method would be less invasive and more passive than methods proposed in other alternatives, such as seed drilling. However, limiting reseeding to a single method might not be as successful in restoring sagebrush as having multiple options available, based on site specific criteria. Only sagebrush would be reseeded. The emphasis on sagebrush could improve winter forage conditions for deer and habitat conditions for other sagebrush dependent species if the locations chosen for reestablishment would otherwise not succeed to sagebrush under natural conditions.

Opportunities would be identified and undertaken for improvement and restoration of fish and wildlife habitat, such as the use of wildland fire, limited fence removal, and other mainly passive methods.

Forage would be allocated for wildlife above management objective levels. Wildlife populations would be allowed to expand naturally. Some wildlife species could establish populations outside their historic range.

Indirect Effects

Riparian and Wetlands. The management goals and objectives for riparian habitat and wetlands would produce effects similar to those described in Alternative A. However, use of passive measures to achieve restoration objectives might result in a longer period of time to improve riparian vegetation communities and consequently, a longer period of time before riparian vegetation improves in condition for wildlife.

Active restoration of upland and riparian communities would be limited to sites that would not attain advanced ecological status in 20 to 50 years. The limited use of active restoration measures and emphasis on passive measures could result in a longer period of time for the development of high quality wildlife habitat. Upland vegetation communities adjacent to riparian areas would be managed to reduce fire frequency and intensity, with an emphasis on native vegetation. This would help retain and protect edge habitat, which has a high value for wildlife.

The management actions for roads could reduce human-caused disturbances to wildlife due to the elimination of alternative routes in riparian/wetland areas and would result in a slight increase in habitat availability. It would also eventually result in an increase in riparian vegetation, which provides important foraging, cover, and breeding habitat for wildlife. Beaver populations would be managed as in Alternative A and the potential effects would be the same.

Woodland. Fires in western juniper stands would be managed for resource benefits. In the long term, the size and intensity of fires would likely be reduced as the historic fire regime becomes established. Short-term effects, such as temporary displacement, may occur to some species of wildlife, but in the long term, allowing the return of the historic fire regime would most likely result in reduced size and intensity of future fires. Management actions associated with the maintenance, restoration, and improvement of quaking aspen and mountain mahogany stands would rely on natural processes and could take a longer period of time to achieve management goals than alternatives that use both active and passive measures.

Relying on natural and human-ignited wildland fires to reduce the influence of western juniper in these same habitats would result in a short-term loss of habitat. In the long term, suitable habitat conditions would develop as long as burned areas were not subsequently invaded by noxious weeds or other undesirable nonnative species. Other effects would be the same as those described for Alternative A.

Rangelands. Rangeland management would emphasize passive methods and natural processes to achieve goals and objectives. Such methods would probably take longer to restore degraded and decadent habitat than a combination of both active and passive methods. In some places, management that emphasizes passive methods and natural processes could result in less suitable habitat for wildlife due to noxious weed or cheatgrass invasion. Management actions would not include the rehabilitation of burned areas, which could result in poorer quality wildlife habitat. However, wildland fire sites with the potential for weed domination would be rehabilitated. As active management and restoration of these areas occurred, improved habitat would be available for sagebrush dependent wildlife.

Noxious Weeds. The management goals and objectives for noxious weeds would produce effects similar to those described in Alternative A. However, the potential for weed invasion might also be greater than in other alternatives because fewer methods of control would be authorized.

Energy and Minerals. There would be no indirect effects on wildlife and wildlife habitat because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Wild Horses and Burros. The potential effects of wild horses on wildlife would be the same as those described for Alternative A. Management actions would allow for permanent increases or decreases in AMLs and could allow resource managers to implement adaptive management strategies that would minimize conflicts with wildlife. Permanent increases in AMLs would not reduce habitat suitability for wildlife, since wild horses would be maintained at AMLs that ensure a thriving natural ecological balance between wild horse populations and other resource values. The additional methods of population control could decrease the rate of herd growth, thus minimizing potential conflicts with wildlife for longer periods of time.

Grazing Management. No livestock grazing would be authorized in the Planning Area. The absence of livestock would lead to increased availability of forage for wildlife, which would be consistent with this alternative's management direction to allocate forage for wildlife above current demand. Populations of some wildlife species could be expected to increase.

Wildland Fire Management. Wildland fires that threaten property, human life, or significant resource values would be suppressed. Suppression of other wildland fires would be evaluated and managed with appropriate management actions. In dry years, large wildland fires could change the structure of affected wildlife habitat from sagebrush steppe to annual grassland in the drier areas of the Planning Area. If increased fire cycles lead to permanent establishment of grasslands, wildlife species would change to those adapted to grasslands rather than sagebrush. Mechanical cutting of western juniper in sagebrush and riparian habitats would result in an increase in habitat quality for wildlife.

All burned areas would be evaluated for rehabilitation actions. A mixture of native plant species would be used to rehabilitate burned areas where natural recovery would be limited. The lack of flexibility on choice of seed mix might extend the length of time for rehabilitation. An increased period of time to achieve restoration would represent a loss of effective wildlife habitat for that period of time.

Lands and Realty. This alternative would recommend the withdrawal of the entire Planning Area from the public land laws, including the mining laws. All public lands would be retained and public holdings would be increased. Other management actions associated with Alternative B would provide opportunities to maintain, restore, or improve wildlife habitat. The entire Planning Area would be considered a ROW and realty use authorization exclusion area, which would eliminate any of the potential effects to wildlife from lands and realty actions.

Transportation and Roads. Only roads required by law would be constructed and road maintenance would not occur. Road closures would be the most extensive and disturbance to wildlife from transportation and roads would be minimal under this alternative.

Off-Highway Vehicles. Areas designated as closed would be maximized and would include the Alvord Desert playa, Borax Lake, Mickey Hot Springs, Catlow Valley, and all WSAs. All other areas would be designated as limited to designated roads, with a minimum number of roads identified. Organized OHV or mechanized vehicle events would be prohibited. Potential effects from OHV and mechanized vehicle use on wildlife would be limited to those areas along open routes. This would reduce disturbance to wildlife during all seasons of the year.

Recreation. Wildlife would be least disturbed by recreation activities with minimal recreation management and facilities. Some undeveloped recreation sites would be closed or rehabilitated if natural processes are being jeopardized, thus improving wildlife habitat.

4.6.2.3.4 Alternative C

Direct Effects

Throughout the Planning Area, approximately 20,000 acres of nonnative seedings and all native vegetation with low vegetative species diversity in deer winter range would be interseeded to establish native plant species. This action would

improve forage productivity and availability for mule deer as well as increase habitat suitability for sage-grouse, migratory birds, and other sagebrush dependent species. A site-by-site analysis would help to determine what plant species would be used in a given location. In areas where sagebrush restoration was a goal, livestock grazing could be used to suppress plant competition and allow establishment of sagebrush. To maximize successful plant establishment and habitat improvement, coordination with the ODFW, USFWS, and permittees would set livestock grazing prescriptions on a site specific basis in areas to be reseeded. A variety of methods could be used to accomplish the interseeding, allowing the selection of the best method for a given location. Wildlife habitat quality and quantity would be improved across a large expanse of the project area and could contribute to increases in populations of some wildlife species.

Opportunities would be identified and undertaken to improve or restore fish and wildlife habitat through wildland fire, other vegetation manipulations, limited fence removal, water developments, etc. Additional types of projects could include both active and passive methods and would provide more opportunities to improve habitat.

Forage would be allocated for wildlife above management objective levels. In coordination with the ODFW, wildlife populations would be allowed to expand naturally or through limited transplants.

Indirect Effects

Riparian and Wetlands. In this alternative, the rate of progress toward achieving an advanced ecological status for restoration of riparian/wetland areas and upland vegetation would be expected to increase because both active and passive measures would be used. Upland vegetation communities would be manipulated and managed to reduce fire intensity and frequency. Active restoration could include both native and desirable nonnative vegetation. Restoration sites would be managed to progress toward native vegetation within the RMP timeframe of 20 to 50 years. Under these management actions, wildlife habitat would be maintained or increased.

Restoration of riparian vegetation would include manipulation of isolated tree and shrub stands to promote regeneration, which could improve cover and forage for wildlife that would be dependent on riparian vegetation.

Roads within or affecting riparian areas would be managed as in Alternative B, and the effects would be similar to those described under Alternative B. In coordination with the ODFW, beaver populations would be managed as in Alternative A. Reintroduction and expansion of beaver into suitable habitat would be allowed, increasing the likelihood of additional wildlife habitat developing as described in Alternatives A and B.

Woodlands. Although the management actions for woodlands would be different under Alternative C than for Alternative A, the potential disturbance effects on wildlife would be the same. The effects on wildlife from mechanical removal of up to 90 percent of the post settlement western juniper trees in old growth stands would be similar to Alternative A. The effects on wildlife of allowing fires to burn in old growth western juniper stands when no threat to life or significant resource values exists would be similar to the effects described in Alternative B. To the extent that fires might be suppressed, restoration of fire to its historic role in the ecosystem would be delayed.

Using prescribed fire in addition to wildland fire to reduce the influence of western juniper on sagebrush and riparian plant communities would result in short-term habitat loss, but long-term increases in suitable habitat for wildlife. The option of using prescribed fire would allow resource managers an additional method to achieve goals and could result in more rapid development of high-quality wildlife habitat. The effects of the other management actions would be the same as those described for Alternatives A and B.

Rangelands. Emphasis would be on natural values and other resource objectives, such as reestablishment of native species. Actions to diversify the structure and composition of selected nonnative seedings would increase the quality and quantity of habitat available for sagebrush dependent wildlife.

Interseeding would be used on approximately 20,000 acres of nonnative seedings (discussed above) to establish native plants throughout the Planning Area where vegetative diversity would be low. The emphasis would be on reestablishing native species, but other desirable nonnative species could be used in the seeding mix where appropriate. This would increase habitat quality and quantity across a large expanse of the project area and could contribute to increases in sagebrush dependent wildlife. Livestock grazing could be used to suppress plant competition and allow sagebrush establishment. Seedings on the north and west side of Steens Mountain would be emphasized, improving habitat conditions in these locations for deer and other sagebrush dependent wildlife. Disturbances to wildlife from these

activities would be unlikely since suitable habitat would not be present prior to restoration. The pattern of treatment would be mosaic to provide for connectivity between existing sagebrush habitat.

Big sagebrush, quaking aspen, and western juniper communities would be managed for the benefit of all wildlife and to meet the DRC in all habitats. Plant communities that do not meet the DRC due to dominance by annual or invasive species or invasive juniper would be rehabilitated using only native species. The emphasis on native plant species could increase both the quality and quantity of wildlife habitat. Big sagebrush habitat would be managed for the benefit of game and nongame species and would be managed to meet the DRC in all big sagebrush habitats throughout the Planning Area. These management actions would increase the quality and quantity of wildlife habitat.

Noxious Weeds. The effects of management actions for noxious weeds would be similar to those described for Alternative A.

Energy and Minerals. See Effects Common to All Alternatives. In addition, areas with big game winter range and within 0.6 mile of identified sage-grouse leks would be closed to locatable, leasable, and salable minerals activity under this alternative. Under this alternative, 13 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development with potential for effects on wildlife and wildlife habitat on that much area. Locatable minerals activity would be most likely on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 43 acres in the Planning Area that have high potential for leasable minerals and that would be open; these acres would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 13 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Wild Horses and Burros. The potential effects of management actions associated with wild horses would be the same as those described for Alternative B.

Grazing Management. Protection of natural values would be emphasized in the AMU while providing for minimal sustainable livestock grazing that meets allotment management objectives. Grazing on the CMPA would be allowed consistent with The Steens Act, but natural resource objectives would be emphasized. These management actions would increase the likelihood that wildlife habitat would be maintained or increased. Other management actions to meet natural resource objectives, including discontinued use in vacant allotments that have resource conflicts, could also increase wildlife habitat.

Wildland Fire Management. Wildland fires that threaten property, human life, or significant resource values would be suppressed. In the short term, wildlife habitat would be maintained in these areas. However, it would be possible that over the long term, such activities could contribute to the occurrence of larger, hotter fires, with loss of suitable habitat and increased fire cycle and weed invasion, which would decrease habitat value for wildlife. Suppression of other wildland fires would be evaluated and managed with minimal suppression actions if they would be appropriate for resource benefits. All burned areas would be evaluated for rehabilitation actions. A mixture of native plant species would be used to rehabilitate burned areas where natural recovery would be limited. The effects of this management action would be similar to those described under Alternative B. The effects of other management actions would be similar to those described for Alternatives A and B.

Lands and Realty. Special designations, and all lands within 0.6 mile of sage-grouse leks, deer and elk winter range, and bighorn sheep habitat would be designated as ROW and realty use authorization exclusion and avoidance areas. The feasibility of consolidating existing parallel utility ROW facilities through crucial wildlife habitat would be evaluated. Where deemed feasible, consolidation of facilities would be implemented. This would reduce the number of raptor perches spread throughout portions of the Planning Area and would improve habitat conditions for certain wildlife species. Federal agency requests for new withdrawals would be recommended for approval only if they would protect natural values. These management actions, along with others for Alternative C, would minimize disturbance effects to wildlife.

Transportation and Roads. Transportation systems would be managed to meet resource goals and objectives consistent with emphasizing the protection of natural values. To the extent that this results in road closures, seasonal closures, and other limitations, disturbance effects to wildlife and their habitat would be minimized and would be similar to those in Alternative B.

Off-Highway Vehicles. Management for minimal OHV and mechanized vehicle use, including limiting OHV and mechanized vehicle use to designated roads and ways across the Planning Area, would result in reduced disturbance to wildlife. Seasonal area closures and closing unneeded roads would also reduce disturbance to wildlife.

Recreation. Management emphasis for protecting natural values while providing for developed and undeveloped types of recreation could cause less disturbance to wildlife. Some wildlife disturbance and displacement would be expected from existing and proposed recreation projects. Concentrated recreation use could result in habitat loss for wildlife sensitive to human disturbances, but species that adapt to humans would be expected to thrive or even concentrate in such areas.

4.6.2.3.5 Proposed RMP

Direct Effects

Throughout the Planning Area 10,000 acres or more of nonnative seedings and most of the native vegetation with low vegetative species diversity in deer winter range would be interseeded to establish native plant species. This would improve forage productivity and availability because the sites selected for interseeding would have low species diversity. Native species would be used for reseeding, although nonnative species could be used where appropriate. Livestock grazing could be used to suppress competition and allow sagebrush to become established. To the extent that sagebrush were successfully reestablished, suitable habitat for wildlife would improve. As with Alternative C, coordination with the ODFW, USFWS, and permittees would occur to set livestock grazing prescriptions on a site specific basis in areas to be reseeded.

Opportunities for improvement and restoration of fish and wildlife habitat, such as the use of wildland fire, vegetation manipulation, and water development, would be identified and implemented. However, no fences would be removed due to livestock grazing requirements. Fences could potentially impede the movement of wildlife and cause mortality from entanglement. Continued compliance with BLM fencing requirements would reduce these effects.

As with alternative A, forage for wildlife would be allocated at management objective levels and wildlife populations would be allowed to expand naturally or through limited transplants in coordination with the ODFW.

Indirect Effects

Riparian and Wetlands. The ecological status objectives would be dependent on meeting multiple resource objectives. Similar to Alternative C, management of existing grazing systems and recreation would be directed toward improvements to maintain PFC and promote an advanced ecological status. The rate of progress toward achieving an advanced ecological status through restoration of riparian and upland vegetation would be expected to increase because both active and passive measures would be used.

The effects of the following management actions would be similar to the effects described for Alternatives A and B, respectively: 1) the establishment of sources of localized tree and shrub source material for restoration; and 2) expansion of restoration actions to include isolated stands of riparian vegetation. The effects of roads within or affecting riparian areas would be similar to those described in Alternative B. Beaver populations would be managed as in Alternative C and the effects would be the same as those described in Alternative C.

Woodlands. Although the management actions for woodlands would be different under the Proposed RMP, than under Alternatives A, B, and C, the effects on wildlife would be the same as those described under those alternatives. The management action to develop markets for the byproducts of juniper removal could result in additional disturbances to wildlife, and would be analyzed on a case-by-case basis.

Rangelands. The ecological status of native plant communities would be maintained or improved. Grazing systems and range improvements designed to improve ecological conditions would have effects similar to those described in Alternative A. Since the emphasis would be on balanced cooperative management practices, increased forage could be used by wildlife as well as livestock.

Actions would be implemented to diversify the structure and composition of selected nonnative seedings, consistent with resource objectives. These actions would also maintain or improve wildlife habitat. Desirable nonnative seedings would be managed to maintain vegetation composition and meet S&Gs. To the extent that nonnative seedings would be maintained in place of sagebrush habitat, a loss of habitat for sagebrush dependent wildlife would occur.

The following management actions could reduce wildlife habitat in the short term, but in the long term, they would increase the amount and diversity of wildlife habitat: 1) interseeding approximately 10,000 acres or more of nonnative seedings (discussed above) to establish native plants throughout the Planning Area where vegetative diversity would be low. The emphasis would be on reestablishing native species, but other desirable nonnative species could be used in the seeding mix where appropriate; 2) brushbeating of sagebrush in a mosaic pattern on 50 percent of seeded areas with high brush cover; 3) plant communities that do not meet the DRC due to dominance by annual or invasive species or invasive juniper would be rehabilitated. Native and nonnative species would be seeded where appropriate; and 4) prescribed fire and wildland fire would be used to create a mosaic of multiple successional stages, reduce the dominance of woody vegetation, and release suppressed desirable plants. The potential effects of these actions would be the same as those previously described for Alternatives A, B, and C.

Noxious Weeds. Treatment for noxious weeds and treatment sites would be similar to Alternative A. Additional actions such as giving priority to high quality areas and emphasis on prevention, restoration, research, and expanded efforts to inventory and detect new infestations would be more likely to maintain or improve wildlife habitat than Alternatives A.

Energy and Minerals. See Effects Common to All Alternatives. In addition, areas within 0.6 mile of identified sage-grouse leks would be closed to locatable minerals activities; areas with big game winter range and within 0.6 mile of identified sage-grouse leks would be subject to seasonal or other special leasing stipulations or both; and areas within 0.6 mile of sage-grouse leks would be closed to salable minerals activities. Twenty-seven percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development, with potential for effects on wildlife and wildlife habitat on that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative; 281of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Wild Horses and Burros. The potential effects of management actions associated with wild horses would be the same as those described for Alternative B.

Grazing Management. Grazing management prescriptions in the AMU and CMPA would be developed to meet natural resource objectives. The effects of grazing on wildlife and wildlife habitat such as competition for forage, would be similar to Alternative A.

Wildland Fire Management. Management actions and their effects on wildlife would be similar to Alternative C. However, a mixture of native and introduced species would be used to enhance economic and natural resource values for the rehabilitation of burned areas and areas altered by fire suppression. This practice could allow more options for resource managers, the possibility of more rapid rehabilitation of burned sites, and therefore more rapid restoration of wildlife habitat.

Lands and Realty. The acquisition of land with high public resource values would be emphasized, potentially providing increased wildlife habitat. All large scale facilities would be encouraged to locate in the designated corridors. Failure to do so would increase disturbances to wildlife and contribute to habitat loss. WSRs and designated wilderness would be designated as ROW and realty use authorization exclusion areas. New withdrawals and modifications would be considered on a case-by-case basis. Potential disturbance effects to wildlife would be similar to those under Alternative A.

Transportation and Roads. For existing transportation and roads management, this alternative would result in management that meets resource goals and objectives, but strikes a balance between cultural, economic, ecological, and social values. Effects to wildlife would include disturbance from use on existing routes.

Off-Highway Vehicles. OHV and mechanized vehicle use would be managed in accordance with the Proposed RMP OHV designations. The BLM would seek cooperative agreements with OHV and mechanized vehicle clubs and other participants. The effects would be similar to Alternative C.

Recreation. Tourism opportunities and recreation developments would be allowed if consistent with meeting other resource objectives, thereby minimizing disturbance to wildlife. Development of new recreation sites would be consistent with the protection of natural values, which would also help to minimize disturbances to wildlife.

4.6.2.3.6 Alternative E

Direct Effects

Throughout the Planning Area, 5,000 acres of nonnative seedings and some native vegetation with low species diversity in deer winter range would be interseeded to establish native and other desirable nonnative plant species. This action would improve forage productivity and availability for wildlife because the sites selected for interseeding would have low species diversity. The nonnative species selected would be those that have value for wildlife and livestock, such as high palatability. A site-by-site analysis would help to determine which plant species would be used in a given location. As with the Proposed RMP and Alternative C, coordination with the ODFW, USFWS, and permittees would occur to set livestock grazing prescriptions on a site specific basis in areas to be reseeded. Minor effects to game species would occur where increased emphasis on desirable vegetation was compatible with forage that game species would use. If desirable vegetation increased nonnative seedings, habitat for grassland species would be maintained or increased, but habitat for sagebrush dependent wildlife would decrease. The potential effects of this management action would be similar to those described for the Proposed RMP.

As with the Proposed RMP, opportunities to improve and restore fish and wildlife habitat through the use of wildland fire, vegetation manipulations, water developments, etc. would be identified and implemented. However, no fences would be removed due to livestock grazing requirements. In addition to fish and wildlife habitat, the improvements would also benefit livestock, and could thereby increase forage competition between wildlife and livestock. Forage for wildlife would be allocated at management objective levels. Wildlife populations would be allowed to expand naturally or through limited transplants in coordination with the ODFW. Forage allocations for wildlife would be increased concurrent with improved range conditions and other improvements.

Indirect Effects

Riparian and Wetlands. Management of existing grazing systems would be directed toward providing maximum use while maintaining or progressing toward PFC. Active restoration of both upland and riparian communities would be pursued to provide sustainable livestock forage recreation uses and would not emphasize ecological status. These management actions could increase competition between wildlife and livestock and reduce suitable wildlife habitat.

Management of roads within or affecting riparian areas would be similar to Alternative A, with additional emphasis on the development of additional roads to promote commodity production and public uses. This action would increase the likelihood of disturbance effects continuing to affect wildlife. New roads would contribute to habitat loss and frequent use of such roads could indirectly reduce habitat suitability for wildlife. The effects of management actions for beavers would be the same as those described under Alternative A.

Woodlands. The effects of management actions would be similar to those described for all other alternatives. The management action to develop markets for the by products of juniper removal could result in additional disturbances to special status species in certain locations, and would be analyzed on a case-by-case basis.

Rangelands. Production of native, herbaceous, and shrubby vegetation for commodity uses within the constraints of other resource management objectives would be emphasized. Restoration of existing nonnative seedings in poor or fair condition would maintain or improve habitat conditions for wildlife dependent on this habitat type, but would reduce habitat availability for sagebrush dependent species. The use of interseeding to establish native and other desirable nonnative plant species on approximately 5,000 acres (discussed above) of low diversity, nonnative seedings would minimally increase wildlife habitat. The emphasis on commodity production would mean that rangeland treatments would be less likely to develop habitat conditions suitable for wildlife dependent on sagebrush habitat. Areas dominated by cheatgrass, or an overstory of sagebrush with a few herbaceous plants would be rehabilitated with species that would provide optimal forage and vegetative cover. These actions would improve habitat for wildlife.

Plant communities dominated by undesirable invasive species or invasive juniper would be managed for species that would provide optimal forage and vegetative cover for livestock. This could improve wildlife habitat as long as competition with livestock did not reduce forage availability for wildlife. Other management actions, including reduction of woody vegetation and management of big sagebrush habitat, would also increase habitat availability. Reductions in

fuel loading (i.e., reduction of woody vegetation) would decrease the likelihood of catastrophic fire, thereby reducing the potential loss of large portions of habitat. Brushbeating or disking of a maximum of 75 percent of nonnative seedings with high shrub cover would be conducted to release grass species and preserve maximum production. This action would reduce habitat for wildlife dependent on sagebrush, but would increase habitat availability for grassland dependent species.

Prescribed fire and wildland fire would be used to create a mosaic of multiple successional stages, reduce the dominance of woody vegetation, and release suppressed desirable plants. This action would have the same effects as those described in Alternative B. Similar to Alternative A, mechanical removal of woody vegetation would be used to create structural mosaics, but under this alternative it would be used only on selected sites.

Big sagebrush habitat would be managed for the benefit of game and nongame species and would be managed to meet the DRC in all big sagebrush habitats throughout the Planning Area. Big sagebrush would be reestablished where economically important game species would be present. Big sagebrush, quaking aspen, and western juniper habitat types would be managed where economically important wildlife would be present. This could indirectly provide suitable habitat for wildlife that would not be economically important, but limitations on the extent of this habitat management could reduce suitable wildlife habitat.

Noxious Weeds. Effects of noxious weed treatments would be the same as those described for the Proposed RMP.

Energy and Minerals. Minerals management would be conducted the same as under Alternative A; therefore, the indirect effects on wildlife and wildlife habitat would be the same as Alternative A.

Wild Horses and Burros. Management actions would be the same as those for Alternative B, except that no legal access to critical private water sources would occur. If under Alternative E, emphasis on livestock grazing authorization resulted in increased use in HMAs, then long-term trends toward a decline in rangeland condition could occur if monitoring would not be rigorously pursued and if any needed adjustments in AMLs would not be implemented. This situation could reduce the quality of wildlife habitat.

The management action to expand the South Steens HMA in the Steens Wilderness Area to include the Dry Creek and Big Springs Pastures of the Fish Creek-Big Indian Allotment (#06003), and that part of the South Steens Herd Area that includes Serrano Point Allotment (#6019), Carlson Creek Allotment (#6027), and Bone Creek and Miners Field pastures in the Alvord Peak Allotment (#6038), could affect wildlife habitat through competition for forage and water. Horses were removed from some of this area in the late 1970s. It has shown some improvement but not all riparian areas would be in PFC. Wild horse use could degrade wildlife habitat through year long use of riparian areas and reduction of suitable habitat.

Grazing Management. Livestock grazing opportunities would be maximized under this alternative. Increased emphasis on livestock grazing would be more likely to cause some of the potential effects to wildlife, such as increased competition for forage and changes in vegetation structure described in Alternatives A and B. Although S&Gs would be used to guide management, this alternative does not provide the emphasis on other resource objectives in allotment planning that would be provided in other alternatives. Depending on the location of increased use, some decline in habitat suitability for wildlife could occur if the increased use resulted in a decline in rangeland conditions.

Wildland Fire Management. All wildland fires would be suppressed using appropriate management actions. The effects of this management action would be the same as those described under Alternative A. All rehabilitated burned areas with a mixture of native and introduced plant species to provide maximum economic production. Following rehabilitation, an increase in the extent of introduced plants compared to pre-fire conditions could result in a decline in sagebrush habitat for wildlife. If native plants would be prevented from reestablishing within the rehabilitated areas, long-term loss of sagebrush habitat could occur. A plan to manage fires for resource and economic benefit would be developed. Although economic benefits would be prioritized under this alternative, other resources such as big game winter habitat would be likely to receive a similar high priority.

Lands and Realty. Acquisition of land with high commodity values would be emphasized to a greater degree than lands with high natural resource values. In the long term, disturbance effects to wildlife could increase if commodity uses increase. The feasibility of consolidating existing parallel utility ROW facilities through crucial wildlife habitat would be evaluated, but no action would be taken to consolidate the facilities. No new protective withdrawals would be

considered. This action, along with other management actions under this alternative, would increase the disturbance effects to wildlife.

Transportation and Roads. Transportation and roads would be managed for the benefit of commodity production. Road closures would be the least extensive under this alternative, and maintenance requirements would be greater. New road development would be encouraged. Under this alternative, the operation and maintenance of roads would be more likely to cause disturbance effects to wildlife would occur under the other alternatives. The extent of the disturbance would vary depending on the proximity of roads to important wildlife habitat (e.g., deer migration corridors).

Off-Highway Vehicles. Management actions would maximize OHV and mechanized vehicle use. The potential for disturbance to wildlife from OHV and mechanized vehicle use would be greatest under this alternative.

Recreation. Increased recreation opportunities and use would result in greater disturbances to wildlife. To the extent that new recreational developments or dispersed recreation occurs in or near areas regularly used by wildlife, such wildlife could be permanently displaced from important habitat. The potential for disturbance to wildlife from recreation activities would be greatest under this alternative.

4.6.2.4 Summary of Effects

Under Alternative A, habitats for wildlife would remain relatively static over time. Some habitats such as Wyoming big sagebrush would continue to decline, but others such as open grasslands would be created. Restoration and management of wildlife habitats would be considered mainly on a case-by-case basis and not on a landscape level. Continued emphasis on single species management and on game species would promote habitat maintenance for game species. The management goal would be met over the life of the RMP. No major increases or decreases in wildlife resources would be expected.

Under Alternative B, potential effects to wildlife could occur if natural processes result in increased fire cycles that prevent the maintenance of sagebrush communities. Over the long term, minimal fire suppression could possibly contribute to the occurrence of larger, hotter fires, a loss of wildlife habitat, increased fire cycle, and weed invasion.

Under Alternative C, a primary focus would be on habitats that would be important to priority wildlife species. Restoration priorities would be given to those areas with important wildlife habitats. Close monitoring of grazing activities would allow enough residual grasses to remain on site to benefit wildlife habitats. Habitats for game species would be maintained. Restoration priorities would be given to those areas with important wildlife habitats. Increased emphasis on restoration and ecosystem health and less emphasis on commodity production would provide increased forage for game species. Direct competition between game species and livestock for forage would be expected to remain minor due to dietary differences between livestock and most game species. Adjustments in timing, duration, and location of livestock grazing would minimize other effects to game species. Equal emphasis would be placed on habitat requirements for game and nongame wildlife. To the extent possible and practical, wildlife community connectivity and interrelationships would be emphasized in most habitats. This approach would stress landscape or ecosystem management and would be distinctly different from single species management emphasis. Alternative C would meet the management goal faster than all other alternatives.

Under the Proposed RMP, effects to wildlife and their habitats would be similar to Alternative C. Habitats that are important to wildlife species would be given priority. Restoration would occur at a slower rate compared to Alternative C, but at a faster rate than under Alternatives A and B. Emphasis would be placed on both game and nongame species. Increased restoration efforts in areas that would be important to wildlife species would be a primary area of focus. Restoration priorities would be given to those areas with important wildlife habitats. The management goal would be met under this alternative.

Under Alternative E, effects would be similar to Alternative A except that increased emphasis would be placed on commodity production. Restoration would also be focused primarily in commodity production areas, which would receive fire suppression priorities over other areas. With increased emphasis on commodity production, some wildlife habitats would continue to decline. Continued emphasis on single species management and on game species would promote maintenance of habitats for game species. The management goal would be met within the life of the RMP, but at a slower rate than under Alternative A.

4.6.2.5 Cumulative Effects

Historically, wildlife habitat within the Planning Area has been affected by impaired function of riparian areas, degradation of water quality, reduction of forage and cover, and reduction of the health and diversity of plant communities. In an effort to prevent degradation of wildlife habitat, management objectives were established for forage allocation levels for wildlife in the AMU and the CMPA in the existing land use plan, the Steens Act, the S&Gs, and applicable activity plans. Recent management to attain and maintain the DRC or similar resource objectives has resulted in improvement in vegetation community structure and function with associated improvements in wildlife habitat. Forage conditions are monitored and management actions are employed to help maintain a natural ecological balance and minimize conflicts with livestock and wild horses.

Maintenance, restoration, or improvement of wildlife habitat on public lands would be primarily associated with the management of water and vegetation resources (including rangelands, riparian/wetlands, woodlands, and noxious weeds). Therefore, cumulative effects on wildlife habitat are primarily the effects of vegetation manipulation (eg. reseeding, mechanical removal of juniper), noxious weed management, fire management, and water developments. Wildlife habitat would likely improve due to the cumulative effects of management actions under any of the alternatives. The management emphasis specific to each alternative (as summarized above) would determine the type and degree of cumulative effects on wildlife resources.

4.7 Special Status Species

4.7.1 Plants

4.7.1.1 Goal and Objective

Goal - Maintain, restore, or improve special status plant populations and animal habitats; manage public lands to conserve or contribute to the recovery of threatened or endangered species; and prevent future ESA listings.

Objective. Manage special status plant species and their habitats so management actions do not contribute to their decline or listing as T&E.

4.7.1.2 Assumptions

Seventy-three special status plant species occur in the Planning Area in a variety of plant associations and on a variety of physical habitats, many with distinctive soil types. No federal or state listed threatened or endangered plant species are known within the Planning Area.

Inventories for new occurrences of special status plants would be completed in areas of any ground disturbance; areas of noxious weed control activities, where public lands would be targeted for disposal; or for other NEPA actions.

4.7.1.3 Analysis of Alternatives

4.7.1.3.1 Effects Common to All Alternatives

Direct Effects

Known populations of special status plant species would be monitored to provide specific information on the condition of individual populations. Special habitat for special status plants would be managed to allow for increases in populations or maintenance of existing populations. Under each alternative, special status plant species and habitat would be protected in order to prevent listing as threatened or endangered.

Indirect Effects

Visual Resources. VRM Class I and II designations would help protect special status plant species habitat from disturbance. VRM Class III and IV designations would not afford additional protection to special status plant species habitat.

Energy and Minerals. There would be no effect on special status plant species and their habitat by locatable, leasable, and salable energy and mineral exploration and development in these areas that are closed by Congressional action or subject to the WSA IMP nonimpairment criteria under all the alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, the Steens Mountain Wilderness, and WSAs, which together cover 72 percent of the Planning Area.

Under all alternatives, special status plant species and their habitat that are located in areas open to minerals exploration and development could be degraded or partly or completely destroyed by habitat fragmentation, lower soil productivity, erosion, compaction, and infestations or competition from noxious weed and other invasive species caused by minerals activities.

It is likely that only land with high mineral resource potential would be subject to mineral exploration. Furthermore, it is likely that only a portion of that area with high mineral potential could be economically mined and would therefore be proposed for development. In leasing activities, there would be no surface disturbance and no effect on special status plant species and their habitat under NSO leasing stipulations, and reduced impact on special status plant species and their habitat under seasonal or other special leasing stipulations.

Special status plant species and their habitat could be protected from surface disturbing minerals activities by the following mitigation measures: limiting surface disturbance; limiting travel off existing roads; implementing seasonal closures, reclamation; surveying areas for special plant species and their habitat prior to minerals surface disturbance; the locatable minerals requirement for a plan of operations and site specific NEPA analysis prior to exploration or development located on any lands or waters known to contain federally proposed or listed T&E species or their proposed or designated critical habitat; the preparation of site specific NEPA analysis prior to minerals activities on a lease or salable mineral site; and avoidance of known areas.

Grazing Management. In the No Livestock Grazing Area, any effects to special status plants species from livestock grazing would be eliminated.

Wild Horses. The AML for the three wild horse HMAs would not change throughout the range of alternatives. Wild horse management would have little or no effect on most known populations of special status plants; however, if new populations would be found near concentration areas such as watering sites, special status plants could be affected by wild horses.

Wilderness Study Areas. Any special status species plant habitat located within in a WSA would be managed and protected under the WSA IMP.

4.7.1.3.2 Alternative A

Direct Effects

There would be no direct effects associated with Alternative A.

Indirect Effects

Noxious Weeds. Integrated weed management would be applied to most areas within the Planning Area, especially in areas containing special resources, such as special status plant habitat. Special status plants and their habitat would be protected with the eradication or management of noxious weeds. Special status plant sites currently free from noxious weeds would benefit from intensive inventory efforts.

Grazing Management. Livestock grazing would continue as authorized by the existing land use plan and would be adjusted if monitoring shows that resources would be affected. Concentrated livestock grazing in areas known to contain special status plants could result in soil disturbance, trampling, and grazing of the plants themselves. Current livestock management would not result in effects to known populations of special status plants.

Energy and Minerals. See effects common to all. Twenty-eight percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on special status plant species and their habitat on that much area. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for

leasable geothermal resources and that would be open under this alternative. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted.

Recreation. High recreation use in subalpine areas, along trails, and at overlooks could trample special status plants and introduce noxious weeds.

Areas of Critical Environmental Concern. Many of the RNAs and ACECs contain and provide suitable habitat for special status plants. These areas provide protection from other resource actions such as grazing, OHV and mechanized vehicle use, and recreation.

Transportation and Roads. This alternative would maintain transportation and road management. Road use, maintenance, and new construction could affect special status plant species and plant habitat. Effects from surface disturbances that result in erosion, vegetation removal, and new noxious weed infestations could degrade plant habitat and decrease plant occurrences. Maintenance activities such as blading increase soil erosion and spread noxious weed infestations, potentially degrading plant habitat and occurrence areas.

Off-Highway Vehicles. OHV and mechanized vehicle use, and any increase in use, in the Planning Area could result in long-term effects to special status plant species occurrence areas and their critical habitats, particularly in areas with fragile soils. Effects to special status plants could include destruction of habitat, destruction of individual plants, and weed introductions, resulting in habitat modifications and increased competition for resources.

Wildland Fire Management. Wildland and prescribed fires could have an effect on some species of special status plants by reducing competition and invasive plant species. Some of the special status plant species grow in areas where there would not be enough fuel to carry a fire in the plant community. Maps would be prepared for resource fire advisors showing special status plant species locations, which could reduce effects from fire suppression activity such as line construction, use of heavy equipment, retardant, staging areas, and fire camps. Management for some special status plant species that would not be fire tolerant could constrain the use of prescribed fire.

Rangelands. Native rangeland plant communities would be maintained or improved with emphasis toward attaining higher ecological status, which would reduce the potential for noxious weed infestations and distribution, and increase habitat values where special status plant species occur.

Prescribed fire and mechanical vegetation removal would generally reduce the woody component and increase the vigor of herbaceous plants. This would benefit the special status herbaceous plants but would not necessarily benefit the special status woody species. Long-term effects of vegetation manipulation practices in vegetation communities would reduce competition for special status plant species.

Wilderness. The Steens Mountain Wilderness will provide protected habitat for numerous special status plant and animal species. Habitats would be allowed to recover through natural processes or restoration efforts. Concentrated recreation use, especially at backcountry campsites, could cause trampling and noxious weed introductions which could affect special status plant species and their habitat.

4.7.1.3.3 Alternative B

Direct Effects

Without new project developments and with the elimination of grazing and mining, management emphasizing natural processes to determine rangeland conditions could benefit special status plant species in the short term under this alternative.

In the long term, emphasis on minimal management under this alternative could potentially increase effects such as habitat degradation for special status plant species if management activities fail to meet management objectives for this resource.

Indirect Effects

Noxious Weeds. The absence of aggressive weed control would have the potential to result in long-term effects to special status plant species, particularly those growing along or near roads where vehicle use increases introductions of invasive species. Special status plant occurrence areas could be displaced by noxious weeds, and normal reproductive processes and water/nutrient competition would result.

Grazing Management. The absence of livestock grazing throughout the Planning Area would have a beneficial effect on special status plants that are currently grazed, trampled, or disturbed by livestock. Livestock would no longer distribute noxious weeds into new areas, which would further reduce the effects on special status plant species and their habitat.

Energy and Minerals. There would be no indirect effects on special status plant species and their habitat because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Off-Highway Vehicles. With the elimination of all cross-country OHV and mechanized vehicle use, special status plant occurrence areas would be protected from short-term effects (e.g., trampling, soil disturbance, and vegetation removal), and long-term effects (e.g., erosion and noxious weed infestations) caused by OHV and mechanized vehicle use. The designation of the Alvord Desert playa and other areas as closed to OHV and mechanized vehicle use would increase the potential for native plant and special status plant species to reoccupy areas previously disturbed by OHV and mechanized vehicle use.

Transportation and Roads. Road closures would reduce soil compaction, erosion, and the potential for noxious weed introductions along roadways where some special status plant species exist No new roads would be developed, thereby eliminating additional sources of soil erosion and noxious weed infestations that could compete with special status plant species and degrade critical habitat.

Recreation. Restrictions on the types and amounts of recreation use would reduce any effects to special status plant species. However, in areas where high recreation use continues and management would be minimal, trampling and noxious weed introductions could affect special status plant species and their habitat.

Areas of Critical Environmental Concern. No protection from ACEC designations would be realized. Special status plants would be protected by the absence of most commodity resources.

Wildland Fire Management. Fire suppression activities that would be limited to the protection of life and property may result in certain areas burning repeatedly within a short time, which could adversely affect special status plants and other plant communities in early seral stages.

Rangelands. Under this alternative, native rangeland plant communities would be maintained or improved with emphasis toward attaining ecological status and minimizing commodity production. Rangeland plant communities would be more widespread and variable, with effects on special status plant species from decreased compaction, erosion, and reduced competition with invasive or undesirable vegetation. Reestablishment of native plants in areas currently in poor condition from nonnative plantings would reduce competition with undesirable species, improve plant cover, reduce erosion, and provide healthy habitat conditions for special status plant species.

Only wildland fire would be used to promote the DRC in the range plant communities. Short- and long-term effects would be similar to Alternative A, though lesser in magnitude without prescribed fires.

Wilderness. The Steens Mountain Wilderness will provide protected habitat for numerous special status plant and animal species. Effects to special status plant species and their habitat would be similar to Alternative A.

4.7.1.3.4 Alternative C

Direct Effects

Management would be directed by individual plant species requirements and would emphasize maintenance and promotion.

Indirect Effects

Noxious Weeds. Noxious weed control would have the same potential to result in effects to special status plant species as Alternative A. The emphasis on management for increased rehabilitation/restoration would have positive long-term effects on special status plants and their habitats, reducing erosion and competition from noxious and invasive plant species.

Grazing Management. The management emphasis for nonconsumptive uses while providing sustainable livestock grazing in the AMU and the CMPA would reduce the effects on special status plants from noxious weed infestations, trampling, and vegetation removal. The effects on special status plant species and their habitats from livestock grazing would be reduced with the elimination of relinquished permits that would be held vacant for two years.

Energy and Minerals. There would be no indirect effects on special status plant species and their habitat because areas with special status species and their habitat would be closed to locatable, leasable, and salable energy and mineral exploration and development.

Off-Highway Vehicles. With OHV and mechanized vehicle use restrictions, special status plant occurrence areas would be protected from both short- and long-term effects from OHV and mechanized vehicle use. Areas designated as closed to OHV and mechanized vehicle use would increase the potential for native plant and special status plant species to reoccupy areas previously disturbed by this use. The continuation of OHV and mechanized vehicle use on designated roads and ways would potentially affect special status plants and their habitats, primarily through noxious weed infestation and proliferation, trampling, soil compaction, and habitat degradation. OHV designations for this alternative provide more protection for special status plants than the Proposed RMP and Alternatives A, and E, but less than Alternative B.

Transportation and Roads. Road maintenance and seasonal road closures would be implemented to protect natural resource values and to reduce road damage, potentially reducing the effects to special status plant species. Existing roads and transportation routes would have the same effects on special status plant species occurrences and habitats as Alternative A.

Recreation. Restrictions on the types and amounts of recreation use would reduce effects to special status plant species. Limited recreation development and dispersed site rehabilitation would further reduce effects. However, in areas where high recreation use continues, trampling and noxious weed introductions could affect special status plant species and their habitat.

Areas of Critical Environmental Concern. RNAs and ACECs would provide suitable habitat and for special status plant species as well as protection from other resource actions.

Wildland Fire Management. Fire suppression activities and prescribed fire would have the same effects as Alternative B. Additional management emphasis under this alternative would be implemented to rehabilitate burned areas, and to use prescribed fire to restore natural plant communities. There would be more treatments and more acreage treated than under Alternative B, increasing the potential short-term effects and decreasing the potential long-term effects.

Rangelands. Native rangeland plant communities would be maintained or improved with emphasis toward attaining ecological status and minimizing commodity production. Rangeland plant communities would be more widespread and variable, resulting in improved habitat conditions for special status plant species. Reestablishment of native plants in areas currently in poor condition from nonnative seeding would improve plant cover and reduce erosion, resulting in less competition and improved habitat conditions for special status plant species.

Desirable nonnative seedings would be managed to diversify composition and structure of selected nonnative seedings with emphasis on natural values and other resource objectives. This would reduce competition from invasive plant species and improve habitat conditions for special status plant species.

Wildland fire for resource benefit and prescribed fire would be used to promote the DRC in the range plant communities. Short- and long-term effects would be similar to Alternative A.

Wilderness. The Steens Mountain Wilderness will provide protected habitat for numerous special status plant and animal species. Effects to special status plant species and their habitat would be similar to Alternative A.

4.7.1.3.5 Proposed RMP

Direct Effects

Management would be directed by the individual plant species requirements and would emphasize maintenance and promotion. This alternative implements additional management emphasis for the development of new projects that would cause more ground disturbance than Alternatives A, B, and C.

Indirect Effects

Noxious Weeds. The effects of noxious weeds management would be the same as Alternative A.

Grazing Management. Livestock management emphasis for sustainable livestock grazing in the AMU and the CMPA, while meeting natural resource management objectives, would increase effects of livestock grazing on special status plant species in comparison to Alternatives B and C through increased use and acreage of use. The effects would be less under this alternative than Alternatives A and E, due to the emphasis for adjusting interim and long-term grazing management and stocking levels in accordance with results of monitoring studies, allotment evaluations, and rangeland health assessments to meet natural resource objectives.

Energy and Minerals. See effects common to all. In addition, areas containing federally listed species and their critical habitat would be closed to locatable minerals activities, subject to seasonal or other special leasing stipulations, and closed to salable minerals activities. Twenty-seven percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on special status plant species and their habitat on that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative; 281of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted.

Off-Highway Vehicles. OHV and mechanized vehicle use would continue to affect special status plant species on 25,285 acres designated as open; and 1,451,685 acres designated as limited to designated roads and ways. More acres of land in the Planning Area would be closed to OHV and mechanized vehicle use than under Alternative A, but less than Alternatives B and C. Cooperative management with OHV and mechanized vehicle clubs would be sought. Group events would be allowed, increasing the potential effects to special status plant species from trampling, noxious weed infestations, and increased ground disturbance.

Transportation and Roads. Since roads would be the primary source for noxious weed introductions to the area, existing roads, particularly the high use roads, would affect soils and vegetation resources, including special status plant species. New road development could increase these effects throughout the Planning Area. Erosion, compaction, sedimentation, and vegetation damage resulting from road use, maintenance, and construction could degrade habitat conditions for special status plant species.

Recreation. Overall increased recreation use would increase the effects of trampling and noxious weed introductions on special status plant species and their habitats. Providing additional recreation developments and allowing tourism

opportunities would further increase these effects. In areas where high recreation use continues, trampling and noxious weed introductions could affect special status plant species and their habitat. The emphasis to develop recreational opportunities that would be consistent with other resource objectives may provide more protection for special status plant species through coordination and cooperation.

Rangelands. Native rangeland plant communities would be maintained or improved with emphasis toward attaining higher ecological status and diversity, which would reduce the potential for noxious weed infestations and distribution, and increase habitat values where special status plant species occur.

Areas of Critical Environmental Concern. RNAs and ACECs would provide suitable habitat for some special status plant species as well as protection from commodity production.

Wilderness. The Steens Mountain Wilderness would provide protected habitat for numerous special status plant and animal species. Habitats would be allowed to recover through natural processes or restoration efforts. Concentrated recreation use, especially at backcountry campsites, could cause trampling and noxious weed introductions which could affect special status plant species and their habitat.

Wildland Fire Management. Wildland and prescribed fires would have the same effect on special status plants as Alternative A. Fire suppression of wildland fires could reduce or increase the adverse effects to special status plant species, depending on where they occur, the intensity of the fire, the level of disturbance, and the condition of the surrounding plant community. More emphasis would be on harvesting byproducts from fuel treatments, which could increase the effects to special status plants due to an increase in ground disturbance and invasion of noxious weeds. Additional management emphasis under this alternative would be implemented to rehabilitate burned areas, and to use prescribed fire to restore natural plant communities. This alternative would provide for more fuel reduction treatments and more acreage treated and affected than under Alternatives A, B, and C.

4.7.1.3.6 Alternative E

Direct Effects

Management would be directed by the individual plant species requirements and would emphasize maintenance and protection under this alternative, the same as Alternative A. This alternative implements additional management emphasis for commodity uses and the development of new projects that would cause more ground disturbance than Alternatives A, B, C and the Proposed RMP.

Indirect Effects

Noxious Weeds. The effects of noxious weeds management would be the same as Alternative A.

Grazing Management. Maximizing livestock grazing would have a greater effect on special status plant species due to the increase in ground disturbance and resulting noxious weed infestations, increased trampling, and vegetation removal. Additional ground disturbance caused by an increase in rangeland projects, and maximizing livestock use throughout the Planning Area, would cause more effects to special status plant species, soils, biological soil crusts, and vegetation cover. Relinquished permits would be reallocated to other permittees, opening up more ground to grazing and increasing the effects to special status plant species and their habitat.

Energy and Minerals. Minerals management would be conducted the same as under Alternative A; therefore, the indirect effects on special status plant species and their habitat would be the same as Alternative A.

Off-Highway Vehicles. OHV and mechanized vehicle use could affect special status plant species, because most of the AMU would be designated as open to OHV and mechanized vehicle use. Maximizing OHV and mechanized vehicle use on 683,968 acres designated as open; 535,666 acres designated as limited to existing roads and ways; and 257,454 acres designated as limited to designated routes could increase the effects to special status plant species and their habitat. Organized group events would be encouraged, increasing the potential for effects to special status plant species and their habitat.

Transportation and Roads. Since roads would be the primary source of noxious weed introductions to the area, existing roads and newly developed roads to maximize commodity uses would have an effect on special status plant species and their habitat. New road development would increase the potential effects to special status plant species and their habitat.

Recreation. Recreation management would emphasize improvements, establishment of new recreation sites, and promotion of tourism, which could affect special status plant species and habitat through trampling and introducing noxious weeds.

Areas of Critical Environmental Concern. No protection from ACEC designations would be realized. Increased commodity production could affect habitat for special status plants in areas with concentrations of livestock, recreation, or OHV or mechanized vehicle use.

Wildland Fire Management. Wildland and prescribed fires would have the same effects on special status plants as Alternative A and the Proposed RMP. This alternative would include more fuel reduction treatments with more acreage treated and affected than Alternatives A, B, and C, which could affect special status plant species.

Rangelands. Native rangeland plant communities would be maintained or improved, the same as Alternative A, with the effects greater in magnitude due to the emphasis on commodity uses.

Desirable nonnative seedings would be managed to maintain vegetation composition and increase forage. Many of the seedings of crested wheatgrass infested with invasive and undesirable species would be rehabilitated. This action would reduce weeds and prevent additional invasive plant infestations, as well as reduce the potential for special status plant species habitat degradation.

Prescribed fire and mechanical vegetation removal would be implemented to promote commodity uses in rangeland vegetation. These activities would result in short-term damage to vegetation, soil disturbance, compaction, erosion, and runoff. With the application of BMPs, restoration or rehabilitation of these areas could reduce these short-term effects and prevent noxious weed infestations that could degrade habitat conditions of special status plant species. Long-term effects of these vegetation manipulation practices in vegetation communities would reduce undesirable dominant woody vegetation, thereby decreasing competition for other resources, releasing desirable plant species, increasing native plant diversity and community structure, preventing infestations of noxious weeds and other invasive species, and reducing the potential for special status species habitat degradation.

Wilderness. The Steens Mountain Wilderness will provide protected habitat for numerous special status plant species. Concentrated recreation use could cause trampling and introduce noxious weeds, which could affect some special status plant species and their habitat.

4.7.1.4 Summary of Effects

Under Alternative A, special status plant species and their habitat would likely continue at their current level of individual and occurrence numbers, although commodity uses could allow for a reduction. Mitigation would occur on a case-by-case basis rather than on a watershed or larger scale. The major effects to special status plant species would be from OHV and mechanized vehicle use, wildland fire (usually short term), noxious weed infestations (long term), livestock and wild horse grazing, and recreation uses.

Under Alternative B, natural processes would determine the outcome of habitat conditions for special status plant species. Disturbances from permitted activities would be eliminated, along with restoration and improvement projects. Wildlife and wild horses effects would continue, while livestock grazing would be minimized or eliminated, reducing effects on special status plant species and their habitats. The major effects on special status plant species would be from noxious weed infestations (long term and adverse), frequency of wildland fires or potential for catastrophic fire, and lack of restoration and rehabilitation of disturbed sites.

The overall effects of Alternative C on special status plant species would be projected to be less than Alternatives A, E, and the Proposed RMP; however, recovery rates for species habitat would be slow. Wildlife and wild horse effects would continue. Livestock grazing would be minimized or eliminated in some areas, reducing effects on special status plant species. The establishment of ACECs and other areas where management actions would be restricted in order to

protect natural resource values would have an effect on special status plant species occurring within those areas. Management areas that protect natural resource values would provide special status plant species adequate boundaries and habitat representation for their continued existence. Emphasis would be to reach a balance for the protection of special status plant species habitats and occurrences with restoration and improvement.

Under the Proposed RMP, special status plant species and their habitats could be affected by an increase in commodity and recreation uses. The establishment of ACECs and other areas where management actions would be restricted to protect natural resource values would have a beneficial effect on special status plant species. The emphasis on restoration and improvement would provide additional protection and maintenance measures for special status plant species that occur near project activities. The overall effects of the Proposed RMP on special status plant species could lead to increased protection in the long term, with short-term effects to individuals and habitat.

The overall effects of Alternative E on special status plant species could potentially result in declines or lowered levels of individuals and occurrences that may eventually contribute to federal listing of some plant species. Species protection would be individually prioritized, with little regard for overall habitat and watershed health. The management goal and objective for special status plant species would not be met for species found in heavily affected areas and where general ecological health would be critical to species survival. While this alternative would provide for maintenance of special status plant species, some sites could receive effects on habitat conditions that would require mitigation, and may fall short of meeting management goals and objectives.

4.7.1.5 Cumulative Effects

Past and potential adverse cumulative effects to special status plant species fall into the general categories of habitat loss, destruction of populations or individual plants, habitat conversion to less than marginal habitats, and loss of habitat connectivity and variability. Recent management to attain and maintain the DRC or similar resource objectives has resulted in improvement in vegetation community structure and function, with associated improvements in habitat supporting special status plant species. Management actions under any of the alternatives would be employed to assess the condition and trend of known populations, inventory for new occurrences, and protect specific habitats so that populations can be maintained or increased. Under each alternative, special status plant species and habitat would be protected in order to prevent listing as threatened or endangered in accordance with BLM policy. The management emphasis specific to each alternative (as summarized above) would determine the type and degree of cumulative effects on special status plant species.

The introduction of noxious weeds has the greatest potential to affect special status plant species and supporting habitats over the long term. Cumulative effects of noxious weed infestations have the potential to result in habitat conversion and increased competition for resources with special status plant species. An integrated approach to the problem that includes prevention strategies; inventory and early detection; multiple tools for control; research to determine the most effective, efficient strategies; and followup monitoring would enable effective noxious weed management throughout the Planning Area, depending on the alternative chosen for program management. Currently, the ongoing weed management program minimizes weed introductions to the Planning Area from outside sources and encourages a coordinated management approach.

4.7.2 Animals

4.7.2.1 Goal and Objectives

Goal – Maintain, restore, or improve special status plant populations and animal habitats; manage public lands to conserve or contribute to the recovery of threatened or endangered species; and prevent future ESA listings.

Objective 2. Conserve special status animal species and the ecosystems on which they depend.

Objective 3. Manage big sagebrush communities to meet the life history requirements of sagebrush dependent, special status species.

Objective 4. Evaluate habitat requirements and conditions for the reintroduction of extirpated species into historic habitat in the Planning Area.

Objective 5. Maintain, restore, or improve bighorn sheep habitat and allow for maintenance or further expansion of bighorn sheep populations as defined by the ODFW in Oregon's Bighorn Sheep Management Plan.

4.7.2.2 Assumptions

No management actions would be undertaken that would be likely to jeopardize the continued existence of listed species or destroy or adversely modify critical habitat pursuant to section 7(a)(2) of the ESA.

Management of Threatened or Endangered species would be in accordance with recovery plans and consultation with the USFWS.

Identification in the FMP of areas that possess significant natural resource values would assist in reducing effects to special status species during fire suppression and rehabilitation activities.

The ODFW or USFWS or both, retain jurisdiction over the management of special status species populations. The BLM manages the habitat for these species in cooperation with the ODFW and USFWS through plans for various species. BLM management emphasis of special status species indicated in the alternative themes of this plan would be through recommendations to and in coordination with these agencies.

The management actions found in the Water Resources, Riparian/Wetlands, Rangelands, and Woodlands sections would directly and indirectly maintain, restore, or improve habitat for special status species. As stated above in the Assumptions section of the Fish and Aquatic Habitat analysis, there would be a strong link between the management actions and the effects of these actions on the quality and quantity of special status species habitat.

References to either mule deer habitat or Greater sage-grouse habitat or both, includes habitat for a myriad of species that are sagebrush dependent such as sage sparrow, Brewer's sparrow, sage thrasher, pygmy rabbit, sagebrush vole, and others. Some of these are also special status species such as sage-grouse, pygmy rabbit, sage sparrow, and sage thrasher, and many are on the list of neotropical migratory birds. Through the use of the DRCs for the management of and restoration of sagebrush steppe habitat, it is anticipated that the effects of these actions would promote habitat improvements not solely for mule deer and sage-grouse, but for many of these other species.

The Migratory Bird Executive Order of 2001 calls for federal agencies to support the conservation intent of migratory bird conventions by integrating conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions and to restore and promote the habitat of migratory birds. The intent of actions described such as reducing juniper encroachment into sagebrush or riparian habitats, would be to restore these habitats and improve habitat for migratory birds as well as other species such as sage-grouse that depend on these habitats. While these actions may have effects on migratory birds by reducing some habitat components in the short term, the anticipated long-term effects would be an overall improvement in habitat quality and quantity as well as reduction of the occurrence and effects of catastrophic fires. Since the list of migratory birds (50 C.F.R. 10.13) would be extensive, management actions could not cover restoration of all the migratory birds that would be found in the Planning Area. Actions that have the effect of habitat restoration for one suite of migratory birds (sagebrush dependent) may reduce habitat for another suite (woodland). This may reduce the abundance of those species but does not reduce the overall diversity of bird species found after actions were completed.

4.7.2.3 Analysis of Alternatives

4.7.2.3.1 Effects Common to All Alternatives

Direct Effects

Greater sage-grouse and other special status species use areas would be identified in coordination with the ODFW or the USFWS or both. Habitat management would be coordinated across agency boundaries. Identification of these areas would facilitate management for special status species by reducing or eliminating conflicts with other resources such as energy and mineral development, and would allow for seamless management to improve structure and diversity of habitat across the landscape.

Special status species habitat management and monitoring would be coordinated with the ODFW, USFWS, and other cooperators, as appropriate. The BLM would coordinate with the ODFW or USFWS or both, on the management of special status species populations throughout the Planning Area. Recommendations for transplants of special status species onto or removal from public lands would be coordinated with the ODFW and USFWS.

Habitat conditions for reintroduction of locally or regionally extirpated species such as Columbia sharp-tailed grouse and mountain quail would be evaluated for successful reintroduction. This would provide an assessment of whether these species could be reintroduced to areas in which they historically occurred and have a higher probability of successful reintroductions.

In the Steens Mountain Wilderness, all actions such as transplants, trapping, distribution of medicine, emergency situations, and maintenance of existing guzzlers would be authorized in accordance with the Steens Act, the Wilderness Act, and Appendix B of House Report 101-405 of the 101st Congress. MRDG analysis would be completed on all actions. Depending on this analysis, actions for population management of special status species in wilderness areas could be restricted to those that do not affect wilderness characteristics or minimize the effects. This could limit the ODFW's ability to manage bighorn sheep populations.

Indirect Effects

Water Resources. BMPs at the activity plan level would be implemented to reasonably prevent degradation of water quality, which could preserve special status species habitat.

Noxious Weeds. Noxious weed prevention and control would continue to be a priority in all alternatives. Noxious weeds invade native plant communities, including riparian vegetation, resulting in degraded plant community structure, cover, composition, and diversity. Erosion and runoff tend to increase as a result; reduced cover may also result in reduced shade and increased water temperature. The priority on noxious weed prevention and control would reduce these effects on the special status species dependent on them.

Fish and Wildlife. As noted in Chapter 2, maintenance, restoration, or improvement of aquatic habitat to support fish and wildlife would be primarily addressed in the alternatives identified under Water Resources, and Vegetation. The broad objective under Fish and Wildlife to maintain, restore, or improve habitat generally promotes habitat improvements for special status species. Monitoring special status species and their habitat would increase information about specific habitats used and the direction for habitat improvement or restoration.

Fences within the No Livestock Grazing Area would be removed unless identified as necessary, such as maintaining an HMA boundary. This would remove many fences within the No Livestock Grazing Area that pose a hazard to special status species.

Visual Resources. Depending on the VRM class where a proposed development or project is located, mitigation, redesign, or relocation may be required. This could constrain any developments for special status animal species habitat management.

Energy and Minerals. There would be no effect on special status animal species habitat by locatable, leasable, and salable energy and mineral exploration and development in these areas that are closed by Congressional action or subject to WSA IMP nonimpairment criteria under all the alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, the Steens Mountain Wilderness, and WSAs, which together cover 72 percent of the Planning Area.

Under all alternatives, special status animal species habitat located in areas open to minerals exploration and development could be degraded or destroyed by habitat fragmentation, noise, physical presence, erosion, compaction, and infestations or competition from noxious weed and other invasive species caused by minerals activities.

It is likely that only land with high mineral resource potential would be subject to mineral exploration. Further, it is likely that only a portion of that area with high mineral potential could be economically mined and would be proposed for development. In leasing activities, there would be no surface disturbance and no effect on special status animal species

habitat under NSO leasing stipulations, and reduced impact on special status animal species habitat under seasonal or other special leasing stipulations.

Special status animal species habitat could be protected from surface disturbing minerals activities by mitigation measures such as these: limiting surface disturbance, limiting travel off existing roads, implementing seasonal closures, reclamation, surveying areas for special status animal species habitat prior to minerals surface disturbance; the locatable minerals requirement for a plan of operations and site specific NEPA analysis prior to exploration or development located on any lands or waters known to contain federally proposed or listed T&E species or their proposed or designated critical habitat; the preparation of site specific NEPA analysis prior to minerals activities on a lease or salable mineral site; and avoidance of known areas. After minerals activities cease, special status wildlife species could reoccupy the site if the habitat recovers.

Grazing Management. Whenever existing grazing management practices on public land would be determined to be contributing to nonattainment of resource objectives, appropriate actions would be implemented to meet habitat and other resource objectives. In areas where grazing would be determined to be contributing to nonachievement of special status species objectives, changes in management would be implemented.

Areas burned by wildland or prescribed fire would be rested for a minimum of two growing seasons, and grazing would resume only when monitoring data supported achievement of restoration objectives. This would allow vegetation to increase in density, and would reduce erosion and sediment delivery to water bodies. The effect would be improved habitat conditions for special status species.

Wilderness Study Areas. Actions in WSAs such as transplants, trapping, distribution of medicine, emergency situations, and maintenance of existing guzzlers would be limited to those that would be in compliance with the WSA IMP. This could limit the ODFW's ability to manage bighorn sheep populations. Improvements that would expand special status species into identified historic habitat would also be limited. Any proposed action would be subject to analysis under the WSA IMP on a case-by-case basis.

4.7.2.3.2 Alternative A

Direct Effects

Bat gates would be installed at the entrances to abandoned mines to protect known roost sites from disturbance by recreationists. Priority would be given to mine sites known to contain large numbers of bats (e.g., maternity roosts, hibernacula) and sites most likely to be disturbed by recreationists. This would protect bat colonies from disturbances that could cause abandonment of maternity roosts and subsequent reduced reproductive success, and from disturbances in winter that could cause hibernating bats to awaken, with subsequent increased risk of mortality. The gates would allow bats egress and ingress to abandoned mine sites while also providing for public safety.

Variable desired conditions of big sagebrush cover would be determined on a site-by-site basis to benefit special status species. This would allow a focused approach to target sites most in need of structural improvement or most likely to increase habitat suitability for sagebrush dependent special status species.

Management would be in accordance with the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush Steppe Ecosystem Management Guidelines. This would result in better survival of fledglings by minimizing the effects of actions that could cause mortality, and would require other resources to be managed so that identified goals and objectives for sage-grouse would be met and long-term range conditions would improve.

Whether or not habitat improvements would be needed in order to create suitable habitat for reintroduced Columbia sharp-tailed grouse, mountain quail, and other species would be determined. Implementation of any necessary habitat improvements prior to reintroduction would increase the likelihood of establishing successful self-sustaining populations of these special status species.

Transplants, reintroductions, and natural expansion of bighorn sheep populations would be allowed. These actions would maintain healthy viable herds of bighorn sheep populations, prevent overuse of resources, and would reduce the likelihood of increased disease and parasite transmission. Poor quality habitat in historic bighorn sheep range would be

improved, thereby enabling bighorn sheep that naturally expand into historic habitat to be more successful in establishing viable herds. The ODFW would be authorized to trap bighorn sheep when they determine excess animals would be available. This would protect the range from resource overuse, and enable the ODFW to continue establishing herds in suitable historic habitat and to engage in wildlife trades with other states.

Implementation of BLM's Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats would allow for keeping wild sheep and domestic sheep and goats from mixing, thereby avoiding the chance of disease transmission. Where domestic sheep use occurs on private land near bighorn sheep habitat, the BLM would seek cooperation with the private land owner or owner of the domestic sheep to prevent mixing and the possibility of disease transmission.

Since water would be an essential requirement of bighorn sheep, up to ten sites would be identified for development of low visual impact, natural water sources or wildlife guzzlers in historic bighorn sheep habitat. In some cases, lack of water may limit distribution and prevent successful reestablishment of bighorn sheep in historic habitat. Development of water sources would increase the likelihood of viable herds becoming established in historic habitat.

Indirect Effects

Soils and Biological Soil Crusts. BMPs would be implemented to protect and manage soil for all ground disturbing activities. This would provide long-term stability of this habitat type for special status wildlife species dependent on sagebrush habitat.

Riparian and Wetlands. Activity plan level management prescriptions or WQRP prescriptions would be developed but would be based on reach or site scale assessment only, and on site specific resource management objectives. Management would not be guided by prioritization across the Planning Area, but rather by site specific management goals with respect to water quality. Improvements to riparian vegetation, including increased vegetative structure and cover, could occur at these specific locations, with a proportional increase in habitat value for special status species.

Existing grazing and recreation systems and improvements to maintain PFC would continue. Outside of areas affected by WQRPs or other special planning requirements (e.g., WSRs), riparian/wetland areas would not be managed to attain advanced ecological status, although in many areas management to maintain or promote PFC may also promote advanced ecological status. In some locations, vegetation communities in PFC may not provide as much structural diversity and suitable habitat for special status species as communities in advanced ecological status.

Sources of localized tree and shrub source material for restoration would continue to be established and maintained. These sources would assist in restoring riparian vegetation and in preserving genetic integrity of riparian plants. This would contribute to the viability of riparian habitat, which provides essential habitat components for special status wildlife species.

Roads within or affecting riparian areas would be maintained, and would be developed in riparian areas in conformance with existing laws and regulations. Although roads could be designed to minimize effects on special status wildlife species, development and management of roads would be based on all resource management objectives. The current effects of roads on special status wildlife species would continue, including displacement due to vehicle noise and human disturbance, and on forage, cover, and breeding habitat due to the reduction of riparian vegetation density and coverage.

Beaver populations would be allowed to expand naturally under this alternative. The effects on special status wildlife species from beaver expansion and subsequent beaver pond development could include increased invertebrate prey and water sources for special status bat species, and increased breeding sites for special status amphibian species.

Woodlands. Late seral stage ecological characteristics of old growth western juniper woodlands would be maintained by mechanical removal of younger trees. Although this management action would promote the retention of old growth western juniper woodlands, none of the special status wildlife species that could occur in the project area would be dependent on this habitat type for successful reproduction. Some special status bat species and cavity nesting birds might use cavities in old trees; these trees would not be removed. Mechanical removal of younger trees may cause temporary displacement to any special status wildlife species that would be present. After activity ceased, however, these species could return to the areas. To the degree that management actions were in accordance with the Migratory Bird Executive

Order, minimal disturbance to nesting special status bird species could be expected. Removal of younger trees could reduce the risk of catastrophic fire, which would help to retain this habitat type for special status wildlife species.

All lightning- and human-caused fires would continue to be suppressed. This would eliminate short-term potential effects of fire, such as loss of habitat; however, the long-term effects could include more catastrophic fires and increased habitat loss.

Western juniper would be mechanically removed from quaking aspen and mountain mahogany stands. In quaking aspen stands where juniper has the potential to dominate, the stands would be rehabilitated by prescribed burning. Both quaking aspen and mountain mahogany provide important habitat components (e.g., forage, cover, nesting) for numerous special status species. Since juniper invasion could eventually cause decreased effectiveness of these habitat types, management actions that maintain and restore these communities would maintain habitat viability for special status wildlife.

In sagebrush habitats, increased juniper cover prevents the growth of grasses, forbs, and eventually sagebrush. Younger western juniper trees would be mechanically removed from sagebrush habitats, and prescribed fire would be used to reduce the influence of younger western juniper in sagebrush habitats. This would prevent the eventual loss of habitat required by sagebrush dependent special status species due to juniper invasion. Potential effects from these management actions would be the same as those described above. Compliance with the Migratory Bird Executive Order would help to reduce disturbances to any reproductive special status species (i.e., young birds would have fledged and young mammals would be mobile).

Rangelands. The ecological status of native plant communities would be maintained or improved. Plant density and coverage in these communities would be maintained or increased. These management actions would contribute to the maintenance of viable communities for special status species.

Desirable nonnative seedings would be managed to maintain vegetation composition and meet S&Gs. Maintenance of nonnative seedings can contribute to the loss of suitable habitat for sagebrush dependent special status wildlife species. Compliance with Standard 5 of the S&Gs would promote spatial distribution of suitable habitat for these species across the landscape with a density and frequency of species that would promote reproductive capability and sustainability. To the extent that nonnative seedings provide rest and deferment for the adjacent native vegetation communities, competition between livestock and sagebrush dependent species would be minimized.

In sage-grouse habitat or deer winter range or both, native vegetative species diversity would be maintained or restored through interseeding of native species on 200 acres. This would result in a slight increase in suitable habitat for sagebrush dependent species. The effectiveness of this effort would depend on the location of the interseeding in relation to existing suitable habitat.

On 50 percent of nonnative seedings where brush cover is high, brushbeating or disking in a mosaic pattern would be allowed. The natural reestablishment of sagebrush in nonnative seedings provides suitable habitat for sagebrush dependent special status wildlife species. Management actions that reduce the presence of sagebrush could contribute to the loss of habitat for these species. When conducted in sage-grouse winter habitat, brush treatments could cause loss of sagebrush for cover and forage, and could result in lower winter survival for sage-grouse. Coordination with wildlife resource specialists could help to incorporate known areas of sage-grouse occupancy and high value habitat areas into the design of the management action, thereby minimizing these effects. Loss of reproductive output for special status species could be reduced to the extent that management actions would be implemented in accordance with the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush Steppe Ecosystem Management Guidelines. Effects would be further analyzed on a case-by-case basis specific to each activity.

Areas burned by wildland fire would be rehabilitated to protect soil, water, and vegetation resources, which could reduce future effects such as the conversion of the burned landscape into one dominated by cheatgrass. This would constitute a loss of habitat for sagebrush dependent special status species. The inclusion of sagebrush in rangeland fire rehabilitation seeding mixtures could promote a more rapid return to conditions required by sagebrush dependent wildlife species.

Both prescribed fire and mechanical removal would be used to create a mosaic of multiple successional stages, reduced dominance of woody vegetation, and release of desirable plants. Current and historic suppression of wildland fires, along

with other factors, has contributed to an increase in the density of sagebrush stands and a decrease in grasses and forbs within those stands. A reduction in grasses and forbs has resulted in less suitable habitat for sagebrush dependent wildlife. Wildlife would be temporarily displaced during management actions, but could return after activities ceased. Depending on where these management actions were performed, they could result in the short-term loss of suitable habitat, and a long-term progression of habitat into more suitable conditions for sagebrush dependent species.

Avoiding the treatment of critical habitat components for sage-grouse such as winter habitat and brood-rearing habitat would mitigate potential effects. As restoration of these areas occurred, better habitat for sagebrush dependent species could develop. Long-term effects of this practice would be reduced dominance of woody vegetation and release of desirable plants, which could result in increased growth of grasses and forbs, thereby providing forage for sage-grouse. As with brushbeating, compliance with the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush-Steppe Ecosystem Management Guidelines would reduce potential effects to reproducing wildlife. Effects would be further analyzed on a case-by-case basis specific to each activity.

Noxious Weeds. The current integrated management of weeds would continue. Control on disturbed areas would be emphasized, as would inventories of new infestations. Noxious weeds displace high value native vegetation needed by special status wildlife and consequently decrease available habitat. Management actions to control and eradicate noxious weeds would restore suitable habitat for wildlife and slow the expansion of weeds into currently unoccupied areas. Short-term limited disturbance could occur to special status wildlife species during weed control activities. In the long term, however, improvements in habitat quality and quantity would result from weed control. The habitat improvements from noxious weed control would correspond to the decrease in noxious weeds and the degree of restoration that occurs after weed control actions.

Fish and Wildlife. Approximately 9,000 acres of deer winter range, which is in unsatisfactory condition would be reseeded with sagebrush and a mix of other native and nonnative species in coordination with the USFWS, ODFW, and permittees. This management action could contribute to an increase in suitable habitat for sagebrush dependent special status species. Available habitat would increase to the extent that the reseeding occurs near habitat occupied by species or creates conditions that could eventually be used by special status species.

Opportunities for the improvement or restoration of fish and wildlife habitat through vegetation manipulation, water developments, and other measures would be identified and implemented. When these improvements occur in habitat occupied by special status species or in potentially suitable habitat, it is assumed that the improvements would also increase the habitat available for these species. Environmental reviews completed for the projects would help to identify and mitigate any conflicts.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-eight percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on special status wildlife species habitat on that much area. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis where it conflicts with other resources, salable mineral development may not be permitted.

Wild Horses and Burros. Current AMLs and wild horse forage allocation levels would be maintained in all HMAs. Permanent increases or decreases in AML and forage allocations would not be considered. Due to differences in habitat use, wild horse management produces few effects on the availability of forage for bighorn sheep. Overlapping resource use can occur during droughts, when bighorn sheep would be more likely to move farther away from rimrock areas in search of water. During severe droughts, wild horses can be gathered under emergency conditions, thereby reducing any conflicts with bighorn sheep.

If forage availability decreased to a large extent, such as through extensive wildland fire, emergency gathers would reduce the likelihood of any conflicts with bighorn sheep. Current wild horse numbers would not be considered to limit bighorn sheep populations. If this situation were to change during the life of the RMP, changes in wild horse numbers would be addressed on a case-by-case basis and adjustments could be made accordingly.

Excessive grazing by wild horses can contribute to a decline in sage-grouse habitat. In some areas, grazing by wild horses has contributed to long-term changes in plant communities and has reduced certain habitat components. As with bighorn sheep, increased competition between wild horses and sage-grouse could occur during droughts. Failure to conduct emergency gathers when necessary could result in limited plant regrowth. Less available forage, in conjunction with drought, could result in lowered reproduction for special status wildlife species. Promoting proper gate management by livestock permittees could prevent concentrations of horses in small areas, thereby avoiding a situation that could result in a decline in available forage for special status species. As forage conditions in each HMA are annually monitored, wild horse forage use could be adjusted by management actions to help maintain a thriving natural ecological balance.

New water developments for wild horses could be used by special status wildlife species. If wild horses concentrate around these sources, soil compaction and trampling of vegetation could lead to a loss of habitat function and a decrease in suitable habitat for special status species. New water developments might distribute horses over areas formerly used only sporadically or lightly. The potential effects would need to be determined on a case-by-case basis when decisions were made as to where the new water sources should be sited.

Grazing Management. Existing grazing management would continue within the AMU and the CMPA. Interim adjustments, long-term grazing management, and stocking levels would continue to be adjusted in accordance with the results of monitoring studies, allotment evaluations, and rangeland health assessments. Livestock management practices and administrative solutions would continue to be implemented. These management actions promote livestock use that would be balanced with forage production, which assures that habitat conditions for special status wildlife species would not be degraded. General riparian and upland vegetation conditions described in Chapter 3 would be maintained, although the current management has generally promoted an upward trend in both riparian and range condition. With improving vegetation condition, habitat for special status species would also likely improve.

Increased competition for food and cover between sage-grouse and livestock could occur during droughts. Failure to adjust livestock use during drought could result in limited plant regrowth and overuse in wet meadows and riparian areas, which would reduce forage and cover for sage-grouse and other sagebrush dependent special status species. As each allotment is evaluated through monitoring, appropriate changes in grazing management would be implemented, thereby promoting progress toward habitat objectives and standards for rangeland health. Any necessary adjustments in grazing management practices would reduce the likelihood of the effects described above.

Rangeland improvements such as fences could exclude livestock from critical habitat required by special status wildlife species. Such fences could also impede the movement of wildlife and potentially cause mortality due to entanglement. Compliance with BLM fencing requirements would reduce these potential effects. In those areas where livestock would be excluded from streams, springs, riparian habitat, and wetland areas, more forage and cover would be available for special status wildlife species. Changes in plant communities due to livestock overgrazing would not occur, and improvements in habitat conditions would occur by reducing the likelihood of resource damage from concentrated animal use.

Wildland Fire Management. All wildland fires would be suppressed. Fire suppression in the short term would maintain current habitat conditions for special status wildlife species. In the long term, however, larger, hotter fires could occur that could contribute to degradation of native plant communities and cause more frequent fire cycles.

Mechanical treatments or prescribed fire or both, would be used to reduce fuel loading in areas where the fire regime has been altered. This action would help to reduce the potential for increased fire cycles and subsequent conversion of sagebrush habitat into an annual grassland or undesirable nonnative community. These management actions would help to maintain the viability of habitat for special status species. Over the long term, reductions in fuel loading would decrease the likelihood of catastrophic fire, which in turn would reduce the likelihood of loss of large portions of habitat needed by special status species. Short-term effects on any special status species could be minimized to the degree that management actions comply with the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush Steppe Ecosystem Management Guidelines.

Burned areas would be assessed for rehabilitation, and would be rehabilitated using a combination of mechanized and nonmechanized equipment. Restoration projects in areas where conditions would not be recovering naturally would improve habitat value for special status species. Disturbances to special status species from these activities would be

unlikely since suitable habitat would not be present prior to restoration. In areas where natural recovery would be limited, a mixture of native and desirable nonnative plant species would be used to rehabilitate burned areas. Rehabilitation with native species would be more likely to provide suitable habitat for special status wildlife species. However, seeding of desirable nonnative species might be necessary to prevent invasion of weeds and would be more likely to provide future suitable habitat for such species.

Lands and Realty. Land acquisitions could potentially help to meet the management goals and objectives for special status species if they result in the acquisition of land important to all or part of the life history of special status species. The objective to acquire land with high public resource values would be consistent with the management of special status wildlife species. Habitat for special status wildlife species would be considered to have high public resource values and would be a priority for acquisition. The disposal of critical habitat for special status species would be prohibited, or in the case of exchange, weighed against the values and benefits to be acquired in the transaction. Any such disposal might jeopardize the species' existence or contribute toward the need to list these species as federally T&E.

New withdrawals would be considered on a case-by-case basis. Public access development would be acquired on a case-by-case basis; however, under this alternative, no specific consideration would be given to protection of other resources, which would be provided in other alternatives.

New roads may be constructed around private lands to provide access to public lands. The construction and maintenance of these roads, if sited in critical habitat, could have both short- and long-term effects on special status species.

The management actions associated with authorizations of new ROWs, utilities, and permits for large scale powerlines, fiberoptic cables, and pipelines would be conducted consistent with existing land use planning, regulation, and laws. ROWs would be located within designated corridors on a case-by-case basis. Siting additional disturbances within previously disturbed sites, such as designated powerline corridors, could reduce effects to special status wildlife species because the assumption would be that these species have already adapted to or been displaced by the developed corridors.

Negotiations and feasibility of consolidating parallel overhead powerlines in crucial sage-grouse habitat may continue as opportunities arise. Such consolidation may result in less predation from perching raptors.

No new effects would occur to bighorn sheep and other resources at Buckskin Mountain from existing communications development. Any ongoing effects would continue indefinitely. Consideration of new communications uses at Buckskin Mountain would be deferred until definitive proposals were received.

Effects to special status wildlife species from such projects would be similar to those described above for energy and mineral activities. Effects to special status wildlife species from new projects would be analyzed on a case-by-case basis in NEPA documents and would identify any effects that must be reduced or eliminated through mitigation.

Transportation and Roads. This alternative would maintain the existing transportation and roads management, while implementing the provisions of the Steens Act that apply to transportation. Only currently mapped roads would be considered ; unmapped roads would be inventoried and managed based on an EA that would include consideration of effects on special status species.

The potential effects of the operation and maintenance of roads on special status species would vary depending on the location of the road and its proximity to habitats of special status species (e.g., sage-grouse lek sites and brood-rearing habitat, bighorn sheep winter range and travel corridors, and raptor nest sites). Roads that lead to abandoned mine sites could encourage recreational exploration of the mines, with resulting disturbance to any maternity roosts or winter hibernacula for bats. Installation of bat gates would prevent such occurrences.

Off-Highway Vehicles. OHVs and mechanized vehicles would continue to be managed in accordance with the existing open, limited, and closed OHV designations. OHVs and mechanized vehicles can cause short- and long-term disturbances to individuals or populations of special status wildlife species. Potential effects due to disturbance include vehicle-caused mortality, poaching, habitat fragmentation, behavior modification, displacement into less suitable habitat, and increased human access into previously undisturbed locations. When OHV or mechanized vehicle use occurs near important breeding habitat, disturbances can lead to a loss or decline in reproduction for special status species. In certain

areas, potential effects due to disturbances would be reduced to the extent that OHV and mechanized vehicle use would be limited to designated roads and ways; seasonal closures have been implemented; and OHV and mechanized vehicle use would be excluded. The current management situation has already assessed the potential effects from OHV and mechanized vehicle use; no major effects to special status species are known. The new management due to the Steens Act does not create any conflicts with special status species.

Recreation. Human encroachment on bighorn sheep habitat can displace sheep and disrupt local migration and movement routes. Current recreation activities have few effects on bighorn sheep and their habitat. Concentrated recreation in sage-grouse habitat could displace birds from the immediate area of use. As long as unoccupied suitable habitat is nearby, no long-term effects would be expected. However, where suitable habitat would be limited or displacement from habitat components (e.g., leks) occurs, the survival and reproductive output of sage-grouse could be affected.

4.7.2.3.3 Alternative B

Direct Effects

Bat gates would be installed at the entrances to abandoned mines and areas would be withdrawn from mineral entry. The effects of this management action would be similar to Alternative A. However, these sites would be withdrawn from mineral entry, which would provide protection for bats from additional mineral entry disturbances.

Natural processes would be allowed to determine future conditions of big sagebrush. In most areas of big sagebrush habitat, there would be no threats to property or human life, and wildland fires would not be suppressed. Management actions do allow consideration of fire suppression in areas of significant resource values. To the extent that habitat for sage-grouse would be considered a significant resource value, fires would be suppressed in those areas. In other places, wildland fires that were not suppressed could change the structure of sagebrush habitat to grasslands.

The reestablishment of natural fire regime could restore natural processes that shape suitable habitat for sagebrush dependent species. However, historic and current fire suppression, along with weed invasion, has changed sagebrush habitat conditions so that unsuppressed fire could increase the likelihood of sagebrush habitat being converted into annual grasslands. All burned areas would be evaluated for rehabilitation actions. A mixture of native plant species would be used to rehabilitate burned areas where natural recovery would be limited. The lack of flexibility on choice of seed mix might extend the length of time for rehabilitation. If the burned area contained important habitat components for special status species, the increased period of time to achieve restoration would represent a loss of available habitat for that period of time.

To the extent practicable, management would be in accordance with the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush Steppe Ecosystem Management Guidelines. This would result in better survival of fledglings by minimizing actions that could cause their mortality. It would also require other resources to be managed so that goals and objectives for sage-grouse would be met and long-term range conditions would improve. However, the reliance on passive methods could limit the ability to achieve the Management Guideline's goals.

No assessment would be performed to determine whether suitable habitat conditions would be present for successful reintroduction of Columbia sharp-tailed grouse, mountain quail, and other species; therefore, no habitat improvements would be conducted prior to reintroductions. This would reduce the chances of establishing successful self-sustaining populations of these special status species.

Natural processes would be allowed to determine the natural range expansion of bighorn sheep populations. Poor quality habitat in historic bighorn sheep range would be improved. This would enable bighorn sheep that naturally expand into historic habitat to be more successful in establishing viable herds. Bighorn sheep population numbers would be allowed to exceed management objectives. The ODFW would not be authorized to trap bighorn sheep when excess numbers would be available. No additional introductions or transplants would be conducted into identified historic range. These actions would conflict with the ODFW's existing management plan and goals for bighorn sheep, and could result in declines in the range from overuse, as well as declines in herd health and viability; they would also prevent the ODFW from engaging in wildlife exchanges with other states.

Up to five sites would be identified for construction of low visual impact, natural appearing water sources in historic bighorn sheep habitat. Lack of water can prevent the successful reestablishment of bighorn sheep in historic habitat. Development of water sources would increase the likelihood of viable herds in historic habitat. Since no transplants into historic habitat would be allowed, the locations of these water sources would need to be near existing populations in order for them to be effective.

Indirect Effects

Soils and Biological Soil Crusts. In the short term, localized declines in soil productivity could occur. In the long term, this alternative would be likely to maintain or improve soils and crusts, which would improve the quality of sagebrush habitat for special status wildlife.

Riparian and Wetlands. The management goals and objectives for riparian habitat and wetlands would produce similar effects as described in Alternative A. However, use of passive measures to achieve restoration objectives might result in a longer period of time to improve riparian vegetation communities, and consequently a longer period of time before suitable habitat conditions for special status wildlife species develop. In the short term, the limited use of active restoration measures and emphasis on passive measures could result in a longer period of time for the development of preferred habitat conditions for special status species. Upland vegetation communities adjacent to riparian areas would be managed to reduce fire frequency and intensity, with an emphasis on native vegetation. This would help retain and protect edge habitat, which has a high value for special status species.

The management actions for roads could reduce human-caused disturbances to special status wildlife species due to the elimination of alternative routes in riparian/wetland areas and would result in a slight increase in habitat availability. It could also eventually result in an increase in riparian vegetation, which provides important foraging, cover, and breeding habitat for special status species.

Beaver populations would be managed as in Alternative A and the potential effects would be the same.

Woodlands. Fires in old growth western juniper stands would be allowed to burn. No special status species would be solely dependent on this habitat type. Minimal effects from allowing fires to burn would be expected unless the fire spread uncontrolled to other habitat. In the long term, the size and intensity of fires would likely be reduced as the historic fire regime would be reestablished. Short-term effects such as temporary displacement of some special status species may result from these fires; however, in the long term, allowing the return of fires would likely result in reduced size and intensity of future fires as the historic fire regime becomes established.

Management actions associated with the maintenance, restoration, and improvement of quaking aspen and mountain mahogany stands would rely on natural processes, which could take a long period of time to achieve goals. If natural processes result in an increase in western juniper and a decline in quantity and vigor of quaking aspen and mountain mahogany, a decrease in the available herbaceous understory forage for special status species could occur along with a local decline in the viability of special status species that rely on these habitat types.

Mechanical removal of all younger western juniper trees from riparian and sagebrush habitats would result in increased understory forage available for sagebrush dependent special status species. Relying on natural and human-ignited wildland fires to reduce the influence of western juniper in these same habitats would result in a short-term loss of habitat. In the long term, suitable habitat conditions for sagebrush dependent special status species would develop as long as burned areas were not subsequently invaded by weeds.

Rangelands. Rangeland management would emphasize passive methods and natural processes to achieve goals and objectives. Such methods could take longer to achieve suitable habitat conditions for special status species. Opportunities to improve habitat using active methods would not be implemented. In some places, management that emphasizes passive methods and natural processes could result in less suitable habitat for sagebrush dependent special status species due to invasive weeds and other undesirable nonnative species such as cheatgrass. Management actions would not include the rehabilitation of burned areas, which could also result in less suitable habitat for these species due to weed invasion and failure of sagebrush to compete successfully with grasses. Nonnative seedings, which do not provide suitable habitat for sagebrush dependent special status species, might remain established longer than under other alternatives because natural processes would be allowed to determine the reinvasion rate of native species. Restoring

degraded and decadent shrublands would provide improved habitat conditions for sagebrush dependent wildlife, to the extent that the management actions complied with the Greater Sage-Grouse and Sagebrush Steppe Ecosystem Management Guidelines. As active management and restoration of these areas occurred, improved habitat would be available for sagebrush dependent wildlife. Opportunities to use livestock grazing to suppress competition and allow the establishment of sagebrush habitat could not occur under this alternative.

Noxious Weeds. The management goals and objectives for noxious weeds would produce similar effects as those described in Alternative A. However, the potential for weed invasion might also be greater than in other alternatives because fewer methods of control would be authorized.

Fish and Wildlife. The management emphasis would be on managing habitat for self-sustaining native species. Approximately 9,000 acres of sagebrush would be aerially reseeded onto deer winter range. This could restore and improve sagebrush habitat for sagebrush dependent special status species. The degree of improvement would depend upon the success rate of the reseeding effort and the number of acres restored to sagebrush habitat. Opportunities would be identified and implemented for the improvement or restoration of fish and wildlife habitat through the use of wildland fire, fence removal, or other mainly passive methods. Such improvements could also improve habitat conditions for special status species.

Forage for wildlife would be allocated above management objective levels and wildlife populations would be allowed to expand naturally. This management action would be unlikely to result in reduced forage availability for special status species.

Energy and Minerals. There would be no indirect effects on special status animal species habitat because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Wild Horses and Burros. The potential effects of wild horses on special status species would be the same as those described for Alternative A. Management actions that allow for permanent increases or decreases in AMLs could allow resource managers to implement adaptive management strategies that would minimize conflicts with special status species. Permanent increases in AMLs would not be assumed to reduce habitat suitability for special status species since wild horses would be maintained at AMLs that ensure a thriving natural ecological balance between wild horse populations and other resource values. The additional methods of population control could decrease the rate of herd growth, thus minimizing potential conflicts with special status species due to high herd numbers.

Grazing Management. No livestock grazing would be authorized in the Planning Area. The absence of livestock would lead to increased availability of grass and herbaceous plants needed for sage-grouse nesting cover. Competition for forage between livestock and sagebrush dependent special status species would not occur. Populations of sagebrush dependent wildlife could increase in the Planning Area.

Livestock grazing would occur in the CMPA consistent with the Steens Act, but no rangeland projects would be planned or implemented in support of livestock grazing. The S&Gs, including Standard 5, which specifically addresses protection of special status species, would apply to grazing management. Natural resource objectives would be emphasized and would provide greater consideration of special status species.

Wildland Fire Management. Wildland fires that threaten property, human life, or significant resource values would be suppressed. Suppression of other wildland fires would be evaluated and managed with minimal suppression actions. Suppression of wildland fires in habitat used for breeding activities by special status species would preserve the habitat. However, it would also possible that over the long term, such activities could contribute to the occurrence of larger, hotter fires, loss of suitable habitat, increased fire cycles, and weed invasion.

All burned areas would be evaluated for rehabilitation actions. A mixture of native plant species would be used to rehabilitate burned areas where natural recovery would be limited. The lack of flexibility on choice of seed mix might extend the length of time for rehabilitation. If the burned area contained important habitat components for special status species, the increased period of time to achieve restoration would represent a loss of effective habitat for that period of time.

Development of a plan to manage wildland fires for resource benefit would allow planning to protect critical resources for special status species.

Lands and Realty. Under lands and realty actions, this alternative would recommend the withdrawal of the entire Planning Area from the public land laws, including the mining laws. All public lands would be retained and public holdings would be increased. These actions could potentially help to meet the management goals and objectives for special status species if they result in the acquisition of land important to all or part of the life history of special status species. Habitat for special status wildlife species would be considered to have high public resource values and would be a priority for acquisition. The following management actions could protect habitat critical to special status species: 1) acquire the rights necessary to close roads that provide public access to lands containing sensitive resource values; 2) control and minimize access to areas containing sensitive resources; and 3) provide for land tenure actions that do not facilitate public access to lands containing sensitive resource values. The entire Planning Area would be considered a ROW and realty use authorization exclusion area.

No new effects to bighorn sheep and other resources from communications development would occur at Buckskin Mountain would occur. When the existing facilities become obsolete and are removed, there would be less human disturbance to the sheep in that area from communications operation and maintenance activity.

Removal or consolidation of parallel overhead powerlines in crucial sage-grouse habitat may result in less predation from perching raptors.

Transportation and Roads. Only roads required by law would be constructed, and road maintenance would not occur. Road closures would be the most extensive under this alternative. Disturbance effects to special status species from transportation and roads would be minimal under this alternative.

Off-Highway Vehicles. Areas designated as closed would be maximized and would include the Alvord Desert playa, Borax Lake, Mickey Hot Springs, Catlow Valley, and all WSAs. All other areas would be designated as limited to designated roads, with a minimum number of roads identified. Organized OHV or mechanized vehicle events would be prohibited. Designation of the Steens Mountain Wilderness, all WSAs, WSA cherrystem roads and ways, and roads between WSAs as closed to OHV and mechanized vehicle use would eliminate potential disturbances to wintering bighorn sheep to the extent that their range overlaps with the closed designations. The closed designations would also eliminate any disturbances to other special status wildlife species and their habitat. Road closures would reduce access and thereby reduce human disturbance to special status wildlife species.

Recreation. Closing some undeveloped recreation sites would improve suitable habitat conditions for special status animal species. Special status animal species would generally not be disturbed by recreational use.

4.7.2.3.4 Alternative C

Direct Effects

The effects of bat gate installation would be the same as those described for Alternative B.

Big sagebrush habitat would be managed for the benefit of special status species to meet the DRC in all big sagebrush habitats throughout the Planning Area. Management would be in accordance with the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush Steppe Ecosystem Management Guidelines. The effects of this management action would be similar to those described for Alternative A.

The management actions for the reintroduction of Columbia sharp-tailed grouse, mountain quail, and other species would be the same as for Alternative A. The effects of these management actions would be similar to those described for Alternative A.

Transplants, reintroductions, and natural expansion of bighorn sheep would be allowed. The effects would be similar to those described for Alternative A. No habitat improvements in historic bighorn range would be conducted. This could reduce the likelihood of establishing viable herds in these transplant and reintroduction locations as well as the areas bighorn sheep naturally expand. Bighorn population numbers would be allowed to exceed management objectives. The

ODFW would be authorized to trap bighorn sheep if they determine that excess animals would be available for removal. This would protect the range from resource overuse, protect herd health and viability, and enable the ODFW to engage in wildlife exchanges with other states. The effects of water development would be the same as those described in Alternative A.

Implementation of BLM's Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats would allow for keeping wild sheep and domestic sheep and goats from mixing, thereby avoiding the chance of disease transmission. Where domestic sheep use occurs on private land near bighorn sheep habitat, the BLM would seek cooperation with the private land owner or owner of the domestic sheep to prevent mixing and the possibility of disease transmission.

Indirect Effects

Soils and Biological Soil Crusts. The management goals and objectives of the Soils and Biological Soil Crusts would be directed toward promoting soil stability and reducing erosion. Soil conditions could improve more quickly in the short term.

Riparian and Wetlands. This alternative would be similar to Alternative B. However, both active and passive measures would be used to manage livestock use in riparian/wetland areas. The rate of progress toward achieving an advanced ecological status for restoration of riparian/wetland areas and upland vegetation would be expected to increase because both active and passive measures would be used. Upland vegetation communities would be manipulated and managed to reduce fire intensity and frequency. Active restoration could include both native and desirable nonnative vegetation. Restoration sites would be managed to progress toward native vegetation within the RMP timeframe of 20 to 50 years. Under these management actions, suitable habitat conditions for special status species would be maintained or increased.

Similar to Alternative A, the establishment of sources of localized tree and shrub source material for restoration would assist in restoring riparian vegetation. Restoration actions would be expanded beyond the scope of Alternative B to isolated stands of riparian vegetation, thereby improving habitat conditions for special status wildlife species. However, the habitat value of these isolated sites could be reduced if livestock or wild horses damaged the vegetation during restoration.

Roads within and providing access to riparian areas would be managed as in Alternative B, and the effects would be similar to those described under Alternative B. Beaver populations would be managed as in Alternative A. In addition, reintroduction and expansion of beaver into suitable habitat would be allowed. This would increase the likelihood of additional suitable habitat developing for special status amphibians and bats.

Woodlands. Although the management actions for woodlands would be different under Alternative C than for Alternative A, the potential disturbance effects on special status species would be the same. The effects on special status species from mechanical removal of up to 90 percent of the post settlement western juniper trees in old growth stands would be similar to Alternative A. The effects on special status species of allowing fires to burn in old growth western juniper stands if no threat to life or significant resource values exists, would be similar to the effects described in Alternative B. To the extent that fires might be suppressed, restoration of fire to its historic role in the ecosystem would be delayed. Since no special status species require this habitat type for successful reproduction, no effects to their viability would be expected from the delay.

The effects of the following management actions would be the same as those described for Alternative B: 1) potential effects of mechanical juniper removal from quaking aspen and mountain mahogany stands, and the restoration of quaking aspen stands through burning; 2) mechanical removal of younger western juniper from riparian and sagebrush habitats; and 3) wildland fire, and natural and human-ignited fires would be allowed to reduce the influence of western juniper on sagebrush and riparian habitat.

Rangelands. The emphasis would be on natural values and other resource objectives, such as reestablishment of native species. Actions to diversify the structure and composition of selected nonnative seedings would increase the quality and quantity of habitat available for sagebrush dependent species.

Interseeding would be used on approximately 20,000 acres of nonnative seedings throughout the Planning Area to establish native plants where vegetative diversity would be low. The emphasis would be on reestablishing native species, but other desirable nonnative species could be used in the seeding mix where appropriate. This would increase habitat quality and quantity across a large expanse of the project area and could contribute to increases in populations of sagebrush dependent species. Livestock grazing could be used to suppress plant competition and allow sagebrush establishment. To maximize the likelihood of establishing suitable habitat for special status wildlife species, coordination with the ODFW, USFWS, and permittees would occur. Seedings on the north and west side of Steens Mountain would be emphasized. Habitat conditions in these locations would improve for sage-grouse and other sagebrush dependent special status species.

The effects of the following management actions would be the same as those described for Alternative A: 1) brushbeating of sagebrush in a mosaic pattern would be allowed on 50 percent of seeded areas with high brush cover; 2) naturally ignited wildland fire would be allowed to create a mosaic of multiple successional stages; 3) reduce the dominance of woody plants, and release suppressed desirable plants.

Plant communities that do not meet the DRC due to dominance by annual or invasive species or invasive juniper would be rehabilitated using only native species. The emphasis on native plant species could increase both the quality and quantity of suitable habitat for sagebrush dependent species.

Big sagebrush, quaking aspen, and western juniper communities would be managed for the benefit of all wildlife and to meet the DRC in all habitats. Big sagebrush habitat would be managed for the benefit of game and nongame species and would be managed to meet the DRC in all big sagebrush habitats throughout the Planning Area. These management actions would increase the quality and quantity of suitable habitat for sagebrush dependent species.

Noxious Weeds. The effects of management actions for noxious weeds would be similar to those described for Alternative A.

Fish and Wildlife. The effects of emphasis on managing habitat for self-sustaining native species would be the same as for Alternative B.

Throughout the Planning Area, approximately 20,000 acres of nonnative seedings (discussed above) and all of low species diversity native vegetation in deer winter range would be interseeded to establish native plant species. Other desirable nonnative plant species may be used on a limited basis. Livestock grazing could be used to suppress competition and allow sagebrush to become established. Coordination with the ODFW, USFWS, and permittees would occur to set livestock grazing prescriptions on a site specific basis in areas to be reseeded. This would increase habitat quality and quantity across a large expanse of the project area and could contribute to increases in populations of sagebrush dependent species.

Opportunities would be identified and implemented to improve or restore fish and wildlife habitat through wildland fire, other vegetation manipulations, limited fence removal, water developments, and other measures. The additional projects could include both active and passive methods and would provide more opportunities to improve habitat than using mainly passive methods.

Energy and Minerals. There would be no indirect effects on special status animal species habitat because areas with special status species and their habitat would be closed to locatable, leasable, and salable energy and mineral exploration and development.

Wild Horses and Burros. The potential effects of management actions associated with wild horses would be the same as those described for Alternative B.

Grazing Management. Protection of natural values would be emphasized in the AMU while providing for minimal sustainable livestock grazing that meets allotment management objectives. Grazing in the CMPA would be allowed consistent with Steens Act, but emphasis would be on natural resource objectives. These management actions would increase the likelihood that suitable habitat would be maintained or increased for sagebrush dependent special status species. Other management actions to meet natural resource objectives, including discontinued use in vacant allotments that have resource conflicts, could also increase the availability of suitable habitat for special status species.

Wildland Fire Management. Wildland fires that threaten property, human life, or significant resource values would be suppressed. To the extent that these areas coincide with habitat used by special status species, suitable habitat would be maintained. However, over the long term, such activities could possibly contribute to the occurrence of larger, hotter fires, and a loss of suitable habitat, as well as increased fire cycle and weed invasion. Suppression of other wildland fires would be evaluated and managed with minimal suppression actions if appropriate for resource benefits. All burned areas would be evaluated for rehabilitation actions. A mixture of native plant species would be used to rehabilitate burned areas where natural recovery would be limited. The effects of this management action would be similar to those described under Alternative B. The effects of other management actions would be similar to those described for Alternatives A and B.

Lands and Realty. All lands within 0.6 mile of sage-grouse leks, deer and elk winter range, and bighorn sheep habitat, would be designated as ROW and realty use authorization exclusion and avoidance areas. The feasibility of consolidating existing parallel utility ROW facilities through crucial wildlife habitat would be evaluated. Where deemed feasible, consolidation of facilities would be implemented for critical areas. Consolidation of parallel overhead powerlines in crucial sage-grouse habitat, where feasible, may result in less predation from perching raptors. Federal agency requests for new withdrawals would be recommended for approval only if they would limit commodity production and protect natural values.

No new effects to bighorn sheep and other resources from communications development would occur at Buckskin Mountain. When the existing facilities become obsolete and are removed there would be less human disturbance to the sheep in that area from communications operation and maintenance activity. These management actions, along with others for Alternative C, would minimize disturbance effects to wildlife.

Transportation and Roads. Transportation systems would be managed to meet resource goals and objectives consistent with emphasizing the protection of natural values. To the extent that this results in road closures, seasonal closures, and other limitations, disturbance effects to special status species and their habitat would be minimized and would be similar to Alternative B.

Off-Highway Vehicles. Management for minimal OHV and mechanized vehicle use, including limiting OHV and mechanized vehicle use to designated roads and ways across the Planning Area, would result in reduced disturbance to special status species and their habitats. Seasonal area closures and closing unneeded roads would also reduce disturbance to special status species and their habitats through reducing access and human disturbance.

Recreation. To the extent that recreational use would be focused away from critical habitat of special status species (e.g., nests, lek sites), disturbance to special status animal species would be reduced. Some disturbance and displacement would be expected, but concentrated recreation use could result in the loss of special status animal species habitat. To the extent that dispersed recreation increases and consistently overlaps with special status species habitat, special status species could temporarily alter their use patterns or be permanently displaced.

4.7.2.3.5 Proposed RMP

Direct Effects

Management would be similar to Alternatives B and C except for the following: Bat gates would be installed at the entrances of abandoned mines to protect known roost sites from disturbance by recreationists. Specific crucial sites, such as mines known to contain large numbers of hibernating individuals or high density maternity roosts, would be considered for withdrawal from mineral entry.

Big sagebrush habitat would be managed for the benefit of special status species to meet the DRC in most big sagebrush habitats throughout the Planning Area. Habitat management would be coordinated across agency boundaries, which would increase the likelihood of successfully accomplishing goals and objectives relating to sage-grouse and other special status species.

Management would be in accordance with the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush Steppe Ecosystem Management Guidelines. This would result in better survival of fledglings by minimizing

the effects of actions that could cause mortality, and would require other resources and uses to be managed so that identified goals and objectives for sage-grouse would be met, improving long-term range conditions.

The management actions for the reintroduction of Columbia sharp-tailed grouse, mountain quail, and other species would be the same as for Alternative A. The effects of these management actions are similar to those described for Alternative A.

The management actions associated with transplants, reintroductions, and natural expansion of bighorn sheep populations; habitat improvements in historic range; and trapping by the ODFW when bighorn numbers exceed management objectives, would be the same as for Alternative A. The effects of these management actions would be similar to those described for Alternative A.

Implementation of BLM's Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats would allow for keeping wild sheep and domestic sheep and goats from mixing, thereby avoiding the chance of disease transmission. Where domestic sheep use occurs on private land near bighorn sheep habitat, the BLM would seek cooperation with the private land owner or owner of the domestic sheep to prevent mixing and the possibility of disease transmission.

The management action to identify up to ten sites for construction of low visual impact, natural appearing water sources or wildlife guzzlers in historic bighorn sheep habitat would be the same as for Alternative A. The effects of this management action would be similar to those described for Alternative A.

Indirect Effects

Soils and Biological Soil Crusts. The management goals and objectives of the soils and biological soil crusts would be directed toward promoting soil stability and reducing erosion. The emphasis on restoration and rehabilitation of soils and other natural resource values would produce similar effects as Alternative C. Improvements in soil conditions would promote stable plant communities which could improve habitat for sage-grouse.

Riparian and Wetlands. The ecological status objectives would be dependent on meeting multiple resource objectives. Similar to Alternative C, management of existing grazing systems and recreation would be directed toward improvements to maintain PFC and promote an advanced ecological status. The rate of progress toward achieving an advanced ecological status for restoration of riparian and upland vegetation would be expected to increase because both active and passive measures would be used. Suitable habitat conditions for special status species would develop sooner under these management actions.

The effects of the following management actions would be similar to the effects described for Alternatives A and B, respectively: 1) the establishment of sources of localized tree and shrub source material for restoration, and 2) expansion of restoration actions to include isolated stands of riparian vegetation. The effects of roads within or providing access to riparian areas would be similar to those described in Alternative B. Beaver populations would be managed as in Alternative C and the effects would be the same as those described in Alternative C.

Woodlands. Although the management actions for woodlands would be different under the Proposed RMP than under Alternatives A, B, and C, the effects on special status species would be the same as those described under those alternatives. In parts of the Planning area, juniper has invaded areas that were once mainly dominated by big and low sagebrush. This belt of juniper, approximately 200,000 acres, has divided lower and upper elevations of sage-grouse habitat. While sage-grouse still travel through this juniper belt seasonally, the area was probably nesting and brood-rearing habitat before juniper dominance. Using wildland and prescribed fire to reduce the dominance of juniper, in combination with reseeding where needed, sage-grouse habitat would be restored over the long term. The extent of this treatment on an annual basis would be about 10,000 acres per year. Approximately 50 percent of the 10,000 acres would be burned, with some areas such as dense juniper stands and juniper invaded aspen stands receiving more intense treatment than area of pure sagebrush or sagebrush with few junipers. Low sage areas with juniper may be treated differently, as the return of this vegetation type after fire can be up to 100 years. These actions would be accomplished so that treatments in successive years were separated spatially across the landscape. This would allow time for assessing natural recovery, or determining whether reseeding would be needed to restore sagebrush habitats. The long-term goal

as stated in Appendix P would be to have a landscape with ten to 30 percent juniper cover and 70 to 90 percent sagebrush/grassland cover.

The effect of not completing these actions over the life of the RMP would essentially be a loss of habitat for sage-grouse on a continuing basis. Junipers would continue to expand downward in elevation to occupy intact sagebrush/grassland habitats. Evidence of this type of expansion has occurred in many of the drainages in the Steens and surrounding areas. Sage-grouse habitat would slowly be lost as would vegetative species diversity. Restoration of sage-grouse habitat would be less likely to succeed and would require a longer time period under this scenario.

The management action to develop markets for the byproducts of juniper removal could result in additional disturbances to special status species in certain locations, and would be analyzed on a case-by-case basis. While some short-term disturbance to sage-grouse may occur, the reduction in juniper and restoration of sagebrush habitat would improve sage-grouse and sagebrush dependent species habitat in the long term. Mitigating measures to reduce the short-term effects to sage-grouse could be developed during analysis of specific proposals.

Rangelands. Grazing systems and range improvements designed to improve ecological conditions would have similar effects as those described in Alternative A. Because the emphasis would be on balanced cooperative management practices, the ecological status of native plant communities would be maintained or improved. Actions to diversify the structure and composition of selected nonnative seedings, consistent with resource objectives, would be implemented. These actions would also maintain or improve suitable habitat for special status species.

Desirable nonnative seedings would be managed to maintain vegetation composition and meet S&Gs. To the extent that nonnative seedings would be maintained in place of sagebrush habitat, a loss of habitat for sagebrush dependent species would occur.

The following management actions could reduce suitable habitat for special status species in the short term, but in the long term, they would increase the amount and diversity of suitable habitat for special status species: 1) Interseeding approximately 10,000 acres or more of nonnative seedings to establish native plants throughout the Planning Area where vegetative diversity is low. The emphasis would be on reestablishing native species, but other desirable nonnative species could be used in the seeding mix where appropriate; 2) Brushbeating of sagebrush in a mosaic pattern on 50 percent of seeded areas with high brush cover; 3) Restoring plant communities that do not meet the DRC due to dominance by annual or invasive species or invasive juniper would be restored. Native and nonnative species would be seeded where appropriate; and 4) Using prescribed fire and wildland fire would be used to create a mosaic of multiple successional stages, reduce the dominance of woody vegetation, and release suppressed desirable plants. The potential effects of these actions would be the same as those previously described for Alternatives A, B, and C.

The following actions would be specifically for sage-grouse: 1) Interseeding approximately 10,000 acres of nonnative seedings throughout the Planning Area at 500 to 1,000 acres per year would attempt to establish sagebrush and other native grasses and forbs into what is presently a monoculture of crested wheatgrass. Depending on the availability of native seed, other desirable nonnative grasses and forbs may be used in the seed mix to increase species diversity. The pattern of seeding would help to establish habitat connectivity between native plant communities that are divided by seedings. The success of establishing sagebrush and native grasses and forbs would determine the overall effect of increasing habitat connectivity. 2) Brushbeating could be used to reduce the dominance of sagebrush in existing seedings where sagebrush cover is high. Over the life of the RMP, brushbeating would involve approximately 2,000 acres per year, on average, and would occur on approximately 50 percent of the seeded area in a mosaic pattern that would retain hiding cover and connectivity of surrounding sagebrush habitats. In many of the treated areas, not all sagebrush is killed; many young plants survive, with the result that sagebrush may return to pretreatment levels within ten to 15 years. 3) Restoring plant communities that do not meet the DRC due to dominance by undesirable nonnative species or invasive juniper. 4) Using prescribed and wildland fire to create of a mosaic of multiple successional stages, would reduce the dominance of woody vegetation and would release suppressed desirable plants. These actions would work together to improve sage-grouse habitat. In parts of the Planning area, juniper has invaded areas that were once mainly dominated by big and low sagebrush. This belt of juniper, approximately 200,000 acres, has divided lower and upper elevations of sage-grouse habitat. While sage-grouse still travel through this juniper belt seasonally, the area was probably nesting and brood-rearing habitat before juniper dominance. Using wildland and prescribed fire to reduce the dominance of juniper, in combination with reseeding where needed, sage-grouse habitat would be restored over the long term. The extent of this treatment on an annual basis would be about 10,000 acres per year. Approximately 50 percent of the 10,000

acres would be burned, with some areas such as dense juniper stands and juniper invaded aspen stands receiving more intense treatment than area of pure sagebrush or sagebrush with few junipers. Low sage areas with juniper may be treated differently, as the return of this vegetation type after fire can be up to 100 years. These actions would be accomplished so that treatments in successive years were separated spatially across the landscape. This would allow time for assessing natural recovery, or determining whether reseeding would be needed to restore sagebrush habitats. The long-term goal, as stated in Appendix P would be to have a landscape with ten to 30 percent juniper cover and 70 to 90 percent sagebrush/grassland cover.

Noxious Weeds. Treatment for noxious weeds under this alternative would be similar to Alternative A, utilizing integrated management. Emphasis on protection and restoration of natural values would provide accelerated recovery rates and improved habitat conditions. To the extent that these actions would successfully protect or allow for restoration of sagebrush steppe plant communities, sage-grouse habitat would also be protected or restored.

Fish and Wildlife. Throughout the Planning Areas, approximately 10,000 acres or more of nonnative seedings (discussed above) and most of the native vegetation with low vegetative diversity in deer winter range would be interseeded to establish native plant species. Nonnative plant species could be used where appropriate. Livestock grazing would be used to suppress competition and allow sagebrush to become established. To the extent that sagebrush would be successfully reestablished, suitable habitat for sagebrush dependent special status species would improve.

The effects of improvements or restoration of fish and wildlife habitat through wildland fire, other vegetation manipulations, water developments, and other measures would be the same as those identified in Alternative A. Fences could also impede the movement of special status species and potentially cause mortality due to entanglement. Continued compliance with BLM fencing requirements would reduce these potential effects.

Energy and Minerals. See Effects Common to All Alternatives. In addition, areas containing federally listed species and their critical habitat would be closed to locatable minerals activities, subject to seasonal or other special leasing stipulations, and closed to salable minerals activities. Twenty-seven percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on special status animal species habitat in that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that would be open under this alternative that have high potential for leasable geothermal resources; 281of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open. As determined by the BLM authorized officer on a case-by-case basis where it conflicts with other resources, salable mineral development may not be permitted.

Wild Horses and Burros. The potential effects of management actions associated with wild horses would be the same as those described for Alternative B.

Grazing Management. Under this alternative, the development of grazing management prescriptions both in the AMU and in the CMPA would be designed to meet natural resource objectives. The effects of this action on special status species would be to maintain habitat with some improvements over the long term similar to those described for Alternative A.

Wildland Fire Management. Management actions and their effects on special status species would be similar to Alternative C. However, a mixture of native and desirable nonnative species would be used to enhance economic and natural resource values for the rehabilitation of burned areas and areas altered by fire suppression. This could allow greater options for resource managers and the possibility of more rapid rehabilitation of sites. Consequently, the development of suitable habitat for special status species could occur more quickly compared to using only native species.

Lands and Realty. The acquisition of land with high public resource values would be emphasized, potentially providing increased habitat for special status species. WSAs and ACECs would be managed as ROW and realty use avoidance areas, thereby reducing the potential effects to special status species due to ROW construction and maintenance activities. Access control in sensitive areas would not be emphasized, potentially increasing effects to special status

species. All large scale facilities would be encouraged to locate in the designated corridors. Failure to do so would increase disturbances to wildlife and contribute to habitat loss. New withdrawals and modifications would be considered on a case-by-case basis.

Existing effects to bighorn sheep and other resources from communications development at Buckskin Mountain would continue. Additional disturbance may occur to the sheep from human activity associated with added communications development. However, implementation of a communications site plan would limit surface and other environmental disturbance, facilitate efficient timely communications development, and reduce conflict among users. Effects to sheep by communications development would also be limited by low demand for facilities, remoteness, and small population in the service area.

Consolidation of parallel overhead powerlines in critical sage-grouse habitat, where feasible, may result in less predation from perching raptors.

Transportation and Roads. For existing transportation and roads management, this alternative would result in management that meets resource goals and objectives, but that strikes a balance between cultural, economic, ecological, and social values. The effects of this alternative on special status species would likely be increased from Alternatives B and C, and decreased from Alternative A.

Off-Highway Vehicles. OHV and mechanized vehicle use would be managed in accordance with Proposed RMP OHV designations. The BLM would seek cooperative agreements with OHV and mechanized vehicle clubs and other participants. The effects would be similar to those described in Alternative C except for use on the Alvord Desert playa, which could affect snowy plover nesting habitat.

Recreation. Tourism opportunities and recreation developments would be allowed only if consistent with other resource objectives, thereby minimizing disturbance to special status animal species. Development of new recreation sites would be consistent with the protection of natural values, which would also help to minimize disturbance to special status animal species.

4.7.2.3.6 Alternative E

Direct Effects

The effects of bat gate installation would be the same as those described for Alternative A.

Big sagebrush would be reestablished where economically important special status species would be present. The emphasis on game species, such as mule deer, could indirectly create habitat conditions suitable for other special status species. Management would occur to the extent practicable with the Migratory Bird Executive Order and the Greater Sage-Grouse and Sagebrush Steppe Ecosystem Management Guidelines.

Whether or not habitat improvements would be needed in order to create suitable habitat for reintroduced Columbia sharp-tailed grouse, mountain quail, and other species would be determined. Implementation of any necessary habitat improvements prior to reintroductions would increase the likelihood of establishing successful, self-sustaining populations of these special status species. Introductions would not occur in areas where economic effects would be demonstrated. This could potentially limit the number of suitable locations for reintroductions.

The management actions associated with bighorn sheep transplants, reintroductions, and natural expansion of populations; habitat improvements in historic range; and trapping by the ODFW, when they determine that excess animals were available, would be the same as for Alternative A. The effects of these management actions would be similar to those described for Alternative A. The management action to identify up to ten sites for construction of low visual impact, natural appearing water sources or wildlife guzzlers in historic bighorn sheep habitat would be the same as for Alternative A. The effects of this management action would be similar to those described for Alternative A.

Implementation of BLM's Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats would allow for keeping wild sheep and domestic sheep and goats from mixing, thereby avoiding the chance of disease transmission. Where domestic sheep use occurs on private land near bighorn sheep habitat, the BLM would

seek cooperation with the private land owner or owner of the domestic sheep to prevent mixing and the possibility of disease transmission.

Indirect Effects

Soils and Biological Soil Crusts. The management goals and objectives of the soils and biological soil crusts would be directed toward promoting soil stability and reducing erosion. These goals and objectives should maintain and possibly improve special status species habitats both in the long and short term.

Riparian and Wetlands. Management of existing grazing systems would be directed toward providing maximum use while maintaining or progressing toward PFC. Active restoration of both upland and riparian communities would be pursued to provide sustainable livestock forage, soil stability, and aesthetics, and would not emphasize ecological status. These management actions could reduce habitat suitability for special status species.

Management of roads within and providing access to riparian areas would be similar to Alternative A, with additional emphasis on the development of additional roads to promote commodity production and public uses. Potential effects to special status species due to disturbance would be more likely to occur than under any of the other alternatives. If new roads were located in meadow habitat, they could cause loss of suitable foraging habitat for a variety of special status species. Frequent use of such roads could cause indirect loss of the remaining habitat.

The effects of management actions for beaver would be the same as those described under Alternative A.

Woodlands. The effects of management actions would be similar to those described for all other alternatives. The management action to develop markets for byproducts of juniper removal could result in additional disturbances to special status species in certain locations, and would be analyzed on a case-by-case basis.

Rangelands. Production of native, herbaceous and shrubby vegetation for commodity uses within the constraints of other resource management objectives would be emphasized. Restoration of existing nonnative seedings in poor or fair condition could maintain or improve habitat conditions for special status species to the extent that the restored areas would be available for their use. The use of interseeding to establish native and other desirable nonnative plant species on approximately 5,000 acres of low diversity, nonnative seedings would increase habitat suitability for special status species. The emphasis on commodity production would mean that rangeland treatments would be less likely to develop habitat conditions suitable for sagebrush dependent special status species.

Areas dominated by cheatgrass or an overstory of sagebrush with a few herbaceous plants would be rehabilitated with species that would provide optimal forage and vegetative cover. This could increase suitable habitat conditions for sagebrush dependent special status species proportional to the amount of rehabilitation that occurs. Plant communities dominated by undesirable invasive species or invasive juniper would be rehabilitated with plant species that would provide optimal forage and vegetative cover for livestock. This could also improve habitat conditions for sagebrush dependent special status species to the extent that plant species used for rehabilitation provide suitable nesting and foraging habitat. Other management actions, including reduction of woody vegetation and management of big sagebrush habitat, would also increase habitat availability. Reductions in fuel loading (i.e., reduction of woody vegetation) would decrease the likelihood of catastrophic fire, which would reduce the potential loss of large portions of special species habitat.

Brushbeating or disking a maximum of 75 percent of nonnative seedings with high shrub cover would be conducted to release grass species and preserve maximum production. This could increase the potential effects to special status wildlife species and their habitat from those described in Alternative C, but similar methods to minimize any effects could be implemented. Effects to sage-grouse would increase through decreased cover, as this amount exceeds that set forth in the Greater Sage-Grouse and Sagebrush Steppe Management Guidelines.

Plant communities that do not meet the DRC due to dominance by annual or invasive species or invasive juniper would be rehabilitated. Seeded species would be those that provide for optimal forage and cover production. To the extent that such species do not provide suitable habitat for special status species, habitat suitability would decline.

Prescribed fire and wildland fire would be used to create a mosaic of multiple successional stages, reduce the dominance of woody vegetation, and release suppressed desirable plants. This would have the same effects as those described in Alternative B. Similar to Alternative A, mechanical removal of woody vegetation would be used to create structural mosaics, but under this alternative it would be used only on selected sites, thereby reducing any potential effects to special status species.

Big sagebrush habitat would be managed for the benefit of game species where present and would be managed to meet the DRC in some big sagebrush habitats throughout the Planning Area. This alternative may not meet the habitat conditions required by sagebrush dependent special status species. Big sagebrush, quaking aspen, and western juniper habitat types would be managed where economically important wildlife would be present. Big sagebrush would be reestablished where economically important game species are present. To the extent that these areas would be used by special status species, habitat conditions would be maintained or improved.

Noxious Weeds. Treatment for noxious weeds under this alternative would be similar to Alternative A, using integrated management. Priority would be given to high quality natural resource areas, which may provide slightly higher water resource benefits than in Alternative A, where priority would be to roads, ROWs, and recreation sites.

Fish and Wildlife. Throughout the Planning Area, approximately 5,000 acres nonnative of seedings (discussed above) and some native vegetation with low vegetative diversity in deer winter range would be interseeded to establish native and other desirable nonnative plant species. Livestock grazing would be used to suppress competition and allow sagebrush to become established. The potential effects of this management action would be similar to those described for the Proposed RMP, but would occur on fewer acres. This management action could contribute to an increase in suitable habitat for sagebrush dependent special status species. Habitat availability could increase to the extent that the reseeding occurs near habitat occupied by special status species or that it creates conditions that could eventually be used by special status species.

Opportunities would be identified and implemented to improve or restore fish and wildlife habitat through wildland fire, other vegetation manipulations, limited fence removal, water developments, and other measures. However, these improvements would also benefit livestock, which might limit their effectiveness in improving habitat for special status species.

Energy and Minerals. Minerals management would be conducted the same as under Alternative A; therefore, the indirect effects on special status animal species habitat would be the same as Alternative A.

Wild Horses and Burros. Under this alternative, the South Steens HMA would be expanded to include some areas such as Alvord Peak, where wild horses were removed in the late 1970s. One reason for this removal was the conflict of managing wild horses in bighorn sheep habitat. Returning wild horses to areas inhabited by bighorns could reduce the habitat available for bighorn sheep. Wild horses could also affect riparian resources and sagebrush steppe habitat that would be used by several special status species migratory birds and sage-grouse. If Alternative E's emphasis on livestock grazing authorization resulted in increased livestock use in HMAs, then long-term trends toward a decline in rangeland condition could occur if monitoring were not rigorously adhered to, and any needed adjustments in AMLs would not be implemented. Such a situation could degrade suitable habitat conditions for special status species.

Grazing Management. Livestock grazing opportunities would be maximized under this alternative. The increased emphasis on livestock grazing would more likely cause some of the potential effects described in Alternative A. Although S&Gs would be used to guide management, this alternative does not provide for the emphasis on other resource objectives in allotment planning as do other alternatives. Depending on where the increased use occurred, some decline in habitat suitability for special status species could occur if the increased use resulted in a decline in rangeland conditions.

Wildland Fire Management. All wildland fires would be suppressed using appropriate management actions. The effects of this management action would be the same as those described under Alternative A. Rehabilitation of all burned areas with a mixture of native and introduced plant species would be used to provide maximum economic production. Following rehabilitation, an increase in the extent of introduced plants compared to pre-fire conditions could result in a decline in suitable habitat for special status species. If native plants are prevented from reestablishment within the rehabilitated areas, long-term loss of habitat suitable for special status species could occur. A plan to manage fires for

resource and economic benefit would be developed. Although economic benefits would be prioritized under this alternative, other resources, such as big game winter habitat would be likely to receive a similar high priority. Suitable habitat for special status species would be provided to the degree that these species occur in the prioritized habitat types.

Lands and Realty. Acquisition of land with high commodity values would be emphasized over lands with high natural resource values. In the long term, disturbance effects to wildlife could increase if commodity uses increase. As in the Proposed RMP, some special designations would be managed as ROW and realty use avoidance areas, reducing potential disturbances to wildlife from ROW construction and maintenance activities. Similar to the Proposed RMP, access control in sensitive areas would not be emphasized, potentially increasing disturbances to special status species. The feasibility of consolidating existing parallel utility ROW facilities through crucial wildlife habitat would be evaluated, but no action would be taken to consolidate the facilities. Construction of new powerline projects located near sage-grouse lek sites could alter habitat use, cause abandonment of lek sites, and increase predation rates due to the development of perch sites for raptors. No new protective withdrawals would be considered. This action, along with other management actions under this alternative, would increase the disturbance effects to special status species. The absence of action to consolidate existing parallel overhead powerlines may result in continued predation from perching raptors on sage-grouse, visual intrusions, and other environmental disturbance.

Existing effects to bighorn sheep and other resources from communications development at Buckskin Mountain would continue. Additional disturbance may occur to the sheep from human activity associated with added communications development and may be exacerbated by disorganized, inefficient development due to the absence of a communications site management plan. However, these effects to sheep by communications development would be limited by low demand for facilities, remoteness, and small population in the service area.

Transportation and Roads. Transportation and roads would be managed for the benefit of commodity production. Road closures would be the least extensive under this alternative, and maintenance requirements would be higher. New road development would be encouraged. Under this alternative, the operation and maintenance of roads would be more likely to cause disturbance effects to special status species than would occur under the other alternatives. The extent of the disturbance would vary depending on the proximity of roads to critical habitat needed by special status species.

Off-Highway Vehicles. Management actions would maximize OHV and mechanized vehicle use with respect to all other alternatives. The potential for disturbance to special status animal species and their habitat from OHV and mechanized vehicle use would be highest under this alternative.

Recreation. Increased recreation opportunities and use would result in greater disturbances to special status animal species. To the extent that new recreational developments or increased dispersed recreation occurs in or near areas regularly used by special status animal species, these species could be permanently displaced from important habitat. Overall, increased recreation use would result in greater effects to special status animal species and their habitats. The effects would be similar to those described in Alternative A.

4.7.2.4 Summary of Effects

Under Alternative A, habitat for sagebrush dependent species would continue to slowly decline over time. However, identification, conservation, and aggressive fire suppression activities within remaining blocks of sagebrush habitat where ecological integrity would still be high would offset this decline. Some restoration of degraded sagebrush habitat would occur, but this would not be a priority area of focus for restoration. Maintaining nonnative seedings to promote forage production would continue the declining trend in sagebrush dependent species. The management goals would be met over the life of the RMP; however, no large increase in sagebrush dependent species or their habitat would be expected to occur. The potential disturbance effects due to energy and minerals and recreation would be less under Alternative E, comparable to Alternative C, but greater than Alternatives B and C.

Special status species habitat would continue to improve, although recovery rates and extent of recovery would be reduced to allow for commodity uses, including livestock, transportation, and recreation. Management would continue on a case-by-case basis on a site specific level with less consideration for watershed scale effects.

Under Alternative B, reliance on natural processes and passive management actions could result in wildland fires that destroy a large proportion of sagebrush habitats in the Planning Area. Less extensive restoration on lands burned by

wildland fire could result in decreased habitat availability for sagebrush dependent species. The management goal for this objective would not be met under this alternative, and sagebrush dependent species would decline at a greater rate than under Alternative A. The potential disturbance effects due to energy and minerals and recreation would be less under Alternative B compared to all other alternatives.

Under Alternative C, remaining blocks of sagebrush where ecological integrity would still be high would be closely monitored and conserved. Restoration priorities would be given to those areas of sagebrush that would be in moderate to low ecological condition. Active restoration would move areas in moderate and poor condition toward higher ecological integrity and offset the declining trend. Close monitoring of grazing activities to allow enough residual grasses to remain on site would offset any declining trends. Sagebrush dependent species would be expected to increase over the life of the RMP at a moderate rate. Alternative C would meet the management goal faster than all other alternatives. The potential disturbance effects due to energy and minerals and recreation would be less than in Alternatives A, E, and the Proposed RMP. Recovery rates would be faster than under all other alternatives, which would result in better special status wildlife species habitat conditions. Consideration of watershed scale effects would result in more stable conditions. Emphasis on protection and restoration of natural values would achieve the management goal for special status species.

Under the Proposed RMP, effects would be similar to Alternative C. While restoration of sagebrush would still be a priority, it would be achieved at a slower rate compared to Alternative C. Recovery rates for other habitat types would require more time and would be slower than Alternative C. However, the management goal would be met under this alternative. The potential disturbance effects due to energy and minerals and recreation would be less than Alternatives A and E, comparable to Alternative C, but greater than Alternative B.

Under Alternative E, effects would be similar to Alternative A. However, increased emphasis on commodity production would reduce benefits to sagebrush habitat and sagebrush dependent species. Restoration would be focused in commodity production areas. Commodity production areas would receive fire suppression priorities over other resources. Sagebrush dependent species would continue to decline over the life of the RMP. The management goal for this objective would not be met within the life of the RMP. The potential disturbance effects due to energy and minerals and recreation would be greatest under Alternative B compared to all other alternatives.

4.7.2.5 Cumulative Effects

Past and potential cumulative effects to special status animal species fall into the general categories of habitat loss, destruction of populations or individual animals, habitat conversion to less than marginal habitats, and loss of habitat connectivity and variability. Recent management actions to attain and maintain the DRC or similar resource objectives has resulted in improvement in vegetation community structure and function, with associated improvements in habitat supporting special status animal species. Management actions under any of the alternatives would be employed to assess the condition and trend of known populations, inventory for new occurrences, and protect specific habitats so that populations can be maintained or increased. Under each alternative, special status animal species and habitat would be protected in order to prevent listing as threatened or endangered in accordance with BLM policy. The management emphasis specific to each alternative (as summarized above) would determine the type and degree of cumulative effects on special status animal species.

Historically, cumulative effects to sagebrush habitat from overgrazing and fire suppression have contributed to a decline in habitat quality for special status species that are sagebrush obligates (eg. sage-grouse and pygmy rabbit). In addition, the invasion of exotic species such as cheatgrass has led to a reduction in understory grasses and forbs and has left much of the remaining big sagebrush habitat in moderate to low ecological condition. Without major investments in restoration, these trends would continue. Alternatives that support active management (i.e., juniper thinning, prescribed fire, noxious weed management) and restoration would increase habitat for sagebrush dependent special status species.

4.7.3 Fish

4.7.3.1 Goal and Objective

Goal - Maintain, restore, or improve special status plant populations and animal habitats; manage public lands to conserve or contribute to the recovery of threatened or endangered species; and prevent future ESA listings.

Objective 2. Conserve special status animal species and the ecosystems on which they depend.

4.7.3.2 Assumptions

Pursuant to the ESA, the BLM would continue to consult with the USFWS on any actions that may affect federally protected species or designated critical habitat. Interagency consultation would promote management actions that would not jeopardize the continue existence of federally threatened or endangered species, and that would minimize or avoid adverse effects of management actions on these species. Additionally, management actions would be pursued that contribute to the conservation or recovery of threatened or endangered species.

Conservation of special status fish species on public lands would be associated with aquatic habitat. Maintenance, restoration, or improvement of habitat would primarily be addressed through management of water and riparian vegetation resources. Salmonid and resident fish habitat is a designated beneficial use in the Planning Area and would be subject to water quality criteria established by the state. WQRPs would be developed and implemented to restore water quality specific elements of fish habitat, such as water temperature.

As a result of the Steens Act, the public lands within Borax Lake chub designated critical habitat have been withdrawn from locatable and leasable mineral entry and closed to salable mineral removal. This action eliminated the threat of geothermal energy development on public lands surrounding Borax Lake, a primary issue that prompted listing of the Borax Lake chub as endangered and designated critical habitat pursuant to the ESA. Borax Lake, the primary habitat for Borax Lake chub, is located on private land owned by TNC.

The majority of public land stream miles that provide habitat for redband trout, Catlow tui chub, and Malheur mottled sculpin is within the Steens Mountain Wilderness. Many of these streams are also designated segments of the WSR system that recognizes fish habitat as an ORV and regulates management to protect and enhance fish habitat.

The Lahontan cutthroat trout is listed as threatened under the ESA. The development of WQRPs for the streams occupied by this species would identify activities in these watersheds to maintain or restore water quality that supports Lahontan cutthroat trout habitat.

4.7.3.3 Analysis of Alternatives

4.7.3.3.1 Effects Common to All Alternatives

Direct Effects

Fish and wildlife habitat monitoring would be coordinated with other responsible agencies and cooperators. Monitoring would help to promote management of special status species habitat and populations for conservation or recovery by providing information for adaptive management decisions.

Indirect Effects

Off-Highway Vehicles. For OHV and mechanized vehicle use in the Borax Lake ACEC/area, designating the Borax Lake ACEC/area as closed or limited to designated roads would protect special status species (Borax Lake chub) habitat.

Recreation. The Borax Lake chub could be affected by persons swimming or wading in Borax Lake. This disturbance could temporarily disrupt feeding or spawning behavior.

4.7.3.3.2 Alternative A

Direct Effects

Special status species habitat would be managed for conservation or recovery. Additional management actions may not be required or may be minimal where special status species habitat occurs in wilderness, WSRs, ACECs, or are covered by biological opinions of the USFWS, recovery plans, or conservation agreements. For areas not included in the above description, additional management actions may be developed and implemented through activity plans, such as

modification of grazing or recreation management, or restrictions on vehicle access. This management action would promote viable populations of special status fish, and may preclude future listings.

Indirect Effects

Potential indirect effects to special status aquatic species resulting from management actions in other resources would be described for this alternative in the water resources, and fish and aquatic habitat sections of this document. These effects include fine sediment delivered to streams, which could result from the following: 1) decreases in riparian vegetation density and coverage, or from soil compaction; 2) increases in stream temperature due to decreased riparian vegetation; or 3) reduction in physical habitat or habitat complexity due to direct disturbance and resulting streambank instability. However, under this alternative, the management action described above to conserve or recover special status species and habitat would promote management actions to conserve or restore habitat.

4.7.3.3.3 Alternative B

Direct Effects

Except for critical habitat, natural processes would be allowed to define special status species habitat. Where habitat for special status species would be degraded, this management may not promote conservation or recovery. Erosion may continue, and noxious weeds may spread, both of which lead to increased sedimentation and reduce available habitat. In other areas, natural processes should provide for maintenance or continued improvement of habitat conditions, although improvements may be slower than in alternatives where active restoration occurs.

The Borax Lake chub would likely be eligible for downlisting to "threatened" or delisted from the ESA as a result of permanent protection from threats identified in the Recovery Plan for the Borax Lake Chub.

Indirect Effects

As described in Alternative A, potential indirect effects to special status aquatic species resulting from management actions in other resources for this alternative would be described in the water resources and fish and aquatic habitat sections of this document. Although the potential for indirect effects to special status species does exist, the effects would be limited in scope and nature, resulting from exclusion of commodity production on public lands within the Planning Area.

4.7.3.3.4 Alternative C

Direct Effects

As in Alternative A, special status species habitat would be managed for conservation or recovery, with the same effects.

As in Alternative B, <u>the Borax Lake chub would likely be eligible for downlisting to "threatened" or delisted from the ESA as a result of permanent protection from threats identified in the Recovery Plan for the Borax Lake Chub</u>, with the same effects.

Indirect Effects

As described in Alternative A, potential indirect effects to special status aquatic species resulting from management actions in other resources for this alternative would be described in the water resources and fish and aquatic habitat sections of this document.

<u>Areas of Critical Environmental Concern</u>. <u>Closure of the Borax Lake ACEC to livestock grazing, future ROWs and realty actions, OHV and mechanized vehicle use, and general vehicle access would provide protection for the Borax Lake chub critical habitat. This would also likely reduce or eliminate OHV and mechanized vehicle use on the private inholding that contains Borax Lake, the primary habitat for Borax Lake chub. Protection includes elimination or reduction of disturbance to the lake shore and riparian habitat, and reducing the threat of introduction of exotic species to Borax Lake.</u>

Eliminating vehicle access could limit or preclude education/interpretive opportunities associated with Borax Lake chub and their habitat that promote public awareness and conservation of the species.

4.7.3.3.5 Proposed RMP

Direct Effects

As in Alternative A, special status species habitat would be managed for conservation or recovery, with the same effects.

As in Alternatives B and C, the Borax Lake chub would likely be eligible for downlisting to "threatened" or delisted under the ESA as a result of permanent protection from threats identified in the Recovery Plan for the Borax Lake Chub.

Indirect Effects

As described in Alternative A, potential indirect effects to special status aquatic species resulting from management actions in other resources for this alternative would be described in the water resources and fish and aquatic habitat sections of this document.

Areas of Critical Environmental Concern. Same as Alternative C, except OHV and mechanized vehicle access would be limited to designated routes rather than closed. This would provide protection for Borax Lake chub while providing access for observation, and education/interpretation opportunities.

4.7.3.3.6 Alternative E

Direct Effects

Special status species habitat would be managed with an emphasis on game species. For most special status species, this would have the same effects as under Alternative A. For Malheur sculpin, which occur with redband trout throughout their range, management for redband trout would also benefit the sculpin. Alvord chub, however, may occur in habitats that do not contain game fish. In these cases, the emphasis on game species under this alternative may not provide the same level of conservation for these species.

As in Alternative A, current management of designated critical habitat for the Borax Lake chub would continue, with the same effects.

Indirect Effects

As described in Alternative A, potential indirect effects to special status aquatic species resulting from management actions in other resources for this alternative would be described in the water resources and fish and aquatic habitat sections of this document.

The one exception to this would be the addition of the Dry Creek and Big Springs pastures in the Fish Creek-Big Indian Allotment, and the Carlson Creek Allotment, Serrano Point Allotment, and Bone Creek and Miners Field pastures of the Alvord Peak Allotment that would return wild horses to areas where they have not been since the 1970s. This area includes Bone Creek which is habitat for the Alvord chub, a special status species. Returning wild horses to this area could potentially affect chub habitat and population by affecting water quality and riparian resources such as stream temperature, bank stability, vegetative diversity, cover and density. Since fencing at the north end of the Serrano Point Allotment would not be sufficient to stop horse movements, wild horses could potentially reach streams to the north along the east side of Steens Mountain that contain Lahontan cutthroat trout, which are federally listed as Threatened. The same effects as described for Alvord chub habitat could occur if horses reach streams containing Lahontan cutthroat trout.

4.7.3.4 Summary of Effects

Under all alternatives, special status species habitat would be managed to conserve or recover these species and their habitat, reducing potential effects. Indirect effects would be further reduced under Alternative B primarily because many

management actions with the potential to affect special status species and their habitat (e.g., livestock grazing) would not occur. However, active restoration of special status species habitat or populations may not occur under Alternative B, which may restrict the potential to restore or conserve populations and habitat in some areas that have been disturbed. Indirect effects would be greatest under Alternative E due to the emphasis on commodity production and reduced emphasis on nongame species. Although Alternative E would emphasize commodity production and public uses, BMPs would be developed and implemented to minimize direct and indirect effects to special status species and their habitat. For example, riparian exclusion may be implemented where timing or intensity of grazing to promote commodity production can be assumed to fail to meet riparian vegetation and water quality objectives.

4.7.3.5 Cumulative Effects

The cumulative effects of management actions on special status aquatic species would be reduced under Alternative B, since many management actions having the potential to affect these species (e.g., livestock grazing or energy and mineral development) would be substantially reduced or eliminated. Cumulative effects would also be reduced under Alternative C, which has an overall emphasis of protecting and restoring habitat. Although management actions in other resources that have the potential to affect special status species would occur under Alternative A and the Proposed RMP, the potential for cumulative effects would be reduced through an emphasis on conservation or recovery of special status species and habitat. Conceptually, the potential for cumulative effects would be greatest under Alternative E, since many of the management actions emphasized to promote commodity production and public uses could contribute to cumulative effects. However, potential effects would be minimized or mitigated through application of BMPs.

4.7.4 Redband Trout Reserve

4.7.4.1 Goal and Objectives

Goal - Manage the RTR to conserve, protect and enhance the Donner und Blitzen population of redband trout, and provide opportunities for scientific research, environmental education, and fish and wildlife oriented recreation.

Objective 1. Define the RTR boundary.

Objective 2. Maintain genetic integrity of redband trout in the RTR.

Objective 3. Increase the distribution and abundance of redband trout in the RTR through natural production.

4.7.4.2 Assumptions

The intent of designating the RTR was to emphasize protection of the Donner und Blitzen River and riparian ecosystem, and the redband trout that depend on this system. Under any of the alternatives for designating the limits of the RTR, according to the description provided in the Steens Act, all of the RTR would be within the Steens Mountain Wilderness and designated WSR segments, and precluded from livestock grazing. Management requirements of the Steens Mountain Wilderness and WSR designation include "nondegradation" and "protect and enhance ORVs," respectively. The ORVs include fish habitat and riparian vegetation. The interrelated nature of riparian condition to channel stability and complexity, and subsequently aquatic habitat, would facilitate maintaining or restoring fish and aquatic habitat within these areas regardless of resource-specific management actions. Also, most of the streams within the RTR are currently on the 303(d) list for summer stream temperature. The development of WQRPs may further define site/reach specific management and monitoring objectives.

The ODFW retains jurisdiction over the management of fish populations. Under the ODFW's Native Fish Conservation Policy, the conservation of naturally produced (i.e., nonhatchery) native fish species in the areas to which they are indigenous is the ODFW's principal obligation for fish management. Two objectives of the policy would be to restore and maintain sustainable naturally produced fish species in their natural environments, and to provide recreational, commercial, cultural, and aesthetic benefits of optimum native fish populations to present and future citizens. The Policy further states that hatcheries would be used responsibly to help achieve the goals of this policy, and that the ODFW would manage nonnative fish and hatchery based fisheries to optimize user benefits, consistent with conservation of naturally produced native fish species. The BLM would coordinate with the ODFW on the management of redband trout and other aquatic species and their habitat in the RTR, and formulate recommendations regarding species management in accordance with selected alternatives of this Proposed RMP/FEIS.

Opportunities for scientific research the environmental education would be developed, analyzed, and implemented through consultation with the ODFW, SMAC, and USFWS on a case-by-case basis.

4.7.4.3 Analysis of Alternatives

4.7.4.3.1 Effects Common to All Alternatives

Direct Effects

There would be no direct effects common to all alternatives.

Indirect Effects

There would be no indirect effects common to all alternatives.

4.7.4.3.2 Alternative A

Direct Effects

The boundaries of the RTR would be delineated independent of this RMP through coordination among the BLM, ODFW and SMAC.

Riparian and aquatic habitats would be managed to maintain or progress toward PFC, water quality standards, and fish habitat values through existing management. Management for PFC in the context of wilderness and WSR designation would allow for ecological progression of riparian vegetation that would promote increased fish habitat values such as cover, instream complexity, woody debris, and substrate condition. The RTR would be managed in accordance with the Wilderness Act and the WSR Act, as appropriate. This may preclude some restoration activities for fish and aquatic habitat that require motorized transport, heavy equipment, or specialized materials.

The Page Springs gauging weir would be removed if scientifically justified and if funds are available for such purpose. The existing weir has some effect on the ability of redband trout to migrate upstream and downstream, although the extent of this effect is unknown. This alternative would likely improve redband trout population expansion or abundance through removal of the weir, particularly fluvial and adfluvial forms, which migrate for spawning. Also, nonnative fish such as carp and sunfish are found in the mainstem of the Donner und Blitzen River downstream of the weir. These fish likely compete with redband trout for food and physical habitat, and may prey upon juvenile redband trout. The weir likely limits migration of these fish upstream, although the effect of the weir on migration of nonnative fish is unknown. If the weir substantially impedes the migration of nonnative fish, competition and predation with redband trout upstream of the weir would be reduced. Therefore, complete removal may increase the opportunity for nonnative fish to migrate into the RTR, and increase the effects of competition and predation on redband trout and other native aquatic species.

Indirect Effects

Wild Horses and Burros. Current AMLs and wild horse forage allocation levels would be maintained in all HMAs. Permanent increases or decreases in AML and forage allocations would not be considered. Concentration of wild horses or burros in riparian areas could result in decreased riparian vegetation density and cover, thereby reducing instream cover and shade. If upland forage or water availability decreased greatly, such as through extensive wildland fire or drought, increased utilization and concentration of riparian areas could result in reduction of riparian vegetation density, leading to reduced aquatic cover, shade, and streambank stability.

Current water sources would be maintained. If properly sited and maintained, these water sources could reduce wild horse and burro concentration and use in riparian areas, thereby reducing streambank disturbance and increasing riparian vegetation coverage and density. This in turn would increase shade on the stream, cover, and habitat complexity.

Recreation. Increased recreation use could result in increased localized disturbance to riparian and wetland vegetation and increased soil compaction, which would reduce aquatic habitat cover and shade. Increased recreation use could also result in greater fishing pressure, possibly requiring more restrictive angling regulations to conserve redband trout.

Intensive management could provide greater protection for resources such as aquatic habitat and fisheries through more immediate identification and resolution of conflicts between recreation and other resources.

Nonmotorized boating on the Donner und Blitzen River would be allowed only when the lowest gate on the South Steens Loop Road is open. Recreational river use may affect fisheries through disturbance of spawning fish or redds. However, the mandate to protect WSR ORVs should minimize effects to redband trout spawning.

4.7.4.3.3 Alternative B

Direct Effects

Under this alternative, the RTR would consist of public lands on the Donner und Blitzen River and its tributaries upstream of the confluence with Fish Creek to the longitudinal extent of current and future redband trout distribution. The migratory and spawning patterns of redband trout in the Donner und Blitzen system are not well understood. Fish in the mainstem may spawn in tributaries, or the tributaries may contain populations that are relatively distinct from the mainstem population. This alternative would include all potential habitat and potential populations, and would maximize conservation and protection for Donner und Blitzen redband trout.

Riparian and aquatic habitats would be managed for an advanced ecological status, which may promote increased fish habitat values such as cover, instream complexity, woody debris, or substrate condition. As in Alternative A, the RTR would be managed in accordance with the Wilderness Act and the WSR Act, as appropriate. This may preclude some restoration activities for fish and aquatic habitat that require motorized transport, heavy equipment, or specialized materials.

In coordination with appropriate entities, alternatives would be developed for the removal or modification of the Page Springs gauging weir. As previously noted, the weir may affect the ability of redband trout to migrate upstream and downstream, although the extent of this effect is unknown; the weir may possibly have limited effects on the redband trout population. Also unknown would be the effect of the weir on migration and distribution of nonnative fish that may compete with redband trout. Complete weir removal may increase nonnative competition with redband trout upstream of the weir. A partial removal or structural modification of the weir, such as notching or a constructed fishway, may provide for improved redband trout migration while still protecting against passage of nonnative fishes upstream. Further, by restricting the range of nonnative fish, keeping the weir in place may be more beneficial to redband trout than removing it. A detailed site assessment and analysis would be necessary to address these issues, and to ascertain that any action taken would provide overall benefits for the redband trout. Therefore, this action retains the option of no modification if analysis indicates greater benefit to the redband trout population. Coordination with other appropriate agencies under this alternative would promote such an analysis.

Indirect Effects

Wild Horses and Burros. As in Alternative A, current AMLs and wild horse forage allocation levels would be maintained in all HMAs. However, permanent increases or decreases in AMLs and forage allocations would be considered if forage availability changed greatly. Concentration of wild horses or burros in riparian areas could result in decreased riparian vegetation density and cover, reducing instream cover and shade. Adjustments in AML and forage allocations would reduce the risk of increased utilization by wild horses and burros if forage availability changed, thereby reducing the possibility of decreased riparian vegetation coverage and density, and the resulting reduction in shade and aquatic habitat cover and complexity. As in Alternative A, current water sources would be maintained, with the same effects. However, additional water sources would be developed to improve animal distribution. If properly sited and maintained, these water sources could reduce wild horse and burro concentration and use in riparian areas, thereby reducing streambank disturbance and increasing riparian vegetation coverage and density. This in turn would increase cover, habitat complexity, and shade on the stream. In some cases, the development of water sources may affect wetland habitat through diversion of water.

Recreation. Minimal recreation development and management could reduce recreation use of the RTR. Reduced recreation use could reduce localized disturbance to riparian and wetland vegetation, thereby increasing aquatic habitat cover and shade. Reduced recreation use could also result in less fishing pressure and resulting effects on redband trout.

Less intensive recreation management may provide less protection for resources such as aquatic habitat and fisheries, as conflicts between recreation and resources may be less likely to be identified and resolved.

No nonmotorized boating would be allowed on the Donner und Blitzen River. The potential effects of river use, including disturbance of spawning fish or redds, would not occur. Also, disturbance to riparian vegetation from nonmotorized boating would not occur.

4.7.4.3.4 Alternative C

Direct Effects

As in Alternative B, the RTR would consist of public lands on the Donner und Blitzen River and its tributaries upstream from the confluence with Fish Creek to the longitudinal extent of current and future redband trout distribution, with the same effects.

As in Alternative B, riparian and aquatic habitats would be managed for an advanced ecological status, with the same effects. As in all Alternatives, the RTR would be managed in accordance with the Wilderness Act and the WSR Act, with the same effects.

As in Alternative B, coordination would occur with appropriate entities on removal or modification of the Page Springs gauging weir, with the same effects.

Indirect Effects

Wild Horses and Burros. As in Alternative B, current AMLs and wild horse forage allocation levels would be maintained in all HMAs. Adjustments to forage allocations would be considered if forage availability changed greatly, with the same effects.

As in Alternative B, current water sources would be maintained, and additional water sources would be developed to improve animal distribution, with the same effects.

Recreation. The effects would be the same as Alternative A.

4.7.4.3.5 Proposed RMP

Direct Effects

As in Alternative B and C, the RTR would consist of public lands on the Donner und Blitzen River and its tributaries upstream of the confluence with Fish Creek to the longitudinal extent of current and future redband trout distribution, with the same effects.

As in Alternatives B and C, riparian and aquatic habitats would be managed towards an advanced ecological status with the same effects. As in all Alternatives, the RTR would be managed in accordance with the Wilderness Act and the WSR Act, with the same effects.

As in Alternative B and C, coordination would occur with appropriate entities on removal or modification of the Page Springs gauging weir, with the same effects.

Indirect Effects

Wild Horses and Burros. As in Alternatives B and C, current AMLs and wild horse forage allocation levels would be maintained in all HMAs. Adjustments to forage allocations would be considered if forage availability changed greatly, with the same effects.

As in Alternative B and C, current water sources would be maintained, and additional water sources would be developed to improve animal distribution, with the same effects.

Recreation. The effects would be the same as Alternative A.

4.7.4.3.6 Alternative E

Direct Effects

Under this alternative, the RTR would consist of public lands on the mainstem Donner und Blitzen River upstream of the confluence with Fish Creek. Tributaries with known populations of redband trout would not be included. As previously noted, the migratory and spawning patterns of redband trout in the Donner und Blitzen River system are not well understood. Fish in the mainstem may spawn in tributaries, or the tributaries may contain populations that would be relatively distinct from the mainstem population. This alternative would potentially eliminate some redband trout populations or spawning areas from the RTR, potentially reducing the emphasis on assessment, protection, and conservation.

As in the Proposed RMP, riparian and aquatic habitats would be managed for a diversity of fish habitat values, with the same effects. As in all Alternatives, the RTR would be managed in accordance with the Wilderness Act and the WSR Act, with the same effects.

As in Alternatives B, C, and the Proposed RMP, coordination would occur with appropriate entities on removal or modification of the Page Springs gauging weir, with the same effects.

Indirect Effects

Wild Horses and Burros. As in Alternatives B, C and the Proposed RMP, current AMLs and wild horse forage allocation levels would be maintained in all HMAs; adjustments to forage allocations would be considered if forage availability changed greatly, with the same effects.

As in Alternatives B, C and the Proposed RMP, current water sources would be maintained, and additional water sources would be developed to improve animal distribution, with the same effects.

Recreation. A river access system would be implemented to manage nonmotorized boating on the Donner und Blitzen River, with no limits on the number of users. Nonmotorized boating may affect redband trout through disturbance of spawning fish or redds. Also, increased nonmotorized boating on the river could result in localized disturbance to riparian vegetation, thereby reducing aquatic habitat cover and shade. If recreational use increases considerably in the future with no restrictions on the number of users, these effects may not allow for the protection and enhancement of WSR ORVs.

4.7.4.4 Summary of Effects

The RTR would be within lands managed as wilderness and WSR, and would be in the No Livestock Grazing Area. Management of wilderness requires nondegradation of resource values, and management of WSRs requires protection and enhancement of ORVs, which include the redband trout habitat. These management requirements promote maintenance or restoration of aquatic habitat values under any of the alternatives.

Recreational use in the RTR, and use of riparian areas by wild horses and burros, would vary among the alternatives. With the assumption that ORVs would be protected under any of the alternatives, aquatic habitat values would be maintained or restored under any of the alternatives. However, unlimited recreational use of the river under Alternative E, with no limits on the number of users, could potentially affect ORVs and redband trout if recreational use increases considerably, through disturbance of spawning fish or redds. Also, under Alternative A, wild horse and burro AMLs would not be adjusted to reflect changes in forage availability. If forage were substantially reduced in the RTR through fire or drought, riparian utilization by wild horses and burros could increase substantially, which may affect redband trout habitat.

4.7.4.5 Cumulative Effects

Due to the management of the RTR for both wilderness and WSR values within the No Livestock Grazing Area, potential adverse effects would be limited to those related to recreation. Increased recreational use of the RTR may result in extensive trails systems or many dispersed campsites, with disturbance to riparian vegetation and soils. Fishing pressure may also increase. However, WSR and wilderness management would require protection of ORVs and wilderness values, and limits on recreation access may be required if disturbance to riparian areas affects redband trout

or their habitat. The distribution and abundance of Donner und Blitzen River redband trout would be expected to increase through ongoing maintenance or improvement of riparian and aquatic habitat.

4.8 Paleontological Resources

4.8.1 Goals and Objectives

Goal 1 - Preserve, protect and manage vertebrate, noteworthy invertebrate and plant paleontological resources in accordance with existing laws and regulations to make these resources available for appropriate uses by present and future generations.

Objective 1. Using predictive modeling, locate significant localities that may be in conflict with other resource uses.

Objective 2. Research significant paleontological localities in cooperation with universities and other federal agencies.

Objective 3. Protect significant paleontological localities.

Goal 2 - Increase public knowledge of, appreciation for, and sensitivity to paleontological resources.

Objective. Create paleontology interpretive opportunities for public education.

4.8.2 Assumptions

Paleontological resources consist of vertebrate fossils and their geologic settings. Noteworthy plant and invertebrate fossils are also included.

Many of the other resource management objectives and associated management actions outlined in Chapter 4 could affect any or all paleontological resources. Most of these effects could be mitigated by first discovering the localities in question through project inventory and then by project redesign or various scientific data recovery methods such as recordation, surface collection, subsurface testing, or excavation. The FLPMA and NEPA provide the legal basis for this inventory and mitigation process. Even with adherence to these acts, inadvertent loss of paleontological resources could and does occur. Protection of paleontological localities through law enforcement surveillance and other protective measures would occur under all alternatives.

Effects of other public land uses such as livestock grazing, wild horse grazing, dispersed recreation, and OHV and mechanized vehicle use either go unnoticed or the activity is not considered an undertaking, per se, and is not inventoried. These effects are often mitigated on a case-by-case basis as they are discovered. Since not all fossil localities in the Planning Area are known, the different management actions that can indirectly affect paleontological resources are analyzed only by estimation.

4.8.3 Analysis of Alternatives

Direct Effects

4.8.3.1 Alternative A

Under Alternative A, a predictive model to locate paleontological localities that could be in conflict with other resource uses would not be created. The associated sample inventory to test the model and find localities would not be implemented. Indirect effects to paleontological resources would be mitigated on a case-by-case basis. Paleontological research would be focused on areas where conflicts with other resource uses occur under this alternative. This type of research could include surface collection of fossils, cumulative surface ground disturbance of up to 200 square meters, and deeper excavation blocks of up to 100 square meters. Protection of paleontological localities through law enforcement surveillance and other protective measures would occur. On-site and off-site interpretive facilities could be constructed. This interpretation program could result in construction of road pull-outs, kiosks or sign bases, and placement of interpretive signs at various locations in the Planning Area.

4.8.3.2 Alternative B

Under Alternative B, a predictive model to locate paleontological localities that could be in conflict with other resource uses would be implemented only in areas of intensive recreation use in the entire Planning Area. The associated sample inventory to test the model and find localities would be implemented only in these target areas. Indirect effects to paleontological resources by other resource uses would be mitigated on a case-by-case basis. Paleontological research would be limited in scope. This type of research could include surface collection of fossils, cumulative surface ground disturbance of up to 20 square meters, and deeper excavation blocks of up to ten square meters. On-site interpretation and interpretive facilities construction would not be implemented, and only off-site interpretative displays and other products would be created.

4.8.3.3 Alternative C

Under Alternative C, a predictive model to locate paleontological localities that could be in conflict with other resource uses would be created for the entire Planning Area. Indirect effects by other resource uses could be predicted throughout the Planning Area, and a sample inventory to test the model and locate fossil localities would be implemented in a programmatic fashion. Paleontological research would be focused on areas where conflicts with other resource uses occur under this alternative. This type of research could include surface collection of fossils, cumulative surface ground disturbance of up to 100 square meters, and deeper excavation blocks of up to 50 square meters. Protection of paleontological localities through law enforcement surveillance and other protective measures would occur. Off-site interpretive facilities would be constructed and self-guided walking tour brochures would be created. This interpretation program could result in construction of road pullouts, kiosks or sign bases, and placement of interpretive signs at various locations in the Planning Area.

4.8.3.4 Proposed RMP

Under the Proposed RMP a predictive model to locate paleontological localities that could be in conflict with other resource uses would be created for the entire Planning Area. Indirect effects by other resource uses could be predicted throughout the Planning Area and a sample inventory to test the model and locate fossil localities would be implemented in a programmatic fashion. Paleontological research would be focused on areas where conflicts with other resource uses occur under this alternative. This type of research could include surface collection of fossils, cumulative surface ground disturbance of up to 200 square meters, and deeper excavation blocks of up to 100 square meters. Protection of paleontological localities through law enforcement surveillance and other protective measures would occur. Off-site interpretive facilities would be constructed and self-guided walking tour brochures would be created. This interpretation program could result in construction of road pullouts, kiosks or sign bases, and placement of interpretive signs at various locations in the Planning Area.

4.8.3.5 Alternative E

Under Alternative E, a predictive model to locate paleontological localities that could be in conflict with other resource uses would be created for the entire Planning Area. Indirect effects by other resource uses could be predicted throughout the Planning Area and a sample inventory to test the model and locate fossil localities would be implemented in a programmatic fashion. Sample inventories would be increased to account for increased commodity uses. Paleontological research would be conducted in all known localities in the Planning Area. This type of research could include surface collection of fossils, cumulative surface ground disturbance of greater than 400 square meters, and deeper excavation blocks of greater than 200 square meters to support increased natural history tourism. Protection of paleontological localities through law enforcement surveillance and other protective measures would occur. On-site and off-site interpretive facilities would be constructed and self-guided walking tour brochures would be created in order to support increased natural history tourism. This interpretation program could result in construction of road pullouts, kiosks or sign bases, and placement of interpretive signs at various locations in the Planning Area.

Indirect Effects Common to All Alternatives

The management of the following resources or uses could indirectly affect cultural and paleontological resources. All could affect cultural resources under all alternatives. Effects vary in magnitude across the alternatives.

Water Resources, Riparian/Wetland, Fish and Special Status Fish Habitat. Water resources, riparian/wetland, fish habitat and special status fish species habitat management tend to be intertwined and could affect paleontological resources. Most management actions associated with these water and related resources would be focused on protection or

restoration of riparian corridors. One potential indirect effect caused by increased protection of riparian or wetland areas through physical barriers or decreased use would be the potential increased use in the uplands. Paleontological resources in upland areas that previously received little or no livestock use could be subjected to livestock trampling and trailing effects in certain locations under a more upland focused grazing system.

Management actions under the Proposed RMP and Alternatives A and C would generally provide similar levels of protection to paleontological resources because livestock grazing intensity would be approximately the same in these three alternatives. Water resources and related projects in these three alternatives could indirectly effect paleontological resources in upland areas because grazing intensity would increase in these areas. Alternative E would probably see the most active water resources management because of the focus on commodity extraction. This alternative could result in the greatest effects to paleontological resources, particularly in upland areas when the riparian areas would be closed to livestock and wild horse grazing.

Special Status Animal Species Habitat, Rangelands Vegetation, and Noxious Weeds. Special status animal species habitat, rangeland vegetation, and noxious weed management projects are focused on manipulation of plant communities for various reasons. Most vegetation management actions result in short-term effects on paleontological resources because of increased ground visibility and heightened potential for erosion. However, since vegetation management actions are intended to increase vegetation cover and provide soil stability, they provide long-term protection for paleontological resources.

Vegetation management projects under the Proposed RMP and Alternatives C and E would probably result in the most acres of changed plant communities and provide the greatest long-term protection to paleontological resources. Alternative B would result in the least number of acres converted and provide the least protection for paleontological sites. Vegetation management projects under Alternative A would be fewer than in Alternatives C, the Proposed RMP, and E but more than in Alternative B. As a result, paleontological resources would be most protected under the Proposed RMP and Alternatives C and E, less under Alternative A and least under Alternative B.

Woodlands. Juniper woodland treatments can affect paleontological resources by decreasing the potential for erosion and eventually increasing ground cover. "Drop and leave" slash treatment in woodland management is preferred to "drop and burn" treatment. When slash is burned, ground cover is eliminated, allowing increased soil erosion. However, without some type of juniper management, many areas of sagebrush-juniper steppe could evolve into juniper woodland, resulting in erosion that increases ground visibility. This could lead to surface and subsurface damage to paleontological resources that destroys scientific data and leads to increased illegal fossil collecting.

Juniper woodland management would be the most active under the Proposed RMP and Alternatives A, C and E. When downed slash is not burned or trees are girdled and burned standing, paleontological resources can be protected by active woodland management. If downed slash is burned, paleontological resources can be affected in the short term by increased soil erosion and increased ground visibility. Juniper woodland management under Alternative B would be limited because Alternative B relies on natural processes to "manage" these woodlands. This alternative could result in the greatest effects on paleontological resources because of increased ground visibility and surface erosion.

Social and Economic Values. Existing socioeconomic values are primarily focused on consumptive use with the trend toward increasing emphasis on nonconsumptive uses. Effects on paleontological resources are greater with consumptive than nonconsumptive use because consumptive uses are more likely to result in ground disturbances than most nonconsumptive uses. Although such use is considered nonconsumptive, dispersed recreation can result in increased illegal collection of fossils and disturbance of fossil localities.

Alternative B would be the least consumptive and would affect paleontological resources the least. Alternative E, the most consumptive, would affect paleontological resources the most. The Proposed RMP and Alternatives C and A, intermediate between B and E, would moderately affect paleontological resources.

Energy and Minerals. There would be no effect on paleontological resources by locatable, leasable, and salable energy and mineral exploration and development in the following areas that are closed by Congressional action or subject to WSA IMP nonimpairment criteria under all the alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, Steens Mountain Wilderness, and WSAs, which together cover 72 percent of the Planning Area. Under all alternatives, open areas could have effects on paleontological resources. It is likely that only land with high mineral resource potential would be subject to mineral exploration. Further, it is likely that only a portion of that area with high mineral potential could be economically mined or be proposed for development. In leasing

activities, there would be no surface disturbance and no effect on paleontological resources under NSO leasing stipulations, and reduced effects on paleontological resources under seasonal or other special leasing stipulations. In surface-disturbing exploration and development activities, paleontological resources could be destroyed but they could be protected by mitigation measures such as: surveying for paleontological resources prior to surface disturbance; locating access routes away from sites with paleontological resources; and recordation, surface collection, subsurface testing, or excavation.

Under Alternatives A and E, 28 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development, with potential effects on paleontological resources on that much area. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Under Alternative B, there would be no indirect effects on paleontological resources because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Under Alternative C, areas with significant paleontological localities would be closed to locatable, leasable, and salable minerals activities. Thirteen percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development with potential for effects on paleontological resources on that much area. Locatable minerals activity would be most likely on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 43 acres in the Planning Area that have high potential for leasable minerals and that would be open; these acres would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 13 percent of the Planning Area that is open. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Under the Proposed RMP areas with significant paleontological localities would be closed to locatable minerals activities, subject to NSO lease stipulations, and closed to salable minerals activities. Twenty-seven percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development, with potential for effects on paleontological resources on that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative; 281of those acres would be open for leasing with seasonal or other special stipulations, and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

The potential for effects on paleontological resources by energy and mineral exploration and development would be greatest under Alternatives A and E. There would be no effects under Alternative B; Alternatives C and the Proposed RMP would be intermediate in their effects, with Alternative C having less effect.

Lands and Realty. Lands and realty management can affect paleontological resources, most notably through land exchanges and land sales. These effects can be mitigated through adherence to the FLPMA. As with land tenure actions, the effects created by utility line construction are mitigated. Restrictions or elimination of utility corridors can reduce effects on paleontological resources. Existing (Alternative A) land tenure management emphasis is increasingly focused on acquiring high value lands and management easements, while utility development is relatively static.

Acquiring high value paleontological properties and meeting paleontological resource objectives is possible under existing management, but would be improved under the Proposed RMP and Alternatives B and C. Lands and realty management under Alternative E would result in the greatest effects on paleontological resources from increased land disposals, potentially greater numbers of utility corridors, and the elimination of land purchases.

Wild Horses and Burros. Paleontological resources are affected by wild horse use in a manner similar to livestock grazing. Construction of additional water developments to promote an even use of the landscape and provide for water during drought years can affect paleontological resources through increased use in the uplands. Paleontological resources

in upland areas that receive little or no wild horse use can be subjected to trampling and trailing effects in certain locations under a more upland focused livestock grazing system.

Wild horse use would be approximately the same under all the alternatives because wild horse numbers would be managed at similar levels. Impacts to paleontological resources from wild horses would therefore be the same under all alternatives.

Grazing Management. Livestock grazing use can affect paleontological localities through livestock trampling, wallowing, and trailing. Low level trampling is probably the norm for most localities. Paleontological resources in upland areas that receive little or no wild horse use can be subjected to trampling and trailing effects in certain locations under a more upland focused livestock grazing system. In general, the more livestock grazing is restricted, the fewer the effects on paleontological resources.

Livestock grazing would be eliminated under Alternative B. This alternative would eliminate livestock grazing effects on paleontological resources. The Proposed RMP and Alternatives A and C would allow more livestock grazing, resulting in greater effects. Alternative E, maximum commodity production, would result in the greatest effects on paleontological resources. These effects could be partially offset with increased grass seedings to provide greater soil stability.

Fire Management. Wildland fire and wildland fire suppression affect paleontological resources in a number of ways. Suppression activities such as OHV use, bulldozing control lines, and occupation of fire camps can damage paleontological resources through sediment compaction and altered surface water drainage. Wildland fire removes ground cover and exposes rock and soil to erosion, subjecting paleontological localities to damage from wind and water erosion and illegal collecting. In general, even though suppression can damage paleontological resources in specific ways, well planned suppression would be preferable to allowing wildland fires to burn unchecked. The resulting erosion, in particular, can damage localities.

Wildland fire suppression would be most active under the Proposed RMP and Alternatives A, C, and E. Impacts to paleontological localities from wildland fire and suppression would be at similar levels under these alternatives. Under Alternative B, wildland fire suppression would be limited and fires would be allowed to burn larger areas than under any of the other alternatives. This emphasis on naturalness would affect paleontological resources to a greater extent than any of the other alternatives. Increased erosion would occur where greater amounts of burned acreage create larger exposures of surface rock and soil, subjecting paleontological localities to damage from wind and water erosion and the possibility of illegal fossil collecting.

Prescribed burning can affect paleontological resources by increasing short-term ground surface visibility and, potentially, surface runoff and erosion. This greater visibility makes fossils more accessible and can lead to increased illegal collection. These short-term effects are mitigated through prior paleontological inventory, systematic surface fossil collection and post-fire monitoring. After a few seasons of growth, plant cover should decrease ground visibility. Decreased visibility can affect paleontological locality through decreased potential for illegal collecting. Prescribed fire management actions are usually planned to target a certain plant species or plant association, while preserving other portions of the plant community. Under this prescription, paleontological resources are not substantially affected. However, if the burn plan calls for extreme heat generation to eliminate a target plant species that is difficult to remove (e.g., juniper), paleontological resources can be affected by increased soil exposure and erosion.

Prescribed wildland fire would be most active under the Proposed RMP and Alternatives A, C, and E. Impacts to paleontological resources from prescribed wildland fire would be at similar levels under these alternatives. Prescribed burning could be limited under Alternative B. Thus, paleontological resources would be less affected by short-term ground surface visibility, exposure of surface sediments to wind and water erosion, and loss of fossils to illegal collectors.

Transportation and Roads. Road construction can expose paleontological localities and, therefore, aid in their discovery. The discovery is not without cost, since a portion of the locality is destroyed during the construction. Roads allow access to paleontological resources. This access can result in illegal surface collection and excavation; however, open vehicular access to paleontological resources affords the BLM an opportunity for paleontological resource monitoring and management.

Alternatives B and C would dramatically decrease motorized access. Under these alternatives, illegal fossil collection and excavation are likely to continue at present or higher levels because vandals could ignore road closures. In addition, vandals might feel more secure if the BLM were hampered in its monitoring efforts. The Proposed RMP and Alternatives A and E would only slightly reduce or not reduce motorized access. Access to public lands would allow illegal fossil collecting and excavation at present rates, but would also permit greater access for law enforcement in surveillance operations.

Off-Highway Vehicles. Unrestricted OHV and mechanized vehicle use affects paleontological resources. Compaction, altered surface water drainage, and erosion are all effects to the landscape and by extension, to paleontological resources. Organized OHV and mechanized vehicle event locations are cleared and any effects mitigated through adherence to the FLPMA and NEPA; however, the effects caused by dispersed OHV and mechanized vehicle activity are not mitigated unless they are discovered. Alternatives A and E would be the least restrictive to OHV and mechanized vehicle use within the Planning Area. The Proposed RMP would be considerably more restrictive than Alternatives A or E, with a limited number of acres designated as open to OHV and mechanized vehicle use. Alternatives B and C offer no areas designated as open to OHV and mechanized vehicle use. Alternative B would be the most restrictive with the majority of the Planning Area designated as limited to designated roads or closed to OHV and mechanized vehicle use. Alternative C designates fewer acres as closed, but still limits OHV and mechanized vehicle use in most of the Planning Area to designated roads and ways. Alternatives A and E would affect paleontological resources to the greatest degree. The Proposed RMP would result in fewer effects than Alternatives A and E. Alternative C, followed by Alternative B, would result in the fewest OHV and mechanized vehicle related effects on paleontological resources.

Recreation. Recreation development and management create different effects on paleontological resources. Greater use of interpretive displays at developed recreation facilities could increase public awareness and education, which could potentially result in decreased illegal collecting and locality damage. Increased recreation development, on the other hand, could bring more people to the area. More visitors could mean greater illegal collection and locality damage. Developed recreation has fewer effects on paleontological resources than nondeveloped recreation because it concentrates people in small, predictable areas. Dispersed recreation emphasis would attract visitors to places that have not received much use in the past; therefore, this type of use would be much less predictable and measurable. Under Alternatives A and the Proposed RMP recreation development levels would be very low and dispersed recreation use would be gradually increasing. Under Alternatives B and C, the emphasis would be on dispersed and undeveloped recreation. Recreation use under Alternative E would likely stress developed recreation facilities in order to accommodate increased visitation. Determining which alternative would affect paleontological resources the most is difficult. Since dispersed recreation activities are the most difficult to monitor and control, Alternatives B and C may have the greatest effects on paleontological resources.

Areas of Critical Environmental Concern, Wilderness, and Wilderness Study Areas. With their greater emphasis on natural values, ACEC, wilderness, and WSA designations can reduce the number of effects on paleontological resources because they reduce the number of land disturbing activities in an area. The greater the number of designated acres, the fewer effects on paleontological resources.

The designation of wilderness may create an attraction for visitors, causing increased visitation and use in the area which could affect paleontological resources. Effects could include increased surface disturbance at dispersed camping areas, and loss of artifacts through illegal collection.

Alternative A, with the second largest acreage devoted to ACECs, would result in fewer effects to paleontological resources than all the alternatives except Alternative C. The number of acres of either wilderness or WSAs within the Planning Area would be the same for all alternatives. Therefore, the effects on paleontological resources would be the same under all alternatives.

Wild and Scenic Rivers. WSR designations can indirectly affect paleontological resources, especially through their relationship to livestock grazing management. Placing few restrictions on grazing in the river corridors would result in effects to paleontological resource sites through trampling, trailing, and wallowing. Greater restrictions placed on grazing in the river corridors could result in concentrated livestock use at river crossings and water gaps. Total exclusion of grazing in the river corridor could focus livestock grazing effects on lightly used upland areas, resulting in increased effects on paleontological localities in the uplands. As a consequence, increased restrictions or exclusion of grazing in the WSR corridors could increase effects on paleontological resources outside the corridors, while decreasing effects within them.

Alternative C recommends more miles of river as suitable for designation as WSRs by Congress than all the other alternatives.

4.8.4 Summary of Effects

With the exception of fire suppression and forest/woodland management, Alternative B would result in the fewest effects on paleontological resources of all the alternatives. With extremely limited suppression efforts and few allowances for prescribed fire, no provision would be made for locating or protecting localities that could be affected by wildland fire. Fuels reduction would depend upon natural forces, resulting in more intense fires of longer duration. This type of fire would damage paleontological resources through increased soil exposure and erosion. Increased erosion and ground visibility in unmanaged juniper woodlands could result in increased effects on paleontological resources.

Alternative E would be the least restrictive of all the alternatives and would result in the greatest level of effects on paleontological resources. An analysis of the remaining alternatives shows that the next lower level of effects would occur under Alternative A, followed in order by the Proposed RMP, and Alternative C. This order is based on the increased emphasis on natural values and decreased commodity use.

4.8.5 Cumulative Effects

In the foreseeable future additional paleontological resources are likely to be located, particularly at the base of the Steens Mountain area or on the valley floors where favorable geology exists for locating fossils. Cumulative effects could occur from livestock grazing in riparian corridors since some paleontological localities occur near riparian areas. Cumulative effects on paleontological resources would be reduced when livestock grazing is restricted or excluded in these areas, Cumulative effects to paleontological resources would be lowest where uses of public lands are restricted to those that cause the least ground disturbance. A paleontological site could be subjected to grazing pressure, OHV and mechanized vehicle use, and illegal collecting, which would lead to cumulative effects that would be greater under Alternative E but would be similar under the remaining alternatives. Cumulative effects would be minimized by following FLPMA Section 310 and 302(b); 43 CFR 8365.1-5; and 43 CFR 3622.

4.9 Cultural Resources

4.9.1 Goals and Objectives

4.9.1.1 Goal 1 - Preserve, protect and manage cultural resources in accordance with existing laws, regulations, and Executive Orders, in coordination/consultation with the Burns Paiute Tribe, other Native American tribes, Harney County Historical Society, and other heritage groups to make cultural resources available for appropriate uses by present and future generations.

Objective 1. Using predictive modeling, locate significant sites that may be in conflict with other resource uses.

Objective 2. Use Section 110 inventories to locate significant sites in the Planning Area.

Objective 3. Research significant cultural sites in cooperation with universities, the Burns Paiute Tribe, other tribes, and heritage partners.

Objective 4. Use protective measures to safeguard significant cultural sites.

Objective 5. Pursue land acquisitions to bring significant sites into public ownership.

Objective 6. Stabilize, restore or reconstruct significant historic structures to provide public safety and recreational and interpretive opportunities.

4.9.1.2 Goal 2 - Increase public knowledge of, appreciation for, and sensitivity to cultural resources.

Objective. Create cultural resources interpretive opportunities and sites for public education in coordination with the Burns Paiute Tribe, other tribes, and heritage partners, as appropriate.

4.9.2 Assumptions

Cultural resources would be an inclusive term that includes historic structures and sites and prehistoric archaeological sites. Since prehistoric sites would be the heritage of American Indian tribes, the BLM would be mandated to consult and coordinate with the Burns Paiute and other tribes in order to protect their heritage on public lands.

Many of the other resource management objectives and associated management actions outlined in this analysis could affect any or all cultural resources. Most of these effects could be mitigated by first discovering the sites in question through project inventory and then by project redesign or various scientific data recovery methods such as recordation, surface collection, subsurface testing, or excavation. The basis for this inventory and mitigation process would be Section 106 of the National Historic Preservation Act of 1966. Even with adherence to these acts, inadvertent loss of cultural resources could and does occur.

Effects of other public land uses such as livestock grazing, wild horse grazing, dispersed recreation, and OHVs and mechanized vehicles either go unnoticed or the activity would not be considered an undertaking, per se, and is not inventoried. These effects would be mitigated only as they were discovered, on a case-by-case basis. The following analysis of effects is a discussion of both unaccounted for effects and mitigated effects, and their predicted intensity by alternative. In addition, cumulative effects resulting from the interaction of various management objectives and actions would be discussed. Since not every cultural resource in the Planning Area is known, the different management actions that could indirectly affect cultural resources can be analyzed only by estimation.

4.9.3 Analysis of Alternatives

Direct Effects

4.9.3.1 Alternative A

Under Alternative A, a predictive model to locate significant sites that might be in conflict with other resource uses would be created. Indirect effects by other resource uses would be mitigated when found, on a case-by-case basis. Proactive inventories would occur at a rate of no less than 500 acres per year. This would result in a slow, incremental accumulation of cultural resource data. Scientific research could consist of numerous 50 by 50 centimeter test excavations, excavation blocks of up to 100 square meters in extent, and backhoe trenches measuring up to 20 meters long and four meters deep. Under Alternative A, this type of research could be focused on significant cultural sites where other resource conflicts occur. No physical protection measures other than a caretaker and restricted access at Riddle Brothers Ranch National Historic District would be implemented at significant sites or groups of sites under this alternative. However, law enforcement surveillance and monitoring of certain significant sites and groups of sites within wildland fire areas would occur. Under this alternative, a land trade to acquire a private portion of a regionally significant site in Catlow Valley is in the initial stages. Inventory, assessment, and preservation activities (e.g., stabilization, restoration, and reconstruction) at historic sites would occur under this alternative. On-site and off-site interpretation could be implemented under this alternative, and could result in construction of road pullouts, kiosks or sign bases, and placement of interpretive signs at various locations in the Planning Area.

4.9.3.2 Alternative B

Under Alternative B, a predictive model to locate significant sites that might be in conflict with other resource uses would be limited to recreation use areas in the Planning Area. Indirect effects by other resource uses would be mitigated only when found, on a case-by-case basis. Proactive inventories would occur at a rate of no less than 500 acres per year. This would result in a slow, incremental accumulation of cultural resource data. Scientific research could consist of numerous 50 by 50 centimeter test excavations, excavation blocks of up to 100 square meters in extent, and backhoe trenches measuring up to 20 meters long and four meters deep. This type of research would be implemented on a limited basis. No physical protection measures would be implemented at significant sites or groups of sites under this alternative; however, law enforcement surveillance and monitoring certain significant sites and groups of sites within wildland fire areas would occur. Under this alternative, land acquisitions to bring significant sites into public ownership would be pursued; the previously private portions of sites would be studied on a limited basis; maintenance of structures within the Riddle Brothers Ranch National Historic District, and inventory and assessment of other historic structures would occur. Active management such as developing restoration plans and preservation activities (e.g., stabilization, restoration and reconstruction) at historic sites would not occur, and on-site interpretation and interpretive facilities construction would not be implemented under this alternative. Only off-site interpretive displays would be created.

4.9.3.3 Alternative C

Under Alternative C, a predictive model to locate significant sites that may be in conflict with other resource uses would be implemented throughout the Planning Area. Indirect effects by other resource uses could be predicted in the Planning Area and a sample inventory to test the model and locate sites would be implemented in a programmatic fashion. Proactive inventories would occur at a rate of no less than 500 acres per year. This would result in a slow, incremental accumulation of cultural resource data. Scientific research could consist of numerous 50 x 50 centimeter test excavations, excavation blocks of up to 100 square meters in extent, and backhoe trenches measuring up to 20 meters long and four meters deep. Under Alternative C, this type of research would be focused on significant cultural sites where other resource conflicts occur; physical protection measures such as fencing, OHV designations and road closures, use of caretakers and riprap in active shorelines would be implemented at significant sites or groups of sites; law enforcement surveillance and monitoring certain significant sites and groups of sites within wildland fire areas would occur; and land acquisitions to bring significant sites into public ownership would be pursued. Under this alternative, the previously private portions of sites would be studied on an unlimited basis; inventory, assessment and preservation activities (e.g., stabilization, restoration and reconstruction) at historic sites would occur; and on-site and off-site interpretation could be implemented. This type of interpretation could result in construction of road pullouts, kiosks or sign bases and placement of interpretive signs at various locations in the Planning Area.

4.9.3.4 Proposed RMP

Under the Proposed RMP a predictive model to locate significant sites that may be in conflict with other resource uses would be implemented throughout the Planning Area. Indirect effects by other resource uses could be predicted in the Planning Area and a sample inventory to test the model and locate sites would be implemented in a programmatic fashion. Proactive inventory would occur at a rate of no less than 500 acres per year. This would result in a slow, incremental accumulation of cultural resource data. Scientific research could consist of numerous 50 x 50 centimeter test excavations, excavation blocks of up to 100 square meters in extent, and backhoe trenches measuring up to 20 meters long and four meters deep. Under the Proposed RMP this type of research would be focused on significant cultural sites where other resource conflicts occur. Physical protection measures such as fencing, OHV designations and road closures, use of caretakers, and rip-rap in active shorelines would be implemented at significant sites or groups of sites; law enforcement surveillance and monitoring certain significant sites and groups of sites within wildland fire areas would occur; land acquisitions to bring significant sites into public ownership would be pursued; and the previously private portions of sites would be studied on an unlimited basis. Inventory, assessment, and preservation activities (e.g., stabilization, restoration and reconstruction) at historic sites would occur under this alternative. On-site and off-site interpretation could be implemented under this alternative, and could result in construction of road pullouts, kiosks or sign bases, and placement of interpretive signs at various locations in the Planning Area.

4.9.3.5 Alternative E

Under Alternative E, a predictive model to locate significant sites that may be in conflict with other resource uses would be implemented throughout the Planning Area. Indirect effects by other resource uses could be predicted in the Planning Area, and sample inventory to test the model and locate sites would be implemented in a programmatic fashion. Sample inventory acreage would be increased to account for increased commodity use. Proactive inventory could be increased under this alternative to support increased heritage tourism. Scientific research could consist of numerous 50 by 50 centimeter test excavations, excavation blocks of up to 100 square meters in extent, and backhoe trenches measuring 20 meters long and four meters deep. Under Alternative E, this type of research would be increased at significant cultural sites in order to support increased heritage tourism. Physical protection measures such as fencing, OHV designations and road closures, use of caretakers, and riprap in active shorelines would be implemented at significant sites or groups of sites; and law enforcement surveillance and monitoring of certain significant sites and groups of sites within wildland fire areas would occur. Land acquisitions to bring significant sites into public ownership would not be pursued in this alternative. Inventory, assessment and preservation activities (e.g., stabilization, restoration and reconstruction) at historic sites would increase under this alternative in order to support increased heritage tourism. On-site and off-site interpretation would be increased under this alternative. This type of interpretation could result in construction of road pullouts, kiosks or sign bases, and placement of interpretive signs at various locations in the Planning Area.

Indirect Effects Common to All Alternatives

The management of the following resources or uses could indirectly affect cultural resources. All could affect cultural resources under all alternatives. Effects vary in magnitude across the alternatives.

Water Resources, Riparian/Wetland, Fish Habitat and Special Status Fish Species Habitat. Management of these resources tends to be intertwined and affects cultural resources (particularly archaeological sites and historic ranches) in a similar fashion. Most management actions that promote better water quality, riparian/wetland health, or fish habitat would likely result in preservation, or at least decreased degradation, of archaeological sites. When designing water developments, inclusion of cultural resources within physical barriers to protect them from livestock is of critical importance. One potential indirect effects caused by increased protection of riparian or wetland areas through physical barriers or decreased use is the commensurate increased use in the uplands. Cultural resources in certain upland locations that previously received little or no livestock use could be subjected to livestock trampling and trailing effects under a more upland focused grazing system.

Management actions under the Proposed RMP and Alternatives A and C would generally provide similar levels of protection to cultural resources because livestock grazing intensity would be approximately the same in these three alternatives. Water resources and related projects in these three alternatives could indirectly affect cultural resources in upland areas, as grazing would be increasingly forced into those areas. Alternative B would eliminate livestock grazing everywhere in the Planning Area. With grazing eliminated, water resources and related projects would not be necessary except where rehabilitation or restoration of stream system(s) is warranted. These projects in the No Livestock Grazing portions of the Planning Area would not indirectly protect or degrade cultural resources. Alternative E would probably result in the most active water resources management because of the focus on commodity extraction. This alternative would likely result in the greatest effects on cultural resources, particularly in upland areas when the riparian areas would be closed to livestock and wild horse grazing.

Special Status Animal Species Habitat, Rangeland Vegetation, and Noxious Weeds. Vegetation management projects would be focused on manipulation of plant communities for various reasons. Most vegetation management actions could result in short-term effects on cultural resources because of increased ground visibility and heightened potential for erosion. However, since vegetation management actions would be intended to increase vegetation cover and provide soil stability, they would affect cultural resources over the long term. In general, these projects provide more short-term effects to cultural resources than long-term effects.

Vegetation management projects under the Proposed RMP and Alternatives C and E (increased seedings for livestock forage) would probably result in the most acres of changed plant communities and provide the greatest long-term protection to cultural resources. Alternative B would result in the least number of acres converted and provide the least protection for cultural sites. Vegetation management projects under Alternative A would be fewer than the Proposed RMP and Alternatives C and E, but more than in Alternative B. As a result, cultural resources would be affected most under the Proposed RMP and Alternatives C and E, less under Alternative A and the least under Alternative B.

Woodlands. Juniper woodland treatments can result in effects to archaeological sites, but the primary agent of site damage is the type of fuel treatment after falling the trees. Juniper control through “drop and leave” or girdling results in little effect to sites by decreasing sediment erosion and illegal artifact collection. "Drop and burn" fuels disposal can result in extensive damage to cultural resources due to high heat output. However, both forms of fuels treatment in woodland management would be preferred to no management because they eventually result in greater ground cover and decreased erosion. With many areas of sagebrush-juniper steppe moving in the direction of a juniper woodland ecozone, erosion and increased ground visibility would be likely. These two results lead to surface and subsurface damage to archaeological sites and increased illegal artifact collecting.

Juniper woodland management would be the most active under the Proposed RMP and Alternatives A, C, and E. When downed slash is not burned or trees are girdled and burned standing, cultural resources are affected by active woodland management. If downed slash is burned, cultural resources suffer short-term damage, but are positively affected over the long term by increased soil stability and decreased ground visibility. Juniper woodland management under Alternative B would be limited because this alternative relies on natural processes to "manage" these woodlands. This alternative could result in the greatest effects to cultural resources because of increased ground visibility and surface erosion. Increased ground visibility aids illegal collectors, while increased erosion exposes more artifacts for collection and destroys site integrity and scientific data.

Social and Economic Values. Existing socioeconomic values are primarily focused on consumptive use, with the trend toward increasing emphasis on nonconsumptive uses. As would be expected, effects upon cultural resources are greater with consumptive uses, since consumptive uses are more likely to result in ground disturbance than most nonconsumptive uses.

Alternative B would be the least consumptive and would affect cultural resources the least. Alternative E, the most consumptive, could affect cultural resources the most. The Proposed RMP and Alternatives C and A, intermediate between B and E, would moderately affect cultural resources.

Energy and Minerals. Locatable, leasable, and salable energy and mineral exploration and development would have no effect on cultural resources in the following areas closed by Congressional action or subject to WSA IMP nonimpairment criteria under all the alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, Steens Mountain Wilderness, and WSAs. Together these areas cover 72 percent of the Planning Area. Under all alternatives, open areas could have effects on cultural resources. It is likely that only land with high mineral resource potential is likely to be subject to mineral exploration. Further, it is likely that only a portion of areas with high mineral potential could be economically mined or proposed for development. Under NSO leasing stipulations, there would be no surface disturbance, no effect on cultural resources, and reduced effects on cultural resources under seasonal or other special leasing stipulations. In surface disturbing exploration and development activities, cultural resources could be protected by mitigation measures such as these: surveying for cultural resources prior to surface disturbance, routing access routes away from sites with cultural resources, recordation, surface collection, subsurface testing, or excavation.

Under Alternatives A and E, 28 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development, with potential effects to cultural resources on that much area. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that would be open under this alternative and that have high potential for leasable geothermal resources. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Under Alternative B there would be no indirect effects on cultural resources because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Under Alternative C, areas with National Register eligible and listed cultural sites would be closed to locatable, leasable, and salable minerals activities. Thirteen percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development, with potential effects to cultural resources on that much area. Locatable minerals activity would be most likely on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 43 acres in the Planning Area that would be open under this alternative and that have high potential for leasable minerals. These acres would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 13 percent of the Planning Area that is open. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Under the Proposed RMP areas with National Register listed cultural sites would be closed to locatable minerals activities, subject to NSO lease stipulations, and closed to salable minerals activities. Twenty-seven percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects to cultural resources on that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals activity and that would be open under this alternative that has high potential for locatable minerals. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative; 281of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

The potential for effects to cultural resources by energy and mineral exploration and development would be greatest under Alternatives A and E; there would be no effect under Alternative B; Alternatives C and the Proposed RMP would be intermediate in their effects, with Alternative C having fewer effects.

Lands and Realty. Lands and realty management can affect cultural resources, primarily through land exchanges and land sales. These effects would be mitigated through adherence to the National Historic Preservation Act. As with land tenure actions, the effects created by utility line construction would be mitigated. Restriction or elimination of utility corridors reduces effects on cultural resources; the greater the restrictions and the fewer the utility corridors, the fewer effects on

cultural resources. Existing (Alternative A) land tenure management emphasis would be increasingly focused on acquiring high value lands and management easements, while utility development would be relatively static.

Acquiring high value cultural properties and meeting cultural resource objectives would be a real possibility under existing management, but would be improved under the Proposed RMP and Alternatives B and C. Lands and realty management under Alternative E would result in the greatest effects on cultural resources due to increased land disposals, potentially greater numbers of utility corridors, and the elimination of land purchases.

Wild Horses and Burros. Cultural resources are affected by wild horse use in a manner similar to livestock grazing. These effects are trampling, wallowing, and trailing, especially near fenced or unfenced watering areas. Construction of additional water developments to promote an even use of the landscape and to provide for water during drought years could affect cultural resources. Wild horse use of existing water sources, many of which would be near cultural resources, would be reduced. However, one potential effect caused by increased protection of riparian or wetland areas through physical barriers or decreased use would be the commensurate increased use in the uplands. Cultural resources in upland areas that previously received little or no wild horse use could be subjected to trampling and trailing effects in certain locations under an increased upland focused system.

Wild horse use would be approximately the same under all the alternatives because horse numbers would be managed at similar levels. Therefore, magnitude of effects on cultural resources from wild horses would be the same under all alternatives.

Grazing. Livestock grazing use is a major contributor to archaeological site damage (14 to 18 percent of all sites damaged in the Planning Area). These percentage estimates are likely too low, as damage is usually reported only when trampling is obvious. Since livestock trampling is widespread, low level trampling is probably the norm for most sites. Construction of additional water developments to promote an even use of the landscape and to provide for water during drought years could affect cultural resources. Livestock use of existing water sources, many of which would be near cultural resources, would be reduced. However, one potential effect caused by increased protection of riparian or wetland areas through physical barriers or decreased use would be the commensurate increased use in the uplands. Cultural resources in upland areas that previously received little or no wild horse use could be subjected to trampling and trailing effects in certain locations under an increased upland focused system. In general, the greater the restrictions on livestock grazing, the fewer the effects on cultural resources.

Livestock grazing effects can be minimized under the Proposed RMP and Alternatives A, C and E by adhering to a 50 percent or less utilization standard on native ranges and 60 percent or less on nonnative seedings. Where the grazing exceeds this standard, individual mitigation measures could be implemented.

Livestock grazing would be eliminated under Alternative B. This alternative would dramatically decrease livestock grazing effects on cultural resources. The Proposed RMP and Alternatives A and C would allow more livestock grazing, and the resultant effects would be greater. Alternative E, maximum commodity production, would result in the most effects on cultural resources. These impacts could be partially offset with increased grass seedings to provide greater soil stability.

Fire Management. Wildland fire and wildland fire suppression affect cultural resources in a number of ways. Obviously, fires destroy burnable cultural resources such as historic buildings and other wooden structures and features. Less obvious would be the destruction of, or damage to, prehistoric rock art, surface scatters of stone artifacts, and waste stone debris. Fire suppression activities such as OHV use, bulldozing of control lines, and occupation of fire camps can damage cultural resources through sediment compaction and artifact displacement and breakage. Soil chemistry at archaeological sites can be dramatically changed with the use of fire retardants, especially in areas of low annual rainfall where leaching would be minimal. Wildland fire removes ground cover and exposes rock and soil to erosion, subjecting subsurface archaeological sites to damage from wind and water erosion and illegal collecting. In general, even though suppression can damage cultural resources in specific ways, well planned suppression would be preferable to allowing wildland fires to burn unchecked. The resulting erosion, in particular, can damage sites.

Wildland fire suppression would be most active under the Proposed RMP and Alternatives A, C and E. Effects to cultural resources from wildland fire and suppression would be at similar levels under these alternatives. Under Alternative B, wildland fire suppression would be limited and fires would be allowed to burn larger areas than under any of the other alternatives. This emphasis on naturalness would affect cultural resources to a greater extent than any of the other alternatives. Greater burned acreage would mean greater exposure of surface sediments to erosion, subjecting subsurface archaeological sites to damage from wind and water erosion and illegal collecting.

Prescribed wildland fire would be achieved at similar levels under all the alternatives. Effects on cultural resources from prescribed wildland fire would be at similar levels under all the alternatives.

Transportation and Roads. Roads allow access to cultural resources, which can result in illegal surface collection and excavation. Open vehicular access to cultural resources affords an opportunity for cultural resource monitoring and management.

Alternatives that would dramatically decrease motorized access would be Alternatives B and C. Under these alternatives illegal surface collection and excavation could likely continue at present or higher levels because vandals could ignore road closures. In addition, they might feel more secure in their illicit activities if the BLM was hampered in its monitoring efforts. Alternatives that would only slight reduce or not reduce motorized access would be the Proposed RMP and Alternatives A and E. Access to public lands would allow illegal looting and excavation at present rates but would also permit greater access to law enforcement in surveillance operations.

Off-Highway Vehicles. Unrestricted OHV and mechanized vehicle use harms cultural resources, causes compaction, alters surface water drainage and erodes the landscape and, by extension, cultural resources. Organized OHV and mechanized vehicle event locations can be cleared and effects mitigated through adherence to the National Historic Preservation Act, but the effects caused by dispersed OHV and mechanized vehicle activities would not be mitigated unless they are discovered.

Alternatives A and E place the fewest restrictions on OHV and mechanized vehicle use within the Planning Area. The Proposed RMP would be considerably more restrictive than Alternatives A or E, with a limited number of acres designated as open to OHV and mechanized vehicle use. Alternatives B and C offer no open areas for OHV and mechanized vehicle use. Alternative B would be the most restrictive, with OHV and mechanized vehicle use in the majority of the Planning Area limited to designated roads and ways or closed to OHV and mechanized vehicle use. Alternative C designates fewer acres as closed, but still limits OHV and mechanized vehicle use in most of the Planning Area to designated roads and ways. Alternatives A and E would affect cultural resources to the greatest degree. The Proposed RMP would result in fewer effects than Alternatives A and E. Alternative C followed by Alternative B would result in the fewest OHV and mechanized vehicle related effects to cultural resources.

Recreation. Recreation development/management is a double-edged sword in relation to cultural resources. Greater use of interpretive facilities at developed recreation facilities can increase public awareness and education, thereby decreasing illegal collecting and site vandalism. However, increased recreation development generally brings more people to the area; more visitors could mean greater illegal collection and site damage. Developed recreation is viewed as less detrimental to cultural resources than dispersed recreation because it tends to concentrate people in small, predictable areas. Dispersed recreation emphasis tends to attract visitors to areas that previously had lower levels of use. This type of use is much less predictable and measurable. Under Alternative A and the Proposed RMP recreation development would be very low, and dispersed recreation use would gradually increase. Under Alternatives B and C, management emphasis would be on dispersed recreation. Recreation use under Alternative E would likely stress developed recreation facilities in order to accommodate increased visitation. Determining which alternative would affect cultural resources the most is difficult. Since dispersed recreation activities are the most difficult to monitor and control, Alternatives B and C may have the greatest effects on cultural resources.

Areas of Critical Environmental Concern, Wilderness, WSAs and WSRs. With their greater emphasis on natural values, ACECs, Wilderness, and WSAs can affect cultural resources because they reduce the number of land disturbing activities in an area. The greater the number of designated acres, the greater the effects on cultural resources.

The designation of wilderness may create an attraction for visitors, causing increased visitation and use in the area which could affect cultural resources. Effects could include increased surface disturbance at dispersed camping areas and loss of artifacts through illegal collection.

Alternative A, with the second largest acreage devoted to ACECs, would affect cultural resources to a greater degree than all the alternatives except Alternative C. The number of acres of either wilderness or WSAs within the Planning Area would be the same for all alternatives. Therefore, cultural resources would be affected to the same degree under all alternatives.

WSR designations, and especially their relationship to livestock grazing management, can indirectly affect cultural resources. Placing few restrictions on grazing in the river corridors would result in effects to cultural resources sites

through trampling, trailing, and wallowing. Greater restrictions placed on widespread grazing in the river corridors can result in concentrated livestock use at river crossings and water gaps. Total exclusion of grazing in the river corridor can focus livestock grazing impacts on lightly used upland areas, resulting in increased effects on cultural sites in the uplands. However, as a general rule, sites with the highest significance tend to occur within the river corridors and near other water sources and not in unwatered uplands. As a consequence, increased restrictions or exclusion of grazing in the WSR corridors would affect cultural resources.

All Alternatives other than Alternative C recommend no additional eligible rivers as suitable for potential designation by Congress as WSRs.

4.9.4 Summary of Effects

With the exception of wildland fire suppression, forest/woodland management, and access management, Alternative B would result in the fewest indirect effects to cultural resources of all the alternatives. With limited suppression efforts, no provision would be made for locating or protecting sites that could sustain damage. Further, fuels reduction would be depend entirely on natural forces, resulting in more intense fires of longer duration. This type of fire is known to damage surface archaeological sites. Under this alternative, increased erosion and ground visibility in unmanaged juniper woodlands would result in increased effects to archaeological sites in these areas.

Alternative E would be the least restrictive of all the alternatives and would result in the greatest level of indirect effects on cultural resources. An analysis of the remaining alternatives shows that the next lower level of indirect effects would occur under Alternative A, followed in order by the Proposed RMP and Alternative C. This evaluation is based on the increased emphasis on natural values and decreased commodity use.

4.9.5 Cumulative Effects

In the foreseeable future additional cultural resources are likely to be discovered. Cumulative effects could result from livestock grazing in riparian corridors since many of the most significant archaeological sites occur near riparian areas. Cumulative effects to cultural resources would decrease where grazing in the riparian areas has been restricted or discontinued. Cumulative effects to cultural resources are lessened when the uses of public lands are restricted to those that cause the least ground disturbance. A cultural site can be subjected to grazing pressure, OHV and mechanized vehicle use and illegal collecting, which would lead to cumulative effects that would be greater under Alternative E but would be similar under the remaining alternatives. Each instance of degradation cumulatively affects the site in terms of information potential.

Adherence to laws and regulations including the Antiquities Act of 1906; the Archaeological Resources Protection Act of 1979, as amended; Sections 106 and 110 of the National Historic Preservation Act of 1966, as amended; and Executive Order 11953 provide for the protection of archaeological resources on all public lands, and minimize any cumulative effects. These laws, regulations, and Executive Orders further require that such management be coordinated with the appropriate American Indian tribes and individuals, further reducing cumulative effects.

4.10 Native American Traditional Practices

4.10.1 Goal and Objectives

4.10.1.1 Goal - Protect traditional sites, land forms, burial sites, resources, and other areas of interest in consultation with the Burns Paiute Tribe and other tribes.

Objective 1. Monitor and protect known Burns Paiute Tribal and other tribal interest areas.

Objective 2. Integrate maintenance and protection of native subsistence species into vegetation management activities.

4.10.2 Assumptions

Native American Traditional Practices are generally tied to a particular natural resource or geographic location within the Planning Area. There may be many locations within the Planning Area where the Burns Paiute or other American Indian people have interests. The BLM works with the Burns Paiute and other American Indian people to identify and protect important places.

4.10.3 Analysis of Alternatives

Direct Effects

4.10.3.1 Alternative A

Under Alternative A, the BLM would continue active consultation/coordination with the Burns Paiute Tribe and other tribes to identify traditional practice areas in the Planning Area. Traditional Cultural Properties would be nominated or found eligible for inclusion in the National Register of Historic Places and known burial sites would be monitored and protected. Plants of cultural, traditional, and economic importance would be inventoried in cultural and botanical inventories. The Burns Paiute Tribe and other tribes would be consulted on vegetative management projects in order to identify and protect plant gathering locations.

4.10.3.2 Alternative B

This alternative would be the same as Alternative A except the amount of active consultation/coordination and inventory could decrease because of decreased commodity use.

4.10.3.3 Alternative C

This alternative would be the same as Alternative A.

4.10.3.4 Proposed RMP

This alternative would be the same as Alternative A.

4.10.3.5 Alternative E

This would be the same as Alternative A except the amount of active consultation/coordination and inventory would increase because of increased commodity use.

Indirect Effects Common to All Alternatives

The management of the following resources or uses could indirectly affect Native American Traditional Practices. All could indirectly affect cultural resources under all alternatives. Effects vary in magnitude across the alternatives.

Water Resources, Riparian Vegetation, Fish and Special Status Fish Species. Water resources, riparian/wetlands, fish habitat and special status aquatic species, and Native American Traditional Practices areas are often found in the landscape in the same location. Any management action that improves or protects water quality would likely result in preservation, or at least decreased degradation, of Native American Traditional Practice areas. Of importance is the necessity to include Native American Traditional Practice areas within physical barriers to protect them from livestock when designing water developments. One potential indirect effect caused by increased protection of riparian or wetland areas through physical barriers or decreased use would be the commensurate increased use in the uplands. American Indians use traditional plants in upland areas that may have previously received little or no livestock use. These areas could be subjected to livestock trampling and trailing effects in certain locations under a more upland focused grazing system.

Management actions under the Proposed RMP and Alternatives A and C would generally provide similar levels of protection to Native American Traditional Practices areas because livestock grazing intensity would be approximately the same in these three alternatives. Water resources and related projects in these three alternatives could indirectly affect Native American Traditional Practices use areas in upland areas, since grazing would be increasingly forced into those areas. Alternative B would eliminate livestock grazing everywhere in the Planning Area. With grazing eliminated elsewhere, water resources and related projects would not be necessary except where rehabilitation or restoration of stream system(s) would be warranted. These projects in the No Livestock Grazing Area of the Planning Area would not indirectly protect or degrade Native American Traditional Practices areas. Alternative E would probably have the most active water resources management because of the focus on commodity extraction. This alternative would likely result in the greatest effects on Native American Traditional Practices areas, particularly in upland areas when the riparian areas would be closed to livestock and wild horse grazing.

Cultural Resources. Cultural resource management in the form of surface and subsurface testing and excavation would affect Native American Traditional Practices use areas, especially historic/prehistoric camps. These effects would range from surface collection of cultural material to backhoe trenches up to four meters deep and 20 meters long. Consultation with the Burns Paiute Tribe and other tribes would be undertaken prior to implementation of any of these activities.

Cultural resource management would be the most active and produce the most ground disturbing effects on Native American Traditional Practices sites and use areas under Alternative E. Cultural resources management under the Proposed RMP and Alternatives A and C, would be moderately active and show a commensurate decrease in effects on Native American Traditional Practices and use areas. Alternative B would see the cultural resources management program limited primarily to salvage operations where cultural material and information would be lost without action. Under Alternative B, cultural resources management would affect Native American Traditional Practices and use areas the least.

Rangeland Vegetation, Noxious Weeds, Wildlife Habitat, and Terrestrial Special Status Species. Rangeland vegetation, noxious weeds, wildlife habitat, and terrestrial special status species habitat management projects are focused on plant community manipulation to reach various objectives. Most vegetation management projects, if located where important Native American traditional plants are found, would affect Native American Traditional Practices and use areas because the traditionally, and possibly economically, important plants would be replaced by another target species or plant community. Of additional concern are noxious weed chemical treatments in traditional plant gathering areas. Care must be taken to communicate with plant gatherers to make them aware of treatment area locations.

Vegetation management projects under the Proposed RMP and Alternatives C and E would probably result in the most acres of altered plant communities and have the greatest effect on Native American Traditional Practices and use areas. Alternative B would result in the least number of acres converted and provide the greatest protection for Native American Traditional Practices and use areas. Vegetation management projects under Alternative A would be fewer than the Proposed RMP and Alternatives C and E, but more than in Alternative B.

Woodlands. Juniper woodland treatments could result in effects to Native American Traditional Practices areas, particularly adjacent to root gathering areas. Prehistoric/historic root campsites and prehistoric/historic religious sites would be affected. "Drop and burn" fuels disposal in root beds could result in effects on traditionally collected plants unless slash would be disposed of during the cooler part of the year in late fall, winter, or early spring.

Juniper woodland management would be the most active under the Proposed RMP and Alternatives A, C, and E. The greatest effects would be seen under Alternative E, primarily if juniper becomes a commodity. Juniper woodland management under Alternative B would be limited because Alternative B relies on natural processes to "manage" these woodlands. Alternative B would produce the least effect to Native American Traditional Practices areas.

Social and Economic Values. Current socioeconomic values are focused primarily on consumptive use with the trend toward increasing emphasis on nonconsumptive uses. Many aspects of Native American Traditional Practice are related to gathering traditional food and medicine plants. Effects upon Native American Traditional Practice areas would be greater with consumptive than nonconsumptive use because consumptive use in rangelands usually involves ground disturbance and vegetation community changes.

Native American Traditional Practices (especially root and other plant gathering) can be considered consumptive and could be in competition with other consumptive uses or active management strategies, particularly under Alternative E. The Proposed RMP and Alternatives A and C, would affect Native American Traditional Practices at a much lower level than Alternative E. Alternative B, the least consumptive of the alternatives, would most likely result in the fewest effects on Native American Traditional Practices areas.

Energy and Minerals. In general, the fewer restrictions on the exploration and extraction of energy and mineral resources, the greater the effect to Native American Traditional Practices areas because energy and mineral resource consumption usually involves intensive ground disturbance and destruction of existing vegetation communities.

There would be no effect on Native American Traditional Practices areas by locatable, leasable, and salable energy and mineral exploration and development in the following areas closed by Congressional action or subject to WSA IMP nonimpairment criteria under all the alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, Steens Mountain Wilderness, and WSAs. Together these areas cover 72 percent of the Planning Area. Under all alternatives, open areas could have effects on Native American Traditional Practices areas. Only land with high mineral resource potential is likely to be subject to mineral exploration. Further, it is likely that only

a portion of any area with high mineral potential could be economically mined and would therefore be proposed for development. In leasing activities, there would be no surface disturbance and no effects on Native American Traditional Practices areas under NSO leasing stipulations. Reduced effects would occur on Native American Traditional Practices areas under seasonal or other special leasing stipulations. In surface disturbing exploration and development activities, Native American Traditional Practices areas could be destroyed. However, mitigation measures such as surveying for Native American Traditional Practices areas prior to surface disturbance, routing access routes away from sites with Native American Traditional Practices areas, and recordation could protect these areas.

Under Alternatives A and E, 28 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development, with potential for effects on Native American Traditional Practices areas on that much area. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and would be open under this alternative. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Under Alternative B there would be no indirect effects on Native American Traditional Practices areas because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Under Alternative C, 13 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development, with potential for effects on Native American Traditional Practices areas on that much area. Locatable minerals activity would be most likely on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 43 acres in the Planning Area that have high potential for leasable minerals and that would be open; these acres would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 13 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

Under Proposed RMP, 27 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development, with potential for effects on Native American Traditional Practices areas on that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources, and that would be open under this alternative; 281of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted where it conflicts with other resource values.

The potential for effects on Native American Traditional Practices by mineral exploration and development would be greatest under Alternatives A and E; Alternative B would have no effects, and Alternatives C and the Proposed RMP, would be intermediate in their effects with Alternative C having fewer effects.

Lands and Realty. Lands and realty management can affect Native American Traditional Practices areas, most significantly in land exchanges and land sales where traditionally used areas could be lost. Restrictions or elimination of utility corridors would reduce effects on Native American Traditional Practices areas, particularly root gathering or medicinal plant gathering sites. With greater restrictions and fewer utility corridors, effects on Native American Traditional Practices areas would be fewer. Existing land tenure management emphasis would be increasingly focused on acquiring high value lands and management easements, while utility development would be relatively static. Acquiring high value Native American Traditional Practices areas and meeting Native American Traditional Practices management objectives would be a possibility under existing management, but would be more likely under Alternatives B, C, and the Proposed RMP.

Wild Horses and Burros. Native American Traditional Practices areas are affected by wild horse use in a manner similar to livestock grazing. Currently, these effects are mitigated on a case-by-case basis when discovered. Construction of

more water developments to provide more even use of the landscape and to provide for water during drought years could affect Native American Traditional Practices areas. One potential effect caused by increased protection of riparian or wetland areas through physical barriers or decreased use would be the commensurate increased use of the uplands. Native American Traditional Practices areas in upland areas that receive little or no wild horse use could be subjected to trampling and trailing effects in certain locations under a more upland focused livestock grazing system.

Wild horse use would be approximately the same under all the alternatives because horse numbers would be managed at similar levels. Effects on Native American Traditional Practices areas from wild horses would, therefore, be the same under all alternatives.

Grazing Management. Native American Traditional Practices areas, particularly edible root and medicinal plant gathering areas, are affected by livestock grazing. These effects are trampling, wallowing, and trailing, especially near fenced or unfenced watering areas. Currently, these effects are mitigated on a case-by-case basis when discovered. In some cases, grazing projects can relieve pressure in Native American Traditional Practices areas and distribute livestock use over a wider area. In other cases, the projects can result in increased effects on gathering areas in new locations. In general, the more restrictions on livestock grazing, the fewer effects on Native American Traditional Practices areas.

Livestock grazing effects can be minimized under the Proposed RMP and Alternatives A, C, and E by adhering to a 50 percent or less utilization standard on native ranges and a 60 percent standard on nonnative ranges. Where the grazing exceeds this standard, individual mitigation measures could be implemented.

Livestock grazing would be eliminated under Alternative B, thereby eliminating grazing effects on Native American Traditional Practice areas. The Proposed RMP and Alternatives A and C, would allow more livestock grazing, resulting in greater effects. Alternative E, maximum commodity production, would result in the most effects on Native American Traditional Practice areas.

Fire Management. Wildland fire and wildland fire suppression affect Native American Traditional Practices areas in various ways. Suppression activities such as OHV use, bulldozing control lines, and occupation of fire camps can damage Native American Traditional Practices areas through sediment compaction and altered surface water drainage. Wildland fire removes ground cover and exposes rock and soil to erosion, subjecting traditional use prehistoric/historic campsites to damage from wind and water erosion, and illegal artifact collecting.

Wildland fire suppression would be most active under the Proposed RMP and Alternatives A, C, and E. Effects on Native American Traditional Practices areas from wildland fire and suppression would be similar under these alternatives. Under Alternative B, wildland fire suppression would be limited and fires would be allowed to burn larger areas than under any of the other alternatives. This emphasis on naturalness would not affect most Native American Traditional Practices areas to a greater extent than any of the other alternatives. However, fire effects on historic/prehistoric campsites would be greater under Alternative B. Larger burned acreage would mean greater exposure of surface sediments to erosion, subjecting campsites to damage from wind and water erosion, and illegal artifact collecting.

Prescribed burning can affect burnable components (such as camp trees and kitchen structures) of Native American Traditional Practices campsites. If heat is high enough and duration long enough, prescribed fire can affect the surface prehistoric/historic component of these campsites by causing artifact shatter and damage to hydration rinds on obsidian artifacts. Prescribed fire can affect the archaeological component of these sites by increasing short-term ground surface visibility. This greater visibility makes artifacts more accessible and can lead to increased illegal artifact collection. These short-term effects would be mitigated through prior cultural inventory, systematic surface artifact collection, and post-fire monitoring. After a few seasons of plant growth, ground cover decreases ground visibility. Decreased visibility can affect these campsites through decreased potential for illegal collecting. Prescribed fire management actions are usually planned to target a certain plant species or plant association, while preserving other portions of the plant community. Under this prescription, Native American Traditional Practices areas such as root plant populations are not substantially affected. However, if the burn plan calls for extreme heat generation to eliminate a target plant species that is be difficult to remove, Native American Traditional Practices areas can be affected. Nonetheless, most important Native American traditionally used plants are located in rocky, fire resistant plant communities. These lithosols are commonly used as fire breaks in fire control efforts. Even more important is that many of these species such as biscuit root(s), bitterroot, and Indian carrot are dormant before the height of the fire season or prescribed burning season in the fall and are not affected except where ground fuels are thick enough to allow the fire to cook the soil.

Prescribed burning would be most active under the Proposed RMP and Alternatives A, C, and E. Effects on Native American Traditional Practices areas from prescribed fire would be at similar levels under these alternatives. Prescribed burning could be limited under Alternative B. Thus, Native American Traditional Practices areas would be less affected by short-term ground surface visibility, exposure of surface rock and soil to wind and water erosion, and destruction or damage of artifacts at historic/prehistoric campsites.

Transportation and Roads. Roads allow access to Native American Traditional Practices areas. Closing roads as part of a TP can affect Native American Traditional Practices because traditional access may be cut off. Opening new roads could affect traditional practices by improving access for root/medicinal/other plant gathering, religious worship, and maintaining ties to traditional camps. Open access to Native American Traditional Practices areas affords the BLM an opportunity to monitor plant use and prehistoric/historic camps.

The greatest number of miles of closed roads would occur under Alternative B with fewer closed road miles under Alternative C and the Proposed RMP. Alternative E would likely see increased road miles to benefit commodity uses and would allow greater access to Native American Traditional Practices areas than the remaining alternatives. With the Steens Act in place, access under Alternative A has been reduced with the designation of the Steens Mountain Wilderness. Nonetheless, Alternative A would produce the least effect to road access compared to the Proposed RMP and Alternatives B, and C.

Off-Highway Vehicles. OHV and mechanized vehicle use affects Native American Traditional Practices areas by compacting sediments, altering surface water drainage, increasing erosion, and crushing economically important plants. Additionally, these effects could be seen in historic/prehistoric camps and sacred places where OHV and mechanized vehicle use would be allowed. Organized OHV and mechanized vehicle event locations can be cleared and any effects mitigated through adherence to the National Historic Preservation Act, but the effects caused by dispersed OHV and mechanized vehicle use cannot be mitigated unless they are discovered. Under Alternative A, the majority of the Planning Area would be designated as open to OHV and mechanized vehicle use, affecting Native American Traditional Practices areas. Alternative E would be the least restrictive of all the alternatives in terms of OHV and mechanized vehicle policy and would result in the greatest effects to Native American Traditional Practices areas. Low to moderate levels of damage to Native American Traditional Practices areas would be incurred under existing management and would decrease under the Proposed RMP and Alternatives B and C.

Recreation. Recreation development and use can affect Native American Traditional Practices areas. Greater use of interpretive developments can increase public awareness and education, resulting in decreased vandalism of traditional campsites. However, increased development and general use brings more people to the area. Increased visitor use could damage existing camps and disturb people gathering traditional plant and animal resources, as well as other people involved in Native American spiritual or religious activities. It has been noted in locations outside of the Andrews RA that American Indian people will abandon a traditionally used area when competing uses create a situation where the Indian people cannot practice their traditions without coming into contact with non-Indians. When comparing the effects of dispersed recreation with developed recreation, developed recreation may be preferred because it can specify the locations that are used. Dispersed recreation directs users into undeveloped areas and away from developed sites. For this reason, dispersed recreation is likely to affect Native American Traditional Practices and practice areas more than developed recreation.

Recreation under Alternative B would focus on dispersed use. The same would be true to lesser degree for the Proposed RMP and Alternatives C and A. Under Alternative E, developed recreation would be maximized. Dispersed recreation would probably increase as well, thus affecting Native American Traditional Practices and use areas to a greater degree than other alternatives.

Areas of Critical Environmental Concern, Wilderness, WSAs and WSRs. ACECs, wilderness, WSAs and WSR designations, with their greater emphasis on natural values, are a benefit to Native American Traditional Practices areas because they restrict the amount of human-caused ground disturbing activity. However, wilderness, WSA, and WSR designations can affect access to Native American Traditional Practices and use areas due to road closures within these areas.

Alternative A, with the second largest acreage devoted to ACECs, would result in fewer effects to Native American Traditional Practices areas than all the alternatives except Alternative C. Under Alternatives B and E, ACEC acreage would be nearly zero and would have the least effect on Native American Traditional Practices and use areas. The Proposed RMP would designate ACEC acreage at a level between Alternative A and C, and thus have a moderate effect

on Native American Traditional Practices and use areas. Acres of wilderness and WSAs would be the same for all alternatives and would equally affect Native American Traditional Practices and use areas. All Alternatives except Alternative C recommend no eligible rivers as suitable for potential designation as WSRs by Congress.

4.10.4 Summary of Effects

With the exception of potential road closures and increased dispersed recreation use, Alternative B would result in the fewest cumulative effects on Native American Traditional Practices and use areas of all the alternatives. Economic, social, and spiritual needs of the Native American community could be thwarted through widespread road closures under Alternative B and to a lesser extent under Alternatives C and the Proposed RMP. Increased dispersed recreation use may bring outside visitors into contact with Native American traditional users. While this contact could be instructive, particularly for the recreation user, increased contacts might encourage traditional users to abandon areas that have been used for thousands of years. Much of Native American traditional use is intertwined so root gathering, though seen as economic, is a blend of economic, social, and spiritual activity. Disturbing this activity inhibits the ongoing heritage of the Burns Paiute and other tribes. Alternative B, though not perfect, would result in the fewest effects on the practice and continuation of American Indian heritage in the Planning Area.

Alternative E would be the least restrictive of all the alternatives and would result in the greatest number of effects on Native American Traditional Practices and use areas. An analysis of the remaining alternatives shows that fewer effects would occur under Alternative A, followed in order by the Proposed RMP and C. This would be based on the increased emphasis on natural values and decreased commodity use.

4.10.5 Cumulative Effects

Native American consultation and coordination will continue under all of the alternatives; thus, it is likely that additional Native American Traditional Practice use areas will be identified in the reasonably foreseeable future. Traditional practices use areas can be subjected to grazing pressure, OHV and mechanized vehicle use, and disturbance from dispersed recreation users, which would lead to cumulative effects that would be the greatest under Alternative E. The Proposed RMP and Alternatives A and C would have similar effects while Alternative B would result in the least amount of cumulative effects to known sites. However, Alternative B would also result in the minimum amount of coordination and consultation to identify additional sites, and road closures would result in limited access to use areas. Cumulative effects to Native American Traditional Practices use areas, particularly root gathering areas in the uplands, could increase if grazing has been restricted or discontinued in riparian areas. Each instance of degradation under the various alternatives would reduce the capacity for that use area to meet traditional economic, social and spiritual needs of Native American people, the potential exists for specific areas to be abandoned if cumulative effects reach threshold levels.

Adherence to the National Historic Preservation Act; the Native American Graves Protection and Repatriation Act; the American Indian Religious Freedom Act; Regulations 36 CFR 800, section 106 and 119; and Executive Order 13007 (Sacred Sites) minimizes any cumulative effects.

4.11 Visual Resources

4.11.1 Goal and Objective

4.11.1.1 Goal - Manage public land actions and activities in a manner consistent with VRM class objectives.

Objective. Protect, maintain, improve, or restore visual resource values by managing all public lands in accordance with the VRM system.

4.11.2 Assumptions

The FLPMA requires that public lands be managed to protect the quality of scenic values and, where appropriate, to preserve and protect certain public land in its natural condition. VRM inventory classes (I, II, III, and IV) are determined on the basis of the landscape's scenic qualities, public sensitivity toward the landscapes, and the visibility of the landscape from travel routes or observation points. Inventory classes are informational in nature and provide the basis for considering visual values in the RMP process. They do not establish management direction and should not be used as a basis for constraining or limiting surface disturbing activities. VRM Classes (I, II, III, and IV) are designated through the land use planning process, and the assignment of VRM classes is based on the management decisions made in the RMP. However, visual values must be considered throughout the RMP process. All actions proposed during the RMP

process must consider the importance of the visual values and the effects the project may have on these values. Management decisions in the RMP should reflect the value of visual resources and may be the driving force for some management decisions. For example, highly scenic areas that need special management attention may be designated as scenic ACECs and as VRM Class I based on the importance of the visual values. All of the alternatives take into consideration the determination of VRM classes, except where VRM Class I has been assigned to areas such as wilderness, the wild sections of WSRs, and other congressional and administrative designations. The Steens Mountain Wilderness, all wild WSRs, and all WSAs would be designated as VRM Class I.

4.11.3 Analysis of Alternatives

4.11.3.1 Effects Common to All Alternatives

Direct Effects

Planning Area
Designation of the Steens Mountain Wilderness, all wild WSRs, and all WSAs as VRM Class I would protect the existing scenic values and preserve the existing landscapes.

Indirect Effects

Planning Area
Recreation. The siting and design of recreation developments, facilities, and projects could affect visual resources through the introduction of forms, lines, colors, and textures that contrast with the characteristic landscape. However, these developments, facilities, and projects would be planned to minimize any potential contrasts and to meet the VRM objectives of the site. Dispersed recreation activities could strengthen existing line, form, and color contrasts through the use of existing roads, ways, and camp sites. Closure or rehabilitation of undeveloped dispersed sites would restore the visual resources of specific sites.

Energy and Minerals. Visual resources would not be affected by locatable, leasable, and salable energy and mineral exploration and development in 72 percent of the Planning Area because the following areas are closed by Congressional action or are subject to WSA IMP, including the nonimpairment criteria: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, Steens Mountain Wilderness, and WSAs.

Energy and minerals activities in open areas could affect visual resources through the introduction of forms, lines, colors, and textures that contrast with the surrounding landscape. Only land with high mineral resource potential is likely to be subject to mineral exploration. Further, only a portion of any area with high mineral potential is likely to be economically mined, and proposed for development. In leasing activities, there would be no surface disturbance and no effects to visual resources under NSO leasing stipulations and reduced effects to visual resources under seasonal or other special leasing stipulations. In surface disturbing exploration and development activities, effects to visual resources would be mitigated by measures to blend disturbance-related forms, lines, colors, and textures with the surrounding environment.

4.11.3.2 Alternative A

Direct Effects

Planning Area
Maintaining the existing VRM classes would allow a variety of management actions that could or would affect existing visual resources, depending on the VRM class. Moderate and major landscape modifications would be allowed in some areas. Designation of the Steens Mountain ACEC as VRM Class I would preserve and protect the visual resources of the ACEC that are not in the Steens Mountain Wilderness, a wild WSR or a WSA.

Indirect Effects

Planning Area
Riparian and Wetlands. Improvements to riparian vegetation, including increased vegetative density, structure, and cover could occur at specific locations with a proportional effect to visual resources, particularly in the vicinity of WSRs. The ecological status of terrestrial native plant communities would be maintained or improved. Plant density and coverage

would be maintained or increased in these communities and could affect visual resources by creating changes in color or texture.

Woodlands. Late seral stage ecological characteristics of old growth western juniper woodlands would be maintained by mechanical removal of younger trees. The effects to form, line, color, and texture would depend upon the amount of juniper removed and whether the removal would be accomplished by mechanical means or by prescribed fire. The effects to visual resources would vary depending on the VRM class of the area.

Noxious Weeds. The current integrated management of weeds would continue. Control on disturbed areas would be emphasized, as would inventories of new infestations. Noxious weeds could affect visual resources by replacing native vegetation and causing changes in form, color, or texture.

Grazing Management. Whenever existing grazing management practices on public lands are determined to be contributing to nonattainment of resource objectives, appropriate actions would be implemented. Changes in management may be implemented that would result in increased riparian and upland vegetation density and structure, consequently reducing erosion, increasing streambank stability, and increasing shade, and thereby affecting visual resources through changes primarily in color and texture. Range improvements could affect visual resources through the addition of forms, lines, colors, and textures that are not found in the surrounding landscape.

Energy and Minerals. See Effects Common to All Alternatives. Visual resources in 28 percent of the Planning Area could be affected by surface disturbance from locatable, leasable, and salable mineral exploration and development. Visual resources would most likely be affected in the two percent of the Planning Area that has high potential for locatable minerals, and that would be open. Visual resources would most likely be affected on the 332 acres in the Planning Area that have high potential for leasable geothermal resources, and that would be open. Salable minerals activity could affect visual resources anywhere on the 28 percent of the Planning Area that is open.

Wildland Fire Management. All wildland fires would be suppressed. Although fire suppression could have short-term effects to visual resources, in the long term, larger, hotter fires could occur that could cause greater effects to visual resources because of the greater acreage burned and resulting changes to spatial arrangements, colors, patterns, and vegetation mosaics. Other specific long-term actions that could affect visual resources would be the addition of linear features from fire line construction and vehicles driving cross-country.

Lands and Realty. The management actions associated with authorizations of new ROWs, utilities, and permits for large-scale powerlines, fiberoptic cables, and pipelines would be conducted consistent with existing land use planning, regulation, and law. ROWs would be located within designated corridors on a case-by-case basis. Siting additional disturbances within previously disturbed sites, such as designated powerline corridors, could reduce effects to visual resources. Lands and realty actions generally add vertical lines and linear and complex forms to the landscape.

Transportation and Roads. The potential effects of the operation and maintenance of roads to visual resources would vary depending on the location and the VRM class of the area. Effects would primarily be line and color contrasts.

Off-Highway Vehicles. OHVs and mechanized vehicles would continue to be managed in accordance with the existing open, limited, and closed OHV designations. In the CMPA, the Steens Mountain Wilderness is closed to OHV and mechanized vehicle use. In the AMU and CMPA, OHV and mechanized vehicle use would be limited to designated roads and ways in WSAs. OHV and mechanized vehicle activities can affect visual resources through vegetation loss, soil exposure, or erosion. Visual resources could be most affected in those areas designated as open (675, 914 acres in the Planning Area) because cross-country travel can add different colored, linear forms that contrast with the forms and colors of the characteristic landscape. OHV and mechanized vehicle use on designated or existing roads and ways could increase color contrasts between the travel surface and the surrounding vegetation through continued vegetation loss and soil erosion.

4.11.3.3 Alternative B

Direct Effects

Planning Area

Designation of almost half of the Planning Area as VRM Class II would retain the existing character of the landscape and would allow natural process to change the landscape. Over time, the landscape would appear more natural as the signs of management activities become less obvious. Management actions for the protection of other resources would

be allowed if VRM Class II objectives would be met. Moderate and major landscape modifications would not be allowed.

Indirect Effects

Planning Area
Riparian and Wetlands. The management goals and objectives for riparian habitat and wetlands would produce the same effects as described in Alternative A.

Woodlands. Fires that do not threaten human life or private property would be managed for resource benefits. Short-term effects could include larger black areas; however, a long-term effect would be the replacement of woodlands by shrubs, grasses, and undesirable species, thus affecting all visual elements of the landscape.

Noxious Weeds. The management goals and objectives for noxious weeds would produce effects to visual resources the same as those described in Alternative A. However, the potential for weed invasion might also be greater because fewer control methods are proposed. With the elimination of vegetative treatments, visual resources could be affected through decreased control of noxious weeds, which would allow for increased weed invasion in some areas, affecting the color and texture of many landscapes.

Grazing Management. No livestock grazing would be authorized in the Planning Area. Removal of nonfunctional or unneeded range improvement projects would restore visual resources through the removal of structures that may contrast with the landscape.

Energy and Minerals. There would be no effects to visual resources because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Wildland Fire Management. Effects to visual resources relating to initial attack and fire suppression would be increased because a minimal level of time or resources would be used for these actions. Wildland fires that threaten property, human life, or significant resources would be suppressed. Suppression of other wildland fires would be evaluated and managed with minimal suppression actions. In dry years, large wildland fires could change the landscape from sagebrush steppe to annual grassland, thereby affecting color and texture. If increased fire cycles lead to permanent establishment of grassland, the changes to the landscape would be high.

Lands and Realty. This alternative would recommend withdrawal of the entire Planning Area from public lands laws, including the mining laws. All public lands would be retained and public holdings would be increased. The entire Planning Area would be considered a ROW and realty use exclusion area. This management action would eliminate any potential effects to visual resources from such activities as described in Alternative A.

Transportation and Roads. Only those roads required by law would be constructed and road maintenance would decrease. Road closures would be the most extensive and color and line contrasts could be reduced.

Off-Highway Vehicles. With the Planning Area designated as either closed or limited to designated roads and ways for OHV and mechanized vehicle use, the effects to visual resources would either be reduced through an overall reduction in use or increased from more concentrated use. Restricting OHV and mechanized vehicle use to a limited number of designated routes, with no reduction in use, would result in increased color contrasts between the travel surface and the surrounding vegetation through continued vegetation loss, soil exposure, and soil erosion. The visual contrasts associated with areas designated as open, as described in Alternative A, would not occur.

4.11.3.4 Alternative C

Direct Effects

Planning Area
Visual resources would be managed to protect natural values. Designation of the Steens Mountain ACEC as VRM Class I would preserve and protect the visual resources of the ACEC that are not in the Steens Mountain Wilderness, a wild WSR or a WSA. Designation of the four parcels found to have wilderness characteristics as VRM Class II would protect the visual resources and naturalness of these parcels. Designating the rest of the Planning Area as VRM Classes II and

III would retain the existing landscape character in some areas, while allowing moderate changes in others. Major landscape modifications would not be allowed.

CMPA
Designating the WJMA as VRM Class III would allow the moderate landscape changes that would be needed to implement the purposes of the area. Designation of the remainder of the CMPA as VRM Class II would retain the existing landscape while allowing the implementation of small, nonevident management changes.

AMU
Designating the AMU as VRM Classes II and III would retain the existing landscape character in some areas, while allowing moderate changes in others.

Indirect Effects

Planning Area
Riparian and Wetlands. This alternative would be similar to Alternative B; however, the rate of improvement in riparian/wetland areas and upland vegetation would be expected to increase because both active and passive measures would be used. Visual resources would be maintained or improved.

Woodlands. The overall effects relating to initial fire attack and suppression of wildland fires would be the same as Alternatives A and E. This alternative would allow removal of up to 90 percent of the post settlement western juniper trees. Fires in old growth western juniper stands would be managed for resource benefits when there would be no threat to life or significant resource values. This level of treatment would cause a higher level of effects to form, line, color, and texture.

Noxious Weeds. The effects of management actions for noxious weeds would be the same as those described for Alternative A.

Grazing Management. Protection of natural values would be emphasized in the AMU while providing for minimal sustainable livestock grazing that meets allotment management objectives. Grazing in the CMPA would be allowed consistent with the Steens Act, but natural resource objectives would be emphasized. These management actions would reduce effects to visual resources. Range improvements could affect visual resources through the addition of forms, lines, colors, and textures that are not found in the surrounding landscape. Removal of nonfunctional projects would improve visual resources through the removal of structures that may contrast with the landscape.

Energy and Minerals. See Effects Common to All Alternatives. Visual resources in 13 percent of the Planning Area could be affected by surface disturbance from locatable, leasable, and salable energy and mineral exploration and development Visual resources would most likely be affected in the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open. Visual resources would most likely be affected on the 43 acres in the Planning Area that have high potential for leasable minerals and that would be open; these acres would be open under standard leasing stipulations. Salable minerals activity could affect visual resources anywhere on the 13 percent of the Planning Area that is open.

Wildland Fire Management. Effects to visual resources would be the same as Alternative B.

Lands and Realty. All ACECs, SRMAs, WSAs, WSRs, the Steens Mountain Wilderness, parcels found to have wilderness characteristics, and the CMPA would be designated as ROW and realty use authorization exclusion areas. The feasibility of consolidating existing parallel ROW facilities would be evaluated. Federal agency requests for new withdrawals would be recommended for approval only if they would protect natural values. These management actions, along with others for Alternative C, would minimize effects to forms, lines, colors, and textures found in the landscape.

Transportation and Roads. Transportation systems would be managed to meet resource goals and objectives consistent with emphasizing the protection of natural values. To the extent that this results in road closures, seasonal closures, and other limitations, visual contrasts from form, line, color, and texture changes would be minimized and would be more like those in Alternative B than Alternative A.

Off-Highway Vehicles. With the Planning Area designated as either limited to designated roads and ways or closed for OHV and mechanized vehicle use, visual resources would not be affected. The visual contrasts associated with areas designated as open, as described in Alternative A, would not occur. OHV and mechanized vehicle use would be spread

out through the Planning Area so the color and line contrasts associated the heavy use of a limited number of designated roads and ways, as described in Alternative B, would not occur.

4.11.3.5 Proposed RMP

Direct Effects

Planning Area
Visual resources would be managed to improve natural values. Designating parts of the Planning Area as VRM Classes II and III would retain the existing landscape character in some areas, while allowing moderate changes in others. Major landscape modifications would be allowed in those areas designated as VRM Class IV.

CMPA
Designating lands within one half mile of the Steens Loop Road in the WJMA as VRM Class III would allow moderate landscape changes. Designation of the remainder of the WJMA as VRM Class IV would allow major landscape modifications. Designating the remainder of the CMPA as VRM Classes II and III would retain the existing landscape character in some areas, while allowing moderate changes in others.

AMU
Maintaining the existing VRM classes would allow a variety of management actions that could or would result in form, line, color, or texture contrasts. Moderate and major landscape modifications would be allowed in some areas.

Indirect Effects

Planning Area
Riparian and Wetlands. The effects to visual resources would be the same as Alternative C.

Woodlands. Although the management actions for woodlands are different under the Proposed RMP than under Alternatives A, B, and C, the effects to visual resources would be the same as described under those alternatives.

Noxious Weeds. The effects of management actions for noxious weeds would be the same as those described for Alternative A. However, additional actions would be more likely to affect visual resources than Alternatives A, B, and C. These actions include giving priority to high quality natural resource areas, and emphasizing prevention, restoration, research, and expanded efforts to inventory for and detect new infestations.

Grazing Management. Grazing management prescriptions in both the AMU and the CMPA would be developed to meet natural resource objectives. Range improvements could affect visual resources through the addition of forms, lines, colors, and textures that are not found in the surrounding landscape.

Energy and Minerals. See Effects Common to All Alternatives. Visual resources in 27 percent of the Planning Area could be affected by surface disturbance from locatable, leasable, and salable mineral exploration and development. Visual resources would most likely be affected in the 1.5 percent of the Planning Area that has high potential for locatable minerals, and that would be open. Visual resources would most likely be affected on the 332 acres in the Planning Area that have high potential for leasable geothermal resources, and that would be open; 281 of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could affect visual resources anywhere on the 27 percent of the Planning Area that is open.

Wildland Fire Management. Effects to visual resources would be the same as Alternative C.

Lands and Realty. The acquisition of land with high public resource values would be emphasized, which could protect visual resources through acquisition and protection of scenic areas. All large scale facilities would be encouraged to locate in the designated corridors. Failure to do so would increase form and color contrasts. WSRs and the Steens Mountain Wilderness would be designated as ROW and realty use authorization exclusion areas. All WSAs, the Pueblo Mountains and Trout Creek Mountains SRMAs, and ACECs would be designated as ROW and realty use authorization avoidance areas. These exclusion and avoidance areas would preserve and retain the existing landscape characteristics. New withdrawals and modifications would be considered on a case-by-case basis.

Transportation and Roads. For existing transportation and roads management, this alternative would result in management that meets resource goals and objectives, but strikes a balance between cultural, economic, ecological and social values. Some increased visual contrasts, especially line and color, would be expected from maintenance and changes to roads surfaces. In the long-term, road closures would reduce line and color contrasts.

Off-Highway Vehicles. With most of the Planning Area designated as closed or as limited to designated roads and ways for OHV and mechanized vehicle use, visual resources would not be affected. The visual contrasts associated with an area being designated as open, as described in Alternative A, would not occur because the only area that would be designated as open is a dry lake bed. Vehicle use on the Alvord Desert playa would cause only limited color contrasts as there is no vegetation to be crushed. Each winter season, water over the lake bed eliminates any vehicle tracks. OHV and mechanized vehicle use would be spread out through the Planning Area so the color contrasts associated the heavy use of a limited number of designated roads and ways, as described in Alternative B, would not occur. Cooperative management of OHVs and mechanized vehicles could benefit visual resources through the education of users and increased compliance with the OHV and mechanized vehicle designations.

4.11.3.6 Alternative E

Direct Effects

Planning Area
A variety of management actions that could or would affect existing visual resources, depending on the VRM class, would be allowed. Moderate and major landscape modifications would be allowed in some areas.

CMPA
Designation of the WJMA as VRM Class IV would allow major modification of that landscape. Retaining the existing VRM classes in the remainder of the CMPA would allow a variety of management actions that could or would affect existing visual resources, depending on the VRM class. Moderate and major landscape modifications would be allowed in some areas.

AMU
Keeping the VRM Class II areas in the Trout Creek Mountains and around Denio Creek would retain the existing landscape character in these areas. Management actions for the protection of other resources would be allowed if VRM Class II objectives would be met. Designating the majority of the AMU as VRM Class IV would allow a variety of management actions that would affect visual resources. Major landscape modifications would be allowed in VRM Class IV areas.

Indirect Effects

Planning Area
Riparian and Wetlands. The effects to visual resources would be the same as Alternative A.

Woodlands. The effects to visual resources would be the same as Alternative A.

Noxious Weeds. The effects of noxious weed treatments would be the same as the Proposed RMP.

Grazing Management. Livestock grazing opportunities would be maximized under this alternative. Range improvements would affect visual resources through the addition of forms, lines, colors, and textures that are not found in the surrounding landscapes.

Energy and Minerals. Minerals management would be conducted the same as in Alternative A; therefore, the effects to visual resources would be the same as Alternative A.

Wildland Fire Management. All wildland fires would be suppressed using appropriate management actions. The effects to visual resources would be same as Alternative A.

Lands and Realty. Acquisition of land with high commodity values would be emphasized over lands with high natural resource values. In the long term, visual contrasts with the existing forms, lines, colors and textures in the characteristic landscape would increase if commodity uses increase. WSRs and the Steens Mountain Wilderness would be designated as ROW and realty use authorization exclusion areas. All WSAs and ACECs would be designated as ROW and realty

use authorization avoidance areas. These exclusion and avoidance areas would preserve and retain the existing landscape characteristics.

Transportation and Roads. Transportation and roads would be managed for the benefit of commodity production. Road closures would be the least extensive and maintenance requirements would be higher. New road development would be encouraged. Increased visual contrasts, especially line and color, would be expected from the increased maintenance, changes to roads surfaces, and new road development.

Off-Highway Vehicles. With the majority of the Planning Area designated as open or as limited to existing or designated roads and ways for OHV and mechanized vehicle use, visual resources could be affected. The visual contrasts associated with an area being designated as open, as described in Alternative A, could occur because most of the Planning Area would be designated as open to OHV and mechanized vehicle use. OHV and mechanized vehicle use on existing and designated roads and ways would be spread out through the Planning Area so the color contrasts associated with the heavy use of a limited number of designated roads and ways, as described in Alternative B, would not occur.

4.11.4 Summary of Effects

The management goals for visual resources, which are to manage public land actions and activities consistent with VRM objectives, could be met for all alternatives. Potential effects could occur under all alternatives, on a site specific basis, from activities such as grazing management, woodland treatments, OHV and mechanized vehicle use, mining, recreation, ROW development, and fire suppression. However, by following BMPs and mitigation for specific projects, the degree or level of effects to visual resources would be minimized.

The greatest protection of visual resources would occur under Alternative B. Alternative E is the commodity driven alternative and would have the greatest potential to affect visual resources. The Proposed RMP and Alternative C would be similar in terms of the potential to affect visual resources. However, the Proposed RMP and Alternative C would provide a greater level of protection for visual resources than Alternatives A and E.

4.11.5 Cumulative Effects

The western United States continues to experience increases in population growth with a corresponding increase in the potential for proposed development, consumptive uses, recreation activities (motorized and nonmotorized), and the continuation of existing uses such as grazing. Any increase in traffic or additional use or development of resources that would affect line, form, color, or texture of a given area could have cumulative effects to visual resources. Cumulative effects would be minimized by following BMPs and mitigation for individual projects. Potential cumulative effects would be greatest under Alternative E.

4.12 Social and Economic Values

4.12.1 Goal and Objectives

4.12.1.1 Goal - Manage public lands to provide social and economic benefits to local residents, businesses, visitors, and future generations.

Objective 1. Work cooperatively with private and community groups and local government, the Burns Paiute Tribe, and other tribal governments to provide for customary uses consistent with other resource objectives and to sustain or improve local economies.

Objective 2. Maintain and promote the cultural, economic, ecological, and social health of the Steens Mountain area.

4.12.2 Assumptions

Social and economic values, as well as natural resource protection and commodity production from public lands must, at minimum, meet the mandates of management policy and law such as the FLPMA, the Wilderness Act, the WSA IMP and the Steens Act.

The federal government collects revenues when commodities are used. Commodity use on public lands generates revenues for the federal government and private economic activity in the local, regional, national, and in some cases

international economies. Federal agencies, through business activities, also generate economic activity in the local, regional, and national economies both as employers and as purchasers of goods and services.

Public lands provide or contribute to numerous environmental amenities, such as clean water, scenic quality, and recreational opportunities. These amenities promote local communities and tourism. Recreational use of public lands generates local economic activity through purchases of food, fuel, lodging, and other goods and services from local businesses.

Public lands also contribute financially to local governments through provisions to share commodity collections with local governments and through PILT, which compensates counties for loss of local property tax due to exemption of public lands from property taxes.

4.12.3 Analysis of Alternatives

Social and economic values would be affected by the management actions specific to this resource as well as the management activities of a number of other resources/uses. The management actions outlined for the resources/uses discussed below would not all have implications on social and economic values. General effects have been summarized in this introduction, whereas specific effects are discussed under each alternative in the following sections.

4.12.3.1 Effects Common to All Alternatives

Areas open to exploration and development of locatable, leasable, and salable minerals are a potential source of revenue although there are currently no active mines or leases. Salable minerals sites provide a small source of revenue where sand and gravel and rock aggregate are sold for use on private land and they contribute to the economy of the area where the mineral materials are used on state, county, and BLM roads under a free use permit. Consistent with the Steens Act, no locatable or leasable mineral exploration or development would be allowed within the Mineral Withdrawal Area, which includes the CMPA. Salable minerals sites identified in the Steens Act would be open for exploration and development for road maintenance use even though they are within the Mineral Withdrawal Area and within the CMPA.

Water resources, wildlife, vegetation, and special status species management all affect social and economic values through the level (passive or active) and type (natural, low use versus active, high use) of management. Active, high use management requires more funding, equipment, and labor than management based on natural processes and emphasizing low use. However, active, high use management may yield greater revenues for the BLM (hence the general public) and the local economy. Management and use levels increase for all of these resources from the Proposed RMP and Alternatives B, C and E. The effects to social and economic values from increasing the management and use of these resources would be increased management costs, increased contracting/employment, and increased revenues from the commodity and recreational use of these resources. Effects to the natural and intrinsic (i.e., inherent, nonmarket) values would also increase from the Proposed RMP and Alternatives B, C and E, and may lead to a decrease in specific recreation uses, thus precluding some of the expected increases in overall use and revenues. The Wild Horse and Burro program has a limited effect on the local economy since the adoption fees go to the national program, and the contractors used would be from out of the area. However, the rare horse breeds and adoption activities do attract visitors and attention to the area and lead to spending locally that would not otherwise occur.

4.12.3.2 Alternative A

Direct Effects

Under this alternative, contracts for services and sale of products would continue to be available to local residents as need and conditions permit. Public and private partnerships to achieve shared economic objectives would also continue.

Indirect Effects

Under this alternative, commodity use would continue at existing levels. Natural resources and facilities would be managed as outlined in existing land use plans and the Steens Act. No new or additional effects would result from this alternative.

Current management practices would continue for all resources and uses under Alternative A; therefore, no new or additional indirect effects should result. Employment, livestock grazing, fire, lands and realty, transportation, OHV and

mechanized vehicle use, and recreation management and use levels would continue, thus supporting the existing conditions outlined in Chapter 3 and summarized below.

Energy and Minerals. Exploration and development activities would be allowed on 28 percent of the Planning Area.

Grazing Management. The number of livestock grazing public land in the Planning Area would continue to be about 24,500 head. Grazing fee collections would be about $132,993 annually if the current fee remains the same for the life of the plan. About 62 percent of the grazing fees would be returned to Harney County to fund rangeland improvement projects. Beef sales in Harney County were greater than $41 million in 2001, and the current sales would be expected to be close to that total. Currently, 35 permittees on 72 allotments are permitted for a total of 107,011 AUMs and utilizing 1,593,623 acres. The average amount of annual grazing fees collected would be approximately $145,000. The current stocking levels would continue subject to results of monitoring, and range improvement projects would be consistent with past management; thus, the economic effects of grazing should not change under this alternative.

Wildland Fire Management. Approximately 55 to 60 temporary firefighters would be employed each year and an average of $100,000 would be spent on contracting for fuels management in the Planning Area each year. The Burns District may also spend from $25,000 in a mild fire season to $275,000 in a severe season on temporary hires that come mostly from the local communities. Under this alternative, current spending and hiring practices would continue and there would be no change in the effects on the local economy.

Lands and Realty. Under this alternative would be the following classified acres: Zone 1 (Retention/Acquisition) - 1,533,505; Zone 2 (Exchange) - 108,219; Zone 3 (Disposal) - 7745. In the past ten years, the average annual fees collected by the BLM for realty use authorizations were $15,000 per year. Property taxes collected in Harney County in 2002 totaled $4.9 million, of which 26.5 percent went to the County General Fund. Harney County also received $518,880 in PILT in 2002, which should also remain approximately the same. Under this alternative the historical trend of a net loss of public lands in Harney County (See Cumulative Impacts) would be expected to continue into the future. This trend would be expected to diminish somewhat as public lands would be disposed of over time; therefore, less lands and opportunities would be available. The overall effect would be a slight net loss of public lands in the Planning Area over the life of the plan, though not as much as the last 20 years, resulting in a corresponding increase in county tax revenues. Some of these conveyed public lands would be converted to alfalfa, crested wheatgrass or other development that would not have occurred in public ownership. Conversion of lands to a higher commodity value should result in a higher assessed value on the land, further improving county tax revenues.

Designation of ROW corridors provides project planners with some assurance that their proposals would be possible in a given area. Such assurance would result in reduced costs to the proponent that could then be passed on to the consumer.

Transportation and Roads. Under this alternative road maintenance on the Steens Loop Road in the CMPA would continue to be made available for bid to local companies, which amounts to an average annual contracting expense of $40,000 (based on five year average). The Steens Loop Road would be 52.59 miles in length. The BLM spent $78,302 on contracting for road maintenance in the CMPA in 2002. On the average, road maintenance would be contracted out at approximately $760 per mile. The snow line on the North Steens Loop Road would continue to be accessed by motorized vehicles during the winter months, which would provide recreational opportunities with economic effects to local businesses and service providers.

Off-Highway Vehicles. No data are available on expenditures by OHV and mechanized vehicle enthusiasts in the local economy, but logically this group spends money on food, gas, and possibly lodging in the local communities. OHV and mechanized use would remain at current levels under this alternative; therefore, the effects on the local economy should not change.

Recreation. Travel related spending in Harney County in 2001 was $18,300,000 and was responsible for 7.4 percent of employment. Revenues from travel accounted for $3,900,000 in earnings.

Heritage tourism (e.g. visits to the Riddle Brothers Ranch) contributes to the local economy, but that contribution has not been quantified. Under this alternative, heritage tourism would likely continue at least at the current rate.

No new facilities or recreation development would be proposed and current use levels would be expected to continue. In addition, SRPs would continue to be issued at current levels and no measures to promote tourism/visitation would be planned; therefore, no change in the effect on the local economy should occur.

Wilderness. There were 1,224 registered visitors to the Steens Mountain Wilderness in 2002; however, there would be no information on the total number of visitor days. The average value derived from recreation benefits would be $40 per visitor day and visitor expenditures would average $30 per day. Ecological services (watershed protection, carbon storage, nutrient cycling, and fish and wildlife habitat) would be additional benefits associated with wilderness. No measures to promote tourism/visitation would be planned and the wilderness would remain under the current management and boundary; therefore, no change in the effect on the local economy should occur.

4.12.3.3 Alternative B

Direct Effects

This alternative emphasizes natural processes and limits commodity production to that required by law. No grazing, SRPs, or OHV and mechanized vehicle use beyond that stipulated in the Steens Act would be allowed, and the Planning Area would be closed to minerals exploration or development as well as to energy and minerals leasing. The entire Planning Area would be an exclusion area for ROWs, realty use authorizations, and renewable energy development; emphasis would be on retention of lands. Recreation and tourism would be allowed but not promoted. Road closures resulting in decreased access and maintenance could inhibit recreational activities.

If this alternative were implemented, commodity production on public land within the Planning Area would be sharply curtailed. With the exception of those resource values assured by the Steens Act, most social and economic values would cease to be viable. Cattle production, mineral extraction, and energy development would not be generally allowed in the Planning Area, thereby affecting the economic base of Harney County. Tourism and recreation would be discouraged and restricted where possible; tourism and recreation dollars targeted for local businesses would be minimal.

The effects to social and economic values associated with this alternative include the potential loss of revenues from mining, energy, agricultural production, and disposal of lands as well as a decline in revenues from recreation and tourism. Local contracts and employment would decline, resulting in indirect effects to the retail and service industries. Intrinsic and natural values would also be affected by this alternative. However, such effects on the natural environment may promote environmental amenities such as scenic qualities and protection of cultural resources, thereby conserving natural resources for future generations while promoting dispersed or primitive recreation, solitude, and Native American Traditional Practices. The increase in these values may offset any revenues lost from recreation and commodity production.

Indirect Effects

Energy and Minerals. Under this alternative, there would be no opportunity for future development because the entire Planning Area would be closed to minerals activities.

Woodlands. Natural processes would be allowed to define the structure and composition of the woodlands. Mechanical treatment of western juniper would only be done to reduce hazardous fuels accumulations. The number of contracts available for local business would decline.

Grazing Management. Grazing use would be eliminated from public land within the Planning Area, including the CMPA, which would decrease the total number of livestock grazed in the county, resulting in a decline in beef sales. No range projects would be proposed for public lands within the Planning Area, thus eliminating the current amount spent on contracting for range improvements. No grazing fees would be collected due to the complete elimination of livestock grazing. County revenues for range improvement funds would be greatly reduced, as would the sale of beef in Harney County due to the elimination of grazing on public land in the Planning Area.

The elimination of grazing from FFR allotments would require grazing permittees or private landowners to either fence off their property from public lands or not graze those pastures that contain public land. Both options could be financially difficult for those permittees.

Wildland Fire Management. Actions requiring personnel and contractors would be similar to the current situation, causing no change in the effects on the economy. Reliance on wildland fire use would reduce the amount of local resources used for firefighting. Specifically the use of Emergency Equipment Rental would be reduced.

Lands and Realty. Under this alternative, all lands would be Zone 1. There would be a slight net gain of public lands in the Planning Area resulting in a loss of county tax revenues since all acquisition would be by purchase or donation with

no disposal of public lands. Complete retention and exclusion of ROWs and land use authorizations would also limit opportunities for the expansion of private commodity based enterprises. The converse could occur resulting in an offsetting effect on tax revenues. With less public lands available for disposal, more conversion and development of existing private lands may be expected, resulting in higher assessed values on those lands, and consequently higher property tax revenues.

Transportation and Roads. Under this alternative, 156 miles of roads would be closed in the CMPA and no longer require maintenance. Eighteen miles of the Steens Loop Road would be closed, decreasing the amount spent on maintenance contracts by approximately $13,700. In addition, the remaining open sections of the Steens Loop Road would be maintained at a lower level. This could affect access for public land users leading to possible decreased tourism and loss of tourism dollars that contribute to the local economy. This alternative would mandate the closure of the Steens Loop Road during winter months. Winter recreation would effectively be discouraged during those times when the snowline would be at a distance from the gates, resulting in possible lost revenue to the economy.

Off-Highway Vehicles. OHV and mechanized vehicle use would be limited and the closed areas would be maximized. This would result in decreased use and related expenditures.

Recreation. Recreation and tourism would not be encouraged. No recreation or tourism oriented facilities would be constructed, resulting in limited opportunities and a decline in visitation. This could mean losses in revenues to local businesses and service providers. In addition, the SRPs in the AMU would be revoked resulting in a decrease of fees collected. With 18 miles of the Steens Loop Road closed, heritage oriented tourism would be reduced, thereby affecting the local economy.

Wilderness. A five percent increase in the length-of-stay could result in a five percent increase in visitor days and the value derived from recreation benefits ($40 per visitor day) and visitor expenditures (average $30 per day).

4.12.3.4 Alternative C

Direct Effects

Under this alternative, commodity production would be restricted to increase protection of natural values. Commodity use would be allowed at levels that could be maintained through time and that contribute to the stability of the local livestock and mining industries. Local contracts would be targeted for services to restore and maintain natural systems. Management would continue to facilitate commodity uses and continued access and availability of natural resource amenities. Renewable energy authorizations, ROWs, and realty use authorizations would be considered on a case-by-case basis in the AMU outside of ACECs, WSRs, parcels with wilderness characteristics, and WSAs. Land tenure would be limited, and emphasis would be on acquisition of lands with natural or cultural values. OHV and mechanized vehicle use, SRPs, and some forms of recreation could be restricted. Road closures would decrease access for recreation or commodity production.

Implementation of this alternative would result in restrictions on commodity production when natural resources were threatened. Local contracts for goods and services would be available primarily for projects designed for protection, conservation, restoration and maintenance of natural resources. Tourism and recreation would be managed as far as possible with an emphasis on low effects to natural values and on education concerning those values.

This alternative attempts to maintain stability in the local economy; however, it would still have some effect on commodity production, realty use authorizations, land tenure, renewable energy, and recreation, thereby resulting in a decline of revenues from these uses. Intrinsic and natural values would be affected and improvements to the natural environment may promote environmental amenities such as scenic qualities and protection of cultural resources. This may lead to increases in dispersed or primitive recreation, solitude, and Native American Traditional Practices. The increase in these values may offset any revenues lost from recreation and commodity production. In addition, the emphasis on targeting local contracts would benefit the local economy.

Indirect Effects

Energy and Minerals. Under this alternative, 13 percent of the Planning Area would be open to locatable, leasable, and salable minerals activities.

Grazing Management. Grazing management and range improvements would be similar to the existing management with the exception that some grazing permits may be reduced or discontinued. Eliminating or reducing grazing permits and AUMs would result in decreased fees (reduction of AUMs would reduce fees) and could reduce the total number of livestock grazed (reduction of AUMs equates to reduction of livestock and therefore of beef sales). The reduction in livestock grazing would decrease the amount of grazing fees collected from the existing level. This would reduce the amount the county would receive for range improvement funds. The sale of beef in Harney County would be reduced from the existing level.

Wildland Fire Management. Actions requiring personnel and contractors would be similar to the current situation, resulting in so there would be no change in the effects on the economy.

Lands and Realty. Under this alternative Zone 1 lands would include 1,202,317 acres; Zone 1A lands would include 171,019 acre; Zone 1B lands would include 257,136 acres; Zone 2 lands would include 15,158 acres; and Zone 3 lands would include 3,837 acres. There would be a slight net gain of public lands in the Planning Area with a corresponding loss in county tax revenues, since private lands and values acquired would exceed the values of public lands being disposed.

Designation of ROW corridors provide project planners with some assurance that their proposals would be possible in a given area. Such assurance would result in reduced costs to the proponent, which could then be passed on to the consumer.

Transportation and Roads. Twenty-nine miles of roads would be closed and no longer require maintenance. This would decrease the amount spent on contracted maintenance by approximately $22,000. In addition, this could affect access for public land uses which contribute to the local economy. The Rooster Comb portion of the Steens Loop Road (three miles) would be permanently closed. This could affect tourist numbers, thereby decreasing spending in the region. The existing gate system would be used for access to the snowline on the North Steens Loop Road for nonmotorized recreation only. There could be a reduction in winter recreation as a result.

Off-Highway Vehicles. The effects of OHV and mechanized vehicle designations would be similar to Alternative A.

Recreation. Recreation and tourism would be similar to Alternative A with some additional limitations and decline of visitation would be anticipated to occur. This could mean losses in local revenues. Heritage tourism could possibly be affected by the closure of the Rooster Comb section of the Steens Loop Road with some effect on tourist dollars.

Wilderness. An increase in the length-of-stay for the Gorges and an increase in the length-of-stay for the uplands could result in an overall increase in visitor days and the value derived from recreation benefits ($40 per visitor day) and visitor expenditures (average $30 per day) for those days when money is spent. An increase in the length of stay could result in an overall increase in the value of the personal social experience of each wilderness visitor, if not an increase in dollars spent.

4.12.3.5 Proposed RMP

Direct Effects

This alternative attempts to balance social, economic, cultural, and ecological components while incorporating cooperative management. Sustainable commodity use and resource protection that promotes tourism would be encouraged. Renewable energy, ROWs, and realty use authorizations would not be as restrictive as Alternatives B or C, and the retention and acquisition of lands would focus on lands within specially designated areas such as the Steens Mountain Wilderness, WSAs, and ACECs. OHV and mechanized vehicle use would be allowed on most roads and ways in the Planning Area.

Under this alternative, emphasis would be placed on local cooperative, collaborative processes and cooperative agreements involving services and products available locally. These processes and agreements would be aimed at providing for a sustainable and diverse local economy. This economy would be stable and result in long-term economic viability for the regional populace. Tourism and recreation would be encouraged with money brought into the region benefitting local businesses. Emphasis, however, would be on establishment of steady, year-round business that would provide continued economic benefit to the area.

Implementation of this alternative would result in effects on the natural environment such as soils, vegetation, water resources, and wildlife. There would be some effects to commodity production, realty use authorizations, land tenure, and renewable energy, which may benefit the local economy. Intrinsic values would also be affected by this alternative.

Indirect Effects

Woodlands. Developing a market for woodlands products such as firewood, biofuels and posts and poles could add a new economic dimension to the Planning Area by increasing the base for possible local income. This market would be balanced with maintaining a sustainable source of wood products and preserving ecological integrity.

Noxious Weeds. An increased emphasis on controlling and eliminating weeds would contribute to revenues when local businesses are involved in weed control. Controlling and eliminating noxious weeds would be most beneficial to maintenance and improvement of agricultural and grazing lands. Wildlife populations would also benefit through habitat improvement. Weed control activities would be an important contributor to the economic well being of the Planning Area.

Wildlife. Improvement of wildlife habitat would generally lead to increased wildlife populations. This increase could contribute to a corresponding increase in visitor days to the Planning Area by fishermen, hunters, and bird and wildlife watchers. The demand for local goods and services could increase as could revenues to local goods and service providers. Energy and Minerals. Under this alternative 27 percent of the Planning Area would be open to locatable and salable minerals activities and 28 percent of the Planning Area would be open to leasable minerals activities.

Grazing Management. Grazing management and range improvements would be similar to the existing management to promote sustainable grazing levels. Under this alternative, livestock numbers and beef sales would be expected to remain at or near current levels. Contract expenses would also remain at or near current levels. The permitted use would be nearly the same as in the present situation; therefore, the number of livestock grazing public land and the grazing fees collected would be nearly the same. The amount of funds that Harney County would receive for rangeland improvements would be about the same as in the present situation. The sales of beef in Harney County would be nearly the same as in the present situation at first, and would increase over the life of the plan with inflation.

Wildland Fire Management. Emphasis on suppression of fires that threaten areas of economic values and managing for cultural, economic, ecological, and social values may require additional staffing and contractors. An increase in staffing and an increase in contracting would mean increased revenue to the local economy.

Lands and Realty. Under this alternative Zone 1 lands would include 876,615 acres; Zone 1A lands would include 172,191 acres; Zone 1B lands would include 255,964 acres; Zone 2 lands would include 340,323 acres; Zone 2A lands would include 1,319 acres; and Zone 3 lands would include 3,055 acres.

Generally, over the long term, no change would be expected in the ratio of public lands to private lands in the Planning Area due to a balanced variety of land tenure actions including both acquisitions and disposals. Due to additional public land disposals in neighboring Planning Areas, there would continue to be an overall net loss of public lands in Harney County consistent with the historical trend. For this reason, county tax revenues would be expected to increase. Property tax revenues would be further increased by disposal of public lands, some of which would be converted to commodity production such as seedings or alfalfa fields under private ownership. This should result in higher assessed values on those lands.

Designation of ROW corridors provide project planners with some assurance that their proposals would be possible in a given area. Such assurance would result in reduced costs to the proponent that could then be passed on to the consumer.

Transportation and Roads. Under this alternative, none of the Steens Loop Road would be closed and contracting maintenance of the Steens Loop Road would continue. This could provide an average of $40,000 to the local economy. Within the CMPA, seven miles of roads would be closed and no longer require maintenance. This could possibly decrease tourism and could affect the local economy, but it is anticipated the effect would be minimal. This alternative would allow motorized winter access through the North Steens Loop Road gate for both motorized and nonmotorized recreation, thereby maintaining and possibly increasing the influx of recreation oriented money into the County.

Off-Highway Vehicles. The effects of OHV and mechanized vehicle designations would be similar to Alternative A.

Recreation. Recreation and tourism would be promoted when consistent with other resource objectives, with the potential to increase visitation, especially in the AMU. This could result in gains in local revenues. Heritage tourism would be encouraged, with emphasis on the historic social structure of Harney County.

Wilderness. An increase in the length-of-stay for the Gorges and an increase in the length-of-stay for the uplands could result in an increase in visitor days and the value derived from recreation benefits ($40 per visitor day) and visitor expenditures (average $30 per day) averaged over the entire trip. An increase in the length of stay could result in an overall increase in the value of the personal social experience of each wilderness visitor, if not an increase in dollars spent. With the wilderness designation, it is expected that visitation to Steens Mountain, and especially the Steens Mountain Wilderness Area, would steadily increase. As use increases, demand for local goods and services could also rise and contribute to gains in local revenues.

4.12.3.6 Alternative E

Direct Effects

Under this alternative, commodity production, local contracts, and tourism would be emphasized. Grazing and minerals exploration and development would be maximized, while renewable energy would be managed the same as under the Proposed RMP. Land tenure would be focused on acquisition of lands with commodity producing values. ROW and corridor management would be similar to the Proposed RMP, but with fewer restrictions. New roads would be constructed and new recreation facilities would be developed. Recreation and OHV and mechanized vehicle use would be maximized, with over half of the AMU designated as open for OHV and mechanized vehicle use.

This alternative would be the least restrictive on commodity uses and would have effects on the natural environment such as soils, vegetation, water resources, and wildlife. This alternative would have minimal limiting effects on commodity production, land authorizations, land tenure, renewable energy, and recreation, since commodity production and public lands use would be maximized. Intrinsic values would also be affected by this alternative. This alternative could, if enacted, provide the maximum production of goods and services. Contracts would be targeted for local businesses and individuals to the extent possible. Tourism and recreation would be managed to bring in maximum dollars. Industries that would increase the regional economy would be courted.

Indirect Effects

Woodlands. A widespread market for wood products would be developed to the fullest extent possible, deriving maximum income and support for the local economy.

Noxious Weeds. Indirect effects would be the same as for the Proposed RMP.

Wildlife. Indirect effects would be the same as for the Proposed RMP.

Energy and Minerals. Exploration and development activities would be allowed on 28 percent of the Planning Area.

Grazing Management. Grazing management and range improvements would be maximized under this alternative and livestock numbers and beef sales would be expected to increase. The construction of new range improvement projects would result in an increase in contracting dollars. The permitted use would increase in the Planning Area, resulting in an increase in the number of livestock grazing public land and the amount of grazing fees collected. Harney County would receive more funds for range improvement projects, providing a positive effect for the economy. Beef sales in Harney County would be greater than in the present situation and would increase over the life of the RMP along with inflation.

Wildland Fire Management. Managing for resource and economic benefit may require additional staffing and contractors. Increase in staffing and an increase in contracting would mean an increase in financial support to the local economy. In addition, post-fire seedings would focus on maximum economic gain, which may support additional livestock grazing and increased AUMs and beef sales.

Lands and Realty. Under this alternative, Zone 1 lands would include 705,072 acres; Zone 1A lands would include 171,019 acres; Zone 1B lands would include 257,136 acres; Zone 2 lands would include 503,948 acres; and the Zone 3 lands would include 12,296 acres. This alternative maximizes the potential for disposal of lands as well as ROWs and realty use authorizations. Land disposal would also increase opportunities for expansion of private commodity- based

enterprises. Increased opportunities for ROWs and realty land authorizations would also have effects on the economy. Although relative acreage in Zones 1, 1A, and 1B would generally remain constant, the potential would exist for an overall net loss of public lands in the Planning Area due to liberalized disposal possibilities in other zones. A corresponding increase in county tax revenues could occur. Further, tax revenues would be increased by disposal of public lands, some of which would be converted to commodity production such as seedings or alfalfa fields under private ownership. This should result in higher assessed values on those lands.

Designation of ROW corridors provide project planners with some assurance that their proposals would be possible in a given area. Such assurance would result in reduced costs to the proponent that could then be passed on to the consumer.

Transportation and Roads. Emphasis on local contracting in addition to possible new road construction and increased road maintenance, would lead to increased spending on maintenance and local contracting. Under this alternative, winter recreation access would be expanded. Motorized access to the snowline on the north would continue for both motorized and nonmotorized recreation. Winter access to the South Steens Campground would be instituted, thereby increasing recreational opportunities and increased business opportunities.

Off-Highway Vehicles. OHV and mechanized vehicle use would be maximized and promoted, resulting in increased use and related expenditures within the community.

Recreation. Recreation and tourism would be maximized, resulting in increased visitation. This could mean increased revenues for local business and service providers. Increased emphasis on heritage tourism would be aimed at encouraging visitation to the region, subsequently increasing income to local businesses and service providers.

4.12.4 Summary of Effects

Alternative A would be a continuation of current management, and commodity use would continue at existing levels. Activities such as recreation, livestock grazing and OHV and mechanized vehicle use would not be promoted as with the Proposed RMP, and Alternative E nor would they be discouraged as with Alternatives B and C. Income and expenditures from energy and minerals, recreation, grazing, wildland fire management, lands and realty, transportation, OHV and mechanized vehicle use, and wilderness would remain relatively stable with no new revenues forthcoming to the local community. The goal of providing social and economic benefits to local residents, businesses, visitors, and future generations may be achieved through the implementation of this alternative.

Alternative B promotes natural processes and limits commodity production to a greater degree than the Proposed RMP or Alternatives A, C or E. Implementation of this alternative may result in the greatest protection of natural resources and promotion of the intrinsic values associated with the Planning Area; however, social and economic benefits would be much more limited than under all other alternatives. This alternative may not achieve the goal of providing social and economic benefits to local residents, businesses, visitors, and future generations.

Alternative C also restricts commodity production; however, it is not as limiting as Alternative B and allows for uses that can be maintained through time and that contribute to the stability of the local livestock and mining industries. Revenues may be less than those derived under the Proposed RMP and Alternatives A and E, nevertheless, an emphasis on targeting local contracts would benefit the local economy. As with Alternative B, the protection of natural resources may promote intrinsic and natural values as well as environmental amenities such as scenic qualities and protection of cultural resources, and lead to increases in dispersed recreation, solitude, and Native American Traditional Practices. The goal of providing social and economic benefits to local residents, businesses, visitors, and future generations may be achieved through the implementation of this alternative.

The Proposed RMP attempts a balance between social, economic, cultural, and ecological components. In addition, this alternative emphasizes collaborative processes and cooperative agreements aimed at providing a sustainable economy. This alternative would be less restrictive on commodity uses than Alternatives B and C and would have more effects on the natural environment such as soils, vegetation, water resources, and wildlife than either Alternative B or C. Intrinsic values would also be affected more than under Alternatives B or C. The effects to commodity production, realty use authorizations, land tenure, renewable energy, and recreation would not be as great as Alternatives B and C and may favor the local economy. With the possible exception of Alternative E, management under this alternative would require more funding and personnel than the other alternatives. However, the goal of providing social and economic benefits to local residents, businesses, visitors, and future generations would be achieved through the implementation of this alternative.

Alternative E would be the least restrictive on commodity uses and would have more effects than any other alternative on the natural environment such as soils, vegetation, water resources, and wildlife. Intrinsic values would also be most affected the most by this alternative. The effects on commodity production, land authorizations, land tenure, renewable energy, and recreation, would be less than with the Proposed RMP or Alternatives A, B, or C, since commodity production and public lands use would be maximized. Thus implementation of this alternative could result in the maximum production of goods and services. The goal of providing social and economic benefits to local residents, businesses, visitors, and future generations may be achieved through the implementation of this alternative. However, effects to the natural environment may hinder benefits for future generations.

4.12.5 Cumulative Effects

Historically, the economy within the Planning Area was based on production of agricultural goods. Although this production continues to play a vital role, the current trend shows increasing revenues from tourism and recreation. Due to the population increase in Portland and Bend, as well as the publicity the Steens Mountain area is receiving, it is likely that tourism and visitation to the Planning Area are likely to continue to increase in the reasonably foreseeable future. Economic activities conducted on the lands adjacent to the Planning Area (BLM, USFS, state, USFWS and private lands), as well as economic development or recession within the county, would produce cumulative effects on social and economic values. Anticipated recreation growth would increase the demand for recreation across all ownerships. Alternatives that close lands in the Planning Area to OHV, mechanized vehicle, or other recreational use, or that limit access, may place additional pressure on surrounding lands. However, increased recreation and tourism as promoted by the Proposed RMP, and Alternative E could also provide opportunities for growth in the retail and service sector, thereby reducing unemployment. Growth in recreation and tourism could also lead to increased traffic, effects to the rural character of the region, and diminished opportunities for solitude or primitive experiences.

Agricultural production in the region could be affected by reduced AUMs under Alternatives B and C, which would either put additional pressure on private lands or lead to a reduction in overall production, thereby affecting the agricultural sector of the economy. Increased recreation and commodity production in the Planning Area and surrounding lands may offset losses in the agricultural sector. Such a shift would be based on yet unknown commodity projections, and would be more likely under the Proposed RMP, and Alternative E, which have fewer restrictions on recreational use and access.

Minerals and energy would not be expected to be a major economic contributor to the region. However, other BLM programs including land tenure, realty use authorizations, local contracting, purchasing, and employment would have cumulative effects when combined with the activities of private industry, the USFS, USFWS, and state and local governments. Economic activities conducted on lands adjacent to the Planning Area, as well as economic development or recession with the county, could also produce cumulative effects on social and economic values, depending on the types of activities.

4.13 Energy and Minerals

For renewable energy permitting, see Lands and Realty at Section 4.17. The primary form of authorization for wind and solar energy development would be a ROW or other realty use authorization.

4.13.1 Goals and Objectives

4.13.1.1 Goal 1 - Provide opportunities for the exploration and development of locatable minerals in a culturally- and environmentally-sound manner.

Objective. Identify land with federal mineral estate available to locatable mineral exploration and development.

4.13.1.2 Goal 2 - Provide opportunities for the leasing and development of oil and gas, geothermal, and solid leasable mineral resources in a culturally- and environmentally-sound manner.

Objective. Identify leasing categories for the land.

4.13.1.3 Goal 3 - Provide opportunities for the production of salable minerals by local, state and federal agencies and the public in a culturally- and environmentally-sound manner.

Objective. Permit development of mineral materials sources on a case-by-case basis in areas where development does not conflict with other resource values.

4.13.2 Assumptions

Table 2.13.1 shows that minerals management decisions can be made on 28 percent of the Planning Area (467,831 acres of available BLM administered land in the AMU). Land that is open for mineral exploration and development is not necessarily going to be mined. It is likely that only land with high mineral resource potential would be subject to exploration. Further, it is likely that only a portion of any area with high potential could economically produce energy or mineral resources and would therefore be proposed for development.

Only a small percentage of the available BLM administered land has high potential for locatable mineral resources. Table 2.13.1 shows available acres with high potential for the various categories of locatable minerals. Available land that has high potential for hot springs gold and mercury comprises two percent of the Planning Area (32,055 acres); 0.08 percent of the Planning Area (1,313 acres) is available land that has high potential for porphyry copper, gold, and molybdenum; and only one acre of available land has high potential for diatomite. There are no acres of available BLM administered land outside of the Mineral Withdrawal Area, designated WSRs, Steens Mountain Wilderness, and WSAs with high potential for uranium or vein gold.

Only a small percentage of the available BLM administered land in the Planning Area has high potential for leasable mineral resources. Table 2.13.1 shows available acres with high potential for various categories of leasable minerals. There are no available acres with high potential for oil and gas resources, 332 available BLM administered acres in the Planning Area with high potential for geothermal resources, and no available acres with high potential for sodium or potassium mineral resources.

Land available for salable minerals development is slightly different than land available for leasable and locatable minerals because the Mineral Withdrawal Area is closed to mineral materials development except at those sites specifically identified in the Steens Act, which are be permitted for road maintenance use only. The Steens Act identifies sites comprising a total of 513 acres for development of mineral materials sources within the Mineral Withdrawal Area. Table 2.13.1 shows land available for designation as open or closed as part of this land management analysis at 467,831 acres, which is 28 percent of the Planning Area.

4.13.3 Analysis of Effects

4.13.3.1 Effects Common to All Alternatives

Direct Effects

The direct effects of energy and mineral exploration and development would be removal of the locatable, leasable, or salable mineral commodity. Geothermal heat would be replenished by natural processes over a period of approximately 100 years; however, water removed containing geothermal heat may not be reinjected to intercept the heat source; therefore, water replenishment in a geothermal system could take longer in this semi-arid climate.

Indirect Effects

Operators who propose surface disturbing activities beyond casual use activities for locatable minerals exploration on most of the available BLM administered land must provide a notice to the BLM prior to surface disturbance in addition to a reclamation bond, and must take measures to prevent undue or unnecessary degradation. Operators who propose surface disturbing activities beyond casual use activities for mining or for locatable mineral exploration on available BLM administered land in ACECs, areas designated "closed" to off-road vehicle use, and any lands or waters known to contain federally proposed or listed T&E species or their proposed or designated critical habitat are required to prepare a plan of operations to serve as the basis of site specific NEPA analysis and determination of mitigation measures prior to surface disturbance; those operators must also provide a reclamation bond prior to surface disturbance. Mining claim use and occupancy also requires prior NEPA compliance. Surface disturbance for leasable and salable minerals requires site specific NEPA analysis and resulting mitigation measures prior to surface disturbance.

Areas to be disturbed may require inventories or special studies to determine the extent of effects on other resources. The operator may be required to complete the inventories or studies and hire a contractor to conduct environmental analysis under guidelines provided by the BLM.

Common mitigation measures for locatables, nonenergy leasables, and salable mineral materials can be found in BLM Handbook H-3809-1. For energy leasables, common mitigation measures can be found in the standard lease terms and conditions stated on the lease forms for oil and gas (Form 3110-11) and geothermal resources (Form 3200-4). Relocation of not more than 660 feet (0.125 mile) or the prohibition of new surface disturbance for not more than 60 days would be generally consistent with lease rights. BMPs also serve as a source of site specific mitigation measures and can be found in Best Management Practices for Reclaiming Surface Mines in Washington and Oregon, released as Oregon Department of Geology and Minerals Industries Open-File Report O-96-2.

The following paragraphs provide specific exploration and development constraints required to protect resources:

Air Quality. All operators would comply with applicable federal and state air quality standards, including the CAA. Common dust abatement measures would be watering dirt and gravel roads, and having crushing equipment inspected and permitted by the DEQ.

Water Resources. All operators would comply with applicable federal and state water quality standards, including the CWA. The operator would take measures to isolate, remove, or control acid-forming, toxic, or deleterious materials. Such measures may include sampling rock in the area for acid-rock drainage potential; constructing a groundwater model based on monitoring wells and surface topography, spill containment and cleanup measures; and constructing stormwater collection basins as well as taking other measures to control erosion and stormwater runoff.

Soils and Biological Soil Crusts, Riparian and Wetlands, Woodlands, and Rangelands. At the earliest feasible time, the operator would reclaim the area disturbed, except to the extent necessary to preserve evidence of mineralization for locatable minerals. Reclamation would include scraping and stockpiling topsoil; seeding the soil stockpiles; scarifying compacted ground; respreading the soil stockpiles as soon as an area is exhausted or no longer in use; reshaping disturbed areas; revegetating disturbed areas; watering haul roads and taking other dust abatement measures; and constructing stormwater collection basins as well as taking other measures to control stormwater runoff.

Wildlands Juniper Management Area. Minerals activities would be limited to the 120-acre site named Juniper Materials Source located within the WJMA, and would be for road maintenance use only. The operator would comply with all applicable federal and state fire laws and regulations, and would take all reasonable measures to prevent interference with vegetation treatment methods used in this area.

Noxious Weeds. The operator may be required to take mitigation measures to reduce the spread of noxious weeds. Mitigation measures may include using certified weed-free seed in reclamation, spraying weed infestations when they are discovered, and rinsing equipment at a commercial car wash prior to entering BLM administered lands.

Fish and Wildlife. Reclamation would include rehabilitation of fisheries and wildlife habitat. Operators may be required to construct a fence around their operations. Operators may be required to develop an alternate water source for use by wildlife if the operations affect an existing water source.

Special Status Plant and Animal Species. All special status species would be protected by measures to prevent unnecessary or undue degradation and measures identified through site specific NEPA analysis. No minerals activities, including casual use activities, may result in harm to T&E species or their habitat. Activities that would cause harm to T&E fisheries habitat include water withdrawal from rivers and their tributaries and excavation operations that result in increased siltation. Prior to surface disturbance proposed for locatable, leasable, and salable minerals, any areas with known or suspected T&E species would be surveyed. A plan of operations and site specific NEPA analysis would be required prior to exploration and development for locatable minerals on any lands or waters known to contain federally proposed or listed T&E species or their proposed or designated critical habitat. Site specific NEPA analysis would be required prior to surface disturbance for leasable and salable minerals. NEPA analysis would help determine site specific mitigation measures. The operator would take such action as may be needed to prevent adverse effects to T&E species and their habitat. Reclamation would include revegetation of disturbed areas.

Cultural and Paleontological Resources and Native American Traditional Practices. The area would be surveyed for cultural and paleontological resources prior to mining for locatable minerals, prior to any surface disturbance for leasable and salable minerals, or prior to any surface disturbance where cultural or paleontological resources or Native American

traditional practices sites are known to be present. Potentially affected tribes would be consulted regarding Native American traditional practices. Operators would be required to not knowingly disturb or destroy any scientifically important cultural or paleontological resources or areas of Native American traditional practices or any historical or archaeological site, structure, building or object on federal lands. If any were encountered, the operator would be required to immediately notify the authorized officer and leave the discovery intact until told to proceed by the authorized officer.

Visual Resources. VRM class objectives would affect mineral and energy development for both short- and long-term operations. Surface disturbing activities would not be allowed in VRM Class I areas (Wilderness, WSAs, WSRs) except where grandfathered. Minerals activities in VRM Class II areas would be subject to stringent mitigation measures or stipulations to reduce the effects to visual resources both during and after the development. Minerals activities in VRM Classes III and IV would also be subject to mitigation measures or stipulations, but they would vary from VRM Class II mitigation measures or stipulations in degree, manner, and duration. Examples include, but are not limited to, recontouring disturbed areas to match existing landforms, adding rock stains to freshly broken rock faces, painting above-ground structures to blend with the landscape, and screening operating areas.

Social and Economic Values. The social and economic demand for locatable, leasable, and salable minerals would be partially met by development of energy and mineral resources in the Planning Area.

Wild Horses and Burros. Reclamation would include revegetation of disturbed areas. Operators may be required to construct a fence around their operations or develop an alternate water source for use by wild horses and burros if the operations affect an existing water source.

Grazing Management. Operators may be required to construct a fence around their operations. Operators may be required to develop an alternate water source for use by cattle if the operations affect an existing water source.

Wildland Fire Management. The operator would comply with all applicable federal and state fire laws and regulations, and would take all reasonable measures to prevent and suppress fires in the area of operations.

Lands and Realty. Under the FLPMA, at Section 206, land exchanges may include the mineral estate if the values and objectives of the land that would leave federal ownership would not be greater than the values and objectives of the land that would be acquired. Under the FLPMA, at Section 209, land sales may include the mineral estate if there would be no known mineral values in the land, or nonmineral development would be more beneficial than mineral development subject to fair market value of the interests being conveyed. Recent land exchanges and sales in the Planning Area kept the mineral estate and surface estate united for ease in management of the land while maintaining compliance with the requirements of the FLPMA. It would be expected that future land exchanges and sales would also keep the mineral and surface estates united under one owner.

Transportation and Roads. The authorized officer may require the operator to use existing roads to minimize the number of access routes. Alternatively, construction of a new road may be required to avoid conflicts with other users. Seasonal road closures may be necessary due to road degradation under wet conditions or use of an area as big game winter range. Access roads would be planned for only the minimum width needed for operations and would follow natural contours, where practicable, to minimize cut and fill. For locatable minerals activities under a notice or plan of operations, the location of access routes would be specified. When commercial hauling is involved and the use of an existing road is required, the authorized officer may require the operator to make appropriate arrangements for use and maintenance of the existing road.

Areas of Critical Environmental Concern. A plan of operations and site specific NEPA analysis would be required prior to exploration and development for locatable minerals in an ACEC. The operator would implement such mitigating measures as determined by NEPA analysis.

4.13.3.2 Alternative A

Direct Effects

Twenty-eight percent of the Planning Area is available for designation as open or closed. Under this alternative all 28 percent would be open to locatable and leasable mineral exploration and development.

Two percent of the Planning Area that has high potential for hot springs gold and mercury would be open to mineral exploration and development. Less than 0.1 percent of the Planning Area that has high potential for other locatable minerals would be open.

Three hundred and thirty-two acres in the open area have high potential for leasable minerals, and they would be open to leasing with standard lease stipulations.

Twenty-eight percent of the Planning Area would be open to consideration for salable mineral materials development on a case-by-case basis. As determined by the BLM authorized officer, development may not be permitted where it conflicts with other resource values.

Indirect Effects

Special status species, visual resource concerns, cultural and historical sites, critical wildlife habitat, wetland/riparian habitat, water and fisheries issues, and other resource values generally constrain minerals activities. At a minimum, these resource values may require costly mitigation or relocation of a proposal and at a maximum may prohibit the project altogether.

4.13.3.3 Alternative B

Direct Effects

Under this alternative, the entire Planning Area would be closed to mineral exploration and development except where required by law or where essential to protect human safety, such as road construction under critical or emergency conditions.

Indirect Effects

There would be no indirect effects because the entire area would be withdrawn from locatable, leasable, and salable energy and mineral activities.

4.13.3.4 Alternative C

Direct Effects

Under this alternative, 13 percent of the Planning Area would be open to locatable and leasable mineral exploration and development which is a result of withdrawals under this alternative, the existing Congressional withdrawals, and the WSA IMP.

Less than 0.5 percent of the Planning Area that has high potential for locatable minerals would be open.

Forty-three acres in the Planning Area with high potential for leasable minerals would be open to leasing. They would be open with standard lease stipulations.

Thirteen percent of the Planning Area would be open to consideration for salable mineral materials removal on a case-by-case basis. As determined by the BLM authorized officer, development may not be permitted in the open area where it conflicts with other resource values.

The result of this alternative would be to discourage exploration and development of energy and mineral resources.

Indirect Effects

Indirect effects to minerals and energy would occur from resource values that at a minimum may require redesign or relocation of a proposal and at a maximum may prohibit the project altogether.

4.13.3.5 Proposed RMP

Direct Effects

Twenty-seven percent of the Planning Area would be open to locatable mineral exploration and development; 1.5 percent of the Planning Area that has high potential for hot springs gold and mercury would be open; and less than 0.1 percent that has high potential for other locatable minerals would be open.

Twenty-eight percent of the Planning Area would be open to leasable mineral exploration and development. Three hundred and thirty-two acres in the Planning Area with high potential for leasable minerals would be open, of which 281 acres would be open for leasing with seasonal or other special stipulations or both; 43 acres would be open to leasing with standard lease stipulations.

Twenty-seven percent of the Planning Area would be open to consideration for salable mineral materials removal on a case-by-case basis. As determined by the BLM authorized officer, development may not be permitted in the open area where it conflicts with other resource values.

Indirect Effects

Indirect effects to energy and minerals could occur from other resource values that at a minimum may require mitigation or relocation of a proposal and at a maximum may prohibit the project altogether.

4.1.3.6 Alternative E

Direct Effects

Minerals management would be conducted the same as under Alternative A; therefore, the effects would be the same.

Indirect Effects

Indirect effects to energy and minerals exploration and development could occur from other resource values. At a minimum, other resource values may require mitigation or relocation of a proposal, and at a maximum may prohibit the project altogether.

4.13.4 Summary of Effects

Alternatives A and E would close the least amount of public land to locatable, leasable, and salable mineral exploration and development and would therefore offer the greatest opportunity for these activities. Alternative B would close the entire Planning Area. The Proposed RMP and Alternative C would be intermediate in their overall effects to locatable, leasable, and salable mineral exploration and development with Alternative C more restrictive.

4.13.5 Cumulative Effects

Seventy-two percent of the Planning Area is withdrawn from mineral entry by Congressional action or subject to the WSA IMP, including the nonimpairment criteria. This has a large cumulative effect on mineral resource exploration and development because land with high locatable mineral potential is not available under all of the alternatives. On the 28 percent of the land that is available for locatable mineral exploration and development, only a small amount of exploration, mining, and occupancy has occurred in the past and only a small amount is expected to occur in the future under the Proposed RMP and Alternatives A, C, and E.

With every additional mining claim, notice, plan of operations, or occupancy, the cumulative effects to other resources of the area would increase. Locatable mineral exploration and development has the potential to affect almost all of the other resources. Compliance with relevant laws, regulations, and policy and local county rules and regulations would minimize cumulative effects on those resources.

Seventy-two percent of the Planning Area is withdrawn from leasable minerals by Congressional action or not available through the provisions of the WSA IMP. This has a large cumulative effect on mineral resource exploration and development because land with high leasable mineral potential is not available under all of the alternatives. On the 28

percent of the land available for leasable exploration and development, the potential for oil and gas resources and solid leasable minerals resources is low. Only 332 acres of available land have high potential for geothermal resources. In the past, interest has been only sporadic in oil and gas exploration, and no resource has been discovered. No serious interest in solid leasable minerals has occurred in over a century; now the high potential area is within the area closed to leasing by Congressional action. There has been interest in geothermal resources in the past and now almost all of the land in the Planning Area with high potential for geothermal resources is closed to leasing by Congressional action. Constraints placed on leasing and lease operations under the various Proposed RMP/FEIS management alternatives would discourage exploration and development; however, they would have little cumulative impact on development of oil and gas, solid leasable minerals, and geothermal resources because almost no acreage with high potential exists for those resources in the area available for leasing.

Leasable mineral exploration and development have the potential to affect almost all of the other resources. Compliance with relevant laws, regulations, and policy as well as local county rules and regulations would minimize cumulative effects on those resources.

Seventy-two percent of the Planning Area is not available for development of salable minerals sources due to Congressional action or the WSA IMP. The Steens Act of 2000 had a provision to allow development of certain identified salable mineral materials sources for road maintenance use. As a result, the Mineral Withdrawal Area designated in the Steens Act would not have a cumulative impact on salable minerals development for road maintenance until the existing sources are exhausted.

There would always be demand for salable minerals for use in road maintenance, and development generally conflicts with one or more resources. Salable mineral development has the potential to affect almost all of the other resources. Constraints placed on development of rock sources under the various alternatives would be subject to the judgement and final decision of the BLM authorized officer (Andrews Field Manager). As time goes by those decisions may be harder to make. It may be necessary at times to accept resource effects such as visual contrasts in a relatively pristine area because of the need to obtain rock from a salable mineral materials source. Compliance with relevant laws, regulations, and policy, as well as local county rules and regulations would minimize cumulative effects on those resources.

4.14 Wild Horses and Burros

4.14.1 Goal and Objectives

4.14.1.1 Goal – Manage and maintain healthy wild horse herds in established HMAs at AMLs to ensure a thriving natural ecological balance between wild horse populations, wildlife, livestock, vegetation resources, and other resource values.

Objective 1. Designate HMAs.

Objective 2. Designate/retain Herd Areas in inactive status.

Objective 3. Designate AMLs for each HMA and allocate year long forage for wild horses.

Objective 4. Manage wild horse numbers within established HMAs to ensure a thriving natural ecological balance.

Objective 5. Provide adequate year-round water sources to sustain wild horse herds.

Objective 6. Maintain herd viability and genetic diversity.

4.14.2 Assumptions

When removed from the herds, wild horses in excess of the minimum AML would be placed in the BLM's Wild Horse Adoption Program or other long-term care. Under Alternative E, increases in livestock grazing would not result in improper rangeland management.

Wild horses and their habitat would be monitored to determine the timing and implementation of gatherings, and to either support the existing AMLs or to refine and adjust AMLs as needed. This monitoring process should ensure the maintenance of a thriving ecological balance between wild horses and other resource objectives and uses. Monitoring would include the following: 1) general assessment of herd health and review of existing or new impairments to horse

access or travel within an HMA; 2)periodic horse counts to identify age and sex composition of herds; 3) identification of areas used by livestock and horses; 4) collecting climate data; 5) conducting vegetation utilization studies; and 6) determining vegetation condition and trend.

During periods of drought, options for providing adequate water (e.g., hauling), or other appropriate management actions would be implemented to ensure the long-term health and survival of the horses.

4.14.3 Analysis of Alternatives

4.14.3.1 Effects Common to All Alternatives

Direct Effects

Viable herds of wild horses and their herd characteristics would be maintained within the boundaries of all HMAs through the use of perimeter fences. Wild horses straying outside HMA boundaries would be removed or returned to the HMA, thereby confining effects from wild horses to the HMAs. Gates in interior pasture division fences would be managed and modified, if necessary, to maximize horse access to the HMA.

Indirect Effects

Rangelands. Few nonnative seedings occur within HMA boundaries. The effect of restoring native species such as sagebrush to nonnative seedings or the action of disking or brushbeating nonnative seedings would have little to no effect on the availability of forage for wild horses.

Noxious Weeds. Noxious weed prevention and control would continue to be a priority in all alternatives. Noxious weed invasion of native plant communities results in loss of forage availability, and degraded plant community structure, cover, composition, and diversity. The priority on noxious weed prevention and control would reduce these effects on wild horses.

Special Status Species. Management actions designed to protect special status species may limit opportunities to improve conditions for wild horses and may conflict with the needs of wild horses, especially if protective fencing would be used.

Visual Resources. Depending on the VRM class in the location of a proposed development or project, mitigation, redesign, and relocation of the project or development may be required. This could constrain any development or project. Each proposal would be analyzed on a case-by-case basis.

Energy and Minerals. There would be no effect on wild horses by locatable, leasable, and salable energy and mineral exploration and development in these areas that are closed by Congressional action or subject to the WSA IMP nonimpairment criteria under all the alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, the Steens Mountain Wilderness, and WSAs, which together cover 72 percent of the Planning Area.

Areas open to minerals activities could have effects on wild horses depending on the size, nature, and location of the minerals activities. They could affect wild horses through displacement from the immediate area and surroundings, interruption of normal movement patterns, and changes in normal areas of use. It is likely that only land with high mineral resource potential would be subject to mineral exploration. Further, it is likely that only a portion of that area with high mineral potential could be economically mined and would therefore be proposed for development. In leasing activities, there would be no surface disturbance and no effect on wild horses under NSO leasing stipulations, and reduced impact on wild horses under seasonal or other special leasing stipulations. Mitigation measures may include revegetation of disturbed areas or developing an alternate water source for use by wild horses if the minerals activities would affect an existing water source.

Grazing Management. Whenever existing grazing management practices on public land would be determined to be contributing to nonattainment of resource objectives, appropriate actions would be implemented that would achieve habitat and other resource objectives. In areas where grazing would be determined to be contributing to nonachievement of S&Gs, changes in management could be implemented that would result in increased plant density and cover that could increase available forage for wild horses.

Wildland Fire Management. Areas burned by wildland or prescribed fire would be rested from livestock grazing for a minimum of two growing seasons, with grazing resumed only when monitoring data support achievement of objectives. This practice would allow vegetation to increase in density and vigor and could potentially increase forage availability. Increased vegetation could provide potential increases in suitable forage for wild horses.

Wilderness. Any actions undertaken in wilderness (such as the use of motorized or mechanical transport and equipment for horse gathers) would be subject to compliance with the Wilderness Act and BLM regulations, directives, and policy for the management of wilderness areas. Each project would be analyzed on a case-by-case basis.

Wilderness Study Areas. Actions in WSAs would be limited to those that would be in compliance with the WSA IMP. This could constrain any proposed project in a WSA. Each project would be analyzed on a case-by-case basis.

4.14.3.2 Alternative A

Direct Effects

The acreage of the existing HMAs would remain the same. The Steens Act legislated land exchanges between private and public lands. Retaining the current HMA boundaries would result in two HMAs, (Kiger and South Steens) encompassing more private property. That BLM goals and objectives for wild horses would be met by private land owners could not be assumed. Failure to adjust the HMA boundaries could result in difficulties meeting BLM goals and objectives for the Kiger and South Steens HMAs. The Alvord-Tule Springs HMA would not be combined with the Coyote Lake HMA. The two HMAs would continue to be managed separately by the Burns and Vale Districts, respectively.

The current AMLs would be retained for all HMAs. The AMLs would be based on the number of acres of BLM land and available forage in an HMA. The number of acres of public land in the Kiger and South Steens HMAs was reduced due to land exchanges. Private land owners could use available forage on these recently transferred lands for their livestock. Failure to consider adjustments of the AMLs in these two HMAs could result in resource damage such as excess forage utilization, which might then result in undesirable rangeland trends.

Forage needs of wild horses would be met under current management strategies. Alternative A does not provide any management actions to adjust current AMLs other than those stated in the herd management plans. However, as conditions vary in the future, events such as drought might require temporary adjustments in horse numbers in order to meet other resource objectives. If vegetation management objectives would not be met, permanent adjustments in AMLs might also be necessary.

As wild horses increase in number above AMLs with no corresponding reduction in livestock numbers, key areas can become overgrazed, with associated decline in forage production and availability. These effects would be compounded during periods of drought, resulting in decreased health of wild horses. If horses are not gathered when the upper limit of the AML is reached, horses consume more than the allocated forage, leading to the over use of key forage species in some areas and a decline in forage production and availability.

In order to maintain a thriving natural ecological balance within HMAs, wild horses would continue to be gathered every three to four years. Exceptions to current gathering practices include severe threats to the survival of wild horses or the health of rangeland resources. Under the current gathering schedule and AML, horses in the Riddle Mountain HMA have consumed more than the allocated forage during four out of nine years, suggesting that changes might be warranted.

Current public lands water sources would be maintained. Legal access to critical private water sources currently used by wild horses, other than those identified in existing herd management plans, would not be pursued. If horses were excluded from private water sources at some time in the future, herd health could decline, especially during droughts, and horses would probably need to be gathered more frequently.

Indirect Effects

Riparian and Wetlands. The meadows and wetlands associated with riparian areas provide forage for wild horses. Current management actions to maintain or improve riparian vegetation would provide stable or increased forage production and availability for horses to the extent that these measures maintain or improve meadow and wetland habitat. Existing grazing systems would be designed to maintain or improve the health of these sites, improving forage production and

availability. Exclosures on streams, springs, and riparian/wetland areas, while excluding wild horses from forage, may provide water for horses over a longer period of the year.

Roads within or affecting riparian areas would be maintained; additional roads in riparian areas would be developed in conformance with existing laws and regulations. The effects of roads on wild horses would continue, including temporary displacement due to vehicle noise and human disturbance, and in some places, loss of meadow habitat. Although roads could be designed to minimize the effects of habitat loss for wild horses, the development and management of roads would be based on all resource management objectives.

Woodlands. Woodlands may not provide a critical habitat component for wild horses although woodlands may be used by wild horses for protection and cover from severe weather events and human intrusions. The management actions associated with woodlands might temporarily displace any wild horses that were present, but horses could return after activity ceased. Suppression of all lightning- and human-caused fires would eliminate the short-term potential effects of fire, such as loss of forage (e.g., grass and forb understory). Management actions to reduce western juniper in quaking aspen and mountain mahogany would help to maintain and increase forage production for horses through subsequent growth of understory grasses and forbs. Management actions to remove younger western juniper trees from sagebrush habitats would also increase the availability of forage for wild horses through increased growth of grasses and forbs.

Rangelands. The ecological status of native plant communities would be maintained or improved. Plant density and coverage in these communities would be maintained or increased, allowing AMLs to be maintained.

Management actions that restore areas burned by wildland fire or prescribed fire could prevent conversion of the burned landscape into one dominated by cheatgrass. This would reduce future habitat loss and maintain or improve forage productivity and diversity for wild horses.

Noxious Weeds. The current integrated management of weeds would continue. Control on disturbed areas would be emphasized, as would inventories of new infestations. Limiting the spread of noxious weeds would help maintain forage species needed by wild horses.

Fish and Wildlife. In coordination with the USFWS, ODFW, and permittees, approximately 9,000 acres of deer winter range, which would be in unsatisfactory condition, would be reseeded with sagebrush and a mix of other native and nonnative species. To the extent that these actions would occur within HMAs, additional acreage of suitable forage for wild horses could be available.

Opportunities for the improvement/restoration of fish and wildlife habitat through vegetation manipulation, water developments, etc., would be identified and undertaken. Some improvements such as water development might provide additional resources for horses. However, if the improvements used exclusionary fencing, horses might be restricted from using the improvements.

Forage for wildlife would be allocated at management objective levels. Forage needs of wildlife would be met under current management strategies.

Energy and Minerals. See effects common to all. Twenty-eight percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on wild horses on that much area. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer, salable mineral development may not be permitted on a case-by-case basis where it conflicts with other resource values.

Grazing Management. Existing grazing management actions should ensure that livestock use would be balanced with forage production, assuring that horses would have adequate year long forage. Adequate forage would help maintain herd health and viability. Livestock grazing would be managed under a variety of systems on an allotment basis, and where necessary, take into account the year-round presence of wild horses.

Wildland Fire Management. All wildland fires would be suppressed. This would reduce short-term loss of forage and habitat associated with wildland fire. However, in some locations aggressive fire suppression could contribute to

long-term conditions that would allow larger, hotter fires to develop. Such fires would contribute to long-term changes in the vegetation community through a more frequent fire cycle and a consequent decrease in the value of forage plants due to increased presence of undesirable nonnative plant species.

Mechanical treatments or prescribed fire to reduce fuel loading in areas where the fire regime has been altered would reduce forage availability in the short term until vegetation recovered from the initial disturbance. Long-term effects of this practice would be reduced dominance of woody vegetation and release of desirable plants. Plant diversity and productivity of herbaceous species would be maintained or increased. An increase in herbaceous vegetation would increase forage availability for horses. Reductions in fuel loading would also decrease the likelihood of catastrophic fire, thereby reducing the potential loss of large areas of wild horse habitat.

Burned areas would be assessed for rehabilitation, which could be accomplished using a combination of mechanized and nonmechanized equipment. In areas where natural recovery would be limited, a mixture of native and desirable nonnative plant species would be used to rehabilitate burned areas. These actions would promote the development of viable plant communities that provide forage for horses, and would help to limit the spread of noxious weeds, which provide little forage value for horses.

Transportation and Roads. This alternative would maintain existing transportation and roads management while implementing the provisions of the Steens Act. The operation and maintenance of the existing roads would be unlikely to cause any additional displacement or disturbance to wild horses, assuming that they have already adapted to the presence and use of these roads.

Off-Highway Vehicles. OHV and mechanized vehicle use would continue to be managed in accordance with the existing open, limited, and closed OHV designations. OHV and mechanized vehicle use along specific routes would temporarily displace wild horses, but would be unlikely to result in long-term loss of habitat. Where OHV or mechanized vehicle use would be limited and overlaps with HMAs, no disturbance or displacement to wild horses would be expected.

Recreation. Some disturbance and displacement of wild horses would be expected from existing recreation use. To the extent that unlimited dispersed recreation increases and consistently overlaps with high horse use areas, horses could temporarily alter their use patterns or be permanently displaced.

4.14.3.3 Alternative B

Direct Effects

Combining the current 343,201 acre Alvord-Tule Springs HMA with the Coyote Lake HMA would result in the 588,420 acre newly named Alvord-Tule Springs-Coyote Lake HMA. The HMA would then be managed as one unit by the BLM's Vale District. The Kiger HMA would be reduced from its current 38,359 acres to 26,873 acres. The South Steens HMA would be reduced from its current 127,838 acres to 102,342 acres.

To maintain an administrative record of the historic location of horses in the Kiger HMA, a Kiger Herd Area would be created, depicting the loss of public lands resulting from the Steens land exchanges. An adjustment in the South Steens Herd Area would be necessary in response to changes in the HMA due to the loss of public land from the Steens land exchanges. The existing Herd Area would be increased to reflect the decreased size of the HMA.

The current AMLs and wild horse forage allocations would be retained in all HMAs. However, management actions would allow for consideration of permanent increases or decreases, thereby providing greater management flexibility in response to changing environmental conditions and modified HMA size. Allowing for permanent adjustments in AML would help to meet objectives for wild horses while maintaining healthy herds and a thriving ecological balance as well as meeting the objectives for other resources. The effects of any adjustments in AML on gathering frequency would be analyzed on a case-by-case basis.

The decreased size of the Kiger and South Steens HMAs would warrant consideration of downward adjustments in the AMLs and forage allocations. Failure to do so could result in over use of key forage plants in some areas of an HMA, a decline in range condition, poor horse health, and consequently, more frequent gathering. However, any adjustments in AML would need to take into account historic and current use patterns of horses within these HMAs. Any adjustments in the AMLs and forage allocations for the Alvord-Tule Springs-Coyote Lake HMA would need to be coordinated with the BLM's Vale District.

The addition of herd health as one of the measures to consider before initiating herd gathering would provide greater management flexibility than actions provided by alternative A. Besides gathering, other approved methods of population control would be allowed. If these additional methods would be effective, the 20 percent average annual increase in herd numbers would possibly decline, thereby increasing the current time interval of three to four years between gathers, and reducing stress to horses caused by gathering. The assumption would be that these additional methods would be implemented during gathers, which would minimize stress directly attributable to the other methods of population control.

The management action to "normally" reduce herd numbers to the low end of the AML would provide more options for herd management than would occur under alternative A. This flexibility would be important as the effectiveness of additional methods of population control are implemented and evaluated. New methods might alter the need for reducing horse numbers to the low end of the AML as a standard practice.

Water would be more limiting than forage within HMAs. The management action to develop additional water sources could allow for better health of horses during periods of drought, as well as distributing horse use, thereby reducing the likelihood of overgrazing.

The management action to acquire legal access to critical private water sources used by wild horses would help to provide more stable water sources. If horses were excluded from these water sources at some time in the future, herd health could decline, especially during droughts.

Gathering excess horses would continue, but the time period between gatherings could potentially be increased. The option to modify the male/female sex ratio from 50:50 to 60:40 could increase the time between gatherings due to a slower annual population growth rate than the average of 20 percent. Allowing for the introduction of horses from outside the HMA could help to improve herd health by increasing genome diversity.

Indirect Effects

Riparian and Wetlands. The effects of management actions under this alternative would be the same as in Alternative A except that forage availability would increase in the AMU. Reliance on natural maintenance and recovery processes in riparian/wetland areas and adjacent upland areas could result in slower development of improved forage conditions. Upland vegetation communities adjacent to riparian areas would be managed to reduce fire frequency and intensity, with an emphasis on native vegetation. This would help maintain forage availability for horses.

Active restoration of upland and riparian communities would be limited to sites that would not attain advanced ecological status in 20 to 50 years. In the short term, the reliance on passive measures for other areas could reduce the availability of forage for wild horses and in some locations, could increase the risk of weed invasion.

Woodlands. Management actions associated with the maintenance, restoration, and improvement of quaking aspen and mountain mahogany stands would rely on natural processes and could take a long period of time to achieve goals. If natural processes result in an increase in western juniper, a decrease in the amount of understory forage suitable for wild horses could occur. Mechanical removal of younger western juniper trees from riparian and sagebrush habitats would result in an increase in understory forage suitable for wild horses.

Rangelands. Rangeland management would emphasize passive methods and natural processes to achieve goals and objectives. In some places, management emphasizing passive methods and natural processes could result in less suitable forage for wild horses due to invasive weeds and other undesirable species such as cheatgrass. Management actions would not include the rehabilitation of burned areas, which could result in decreased forage for wild horses due to undesirable nonnative species invasion. Providing for and restoring degraded and decadent shrublands would reduce the dominance of woody vegetation and release desirable plants, which could result in increased growth of grasses and forbs, providing forage for wild horses.

Noxious Weeds. The management actions would produce similar effects to those described in Alternative A. However, the potential for weed invasion might also be greater than in other alternatives because fewer methods of control would be authorized.

Fish and Wildlife. The management actions associated with the goals and objectives for fish and wildlife include using sagebrush in seed mixes to reseed 9,000 acres of deer winter range. Sagebrush does not provide forage for wild horses and to the degree that sagebrush replaces herbaceous species, forage availability for wild horses could decline.

Opportunities would be identified and undertaken for the improvement/restoration of fish and wildlife habitat through the use of wildland fire, fence removal, or other mainly passive methods. The effects of this action would be similar to Alternative A. Any removal of fences within designated HMAs would reduce impediments to movement and maximize the area available to wild horses.

Forage for wildlife would be allocated above management objective levels, and wildlife populations would be allowed to expand naturally.

Energy and Minerals. There would be no indirect effects on wild horses because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

Grazing Management. No livestock grazing would be authorized in the Planning Area. The elimination of livestock could lead to increased forage availability for wild horses. The AMLs for affected HMAs could be increased, with a thriving ecological balance still being maintained. The AMLs for herds in this area could potentially increase. Since permitted use would be discontinued in all allotments where permits would be relinquished, and to the extent this occurs within HMAs, increases in forage availability and in wild horse AMLs could occur.

Wildland Fire Management. Wildland fires that threaten property, human life or significant resource values would be suppressed. Other wildland fires would be evaluated and managed with minimal suppression actions. Suppression of wildland fires in areas with high resource value would preserve the habitat's availability for wild horses. However, over the long term, such activities could possibly contribute to the occurrence of larger, hotter fires, a loss of suitable habitat, increased fire cycle, and invasion of undesirable nonnative species.

All burned areas would be evaluated for rehabilitation actions. A mixture of native plant species would be used to rehabilitate burned areas where natural recovery would be limited. The lack of flexibility regarding choice of seed mix might extend the length of time for rehabilitation. An increased period of time to achieve restoration would represent a loss of forage for wild horses during that period of time. If a substantial portion of an HMA were burned, loss of forage could contribute to the need for emergency gathers.

Transportation and Roads. Only roads required by law would be constructed, and road maintenance would not occur. Road closures would be the most extensive under this alternative. Disturbance effects to wild horses from transportation and roads would be minimal under this alternative.

Off-Highway Vehicles. Areas designated as closed would be maximized. Disturbance from OHV and mechanized vehicle use would be minimized.

Recreation. Visitor use would be managed for dispersed recreation opportunities through closures, regulations, and minimal development. Some undeveloped recreation sites would be closed if natural processes are being jeopardized, which could improve suitable habitat conditions for wild horses. Wild horses are unlikely to be disturbed by recreational use unless use is concentrated in areas preferred by the horses.

4.14.3.4 Alternative C

Direct Effects

The direct effects of Alternative C would be the same as those described for Alternative B.

Indirect Effects

Riparian and Wetlands. Under this alternative both active and passive measures would be used to manage livestock in riparian/wetland areas. Active measures could also be used to accelerate the progress of riparian/wetland areas to an advanced ecological status. The effects on wild horses would be that additional forage may be available but in order to protect natural values would probably not be allocated to wild horses.

Woodlands. Although the management actions for woodlands would be different under Alternative C than for Alternative A, the potential disturbance effects on wild horses would be the same. The effects of allowing naturally- and human-ignited wildland fire to reduce the influence of western juniper on sagebrush and riparian habitats would be the same as those described for Alternative B. Using prescribed fire as well as wildland fire to reduce the influence of western juniper on sagebrush and riparian plant communities would result in long-term increases in suitable forage for wild horses. The option of using prescribed fire would allow resource managers an additional method to achieve goals and could result in the development of suitable forage for wild horses sooner than would occur with wildland fire only.

Rangelands. Management actions would minimize the emphasis on commodity production of herbaceous and shrubby vegetation and would emphasize natural values associated with diverse composition and structure of native vegetation. If this action resulted in less suitable forage for livestock, increased competition between livestock and wild horses for native plant species could occur.

Areas dominated by cheatgrass or an overstory of sagebrush with a few herbaceous plants would be treated. These habitat types provide less forage for wild horses. Following treatment of these habitats, more forage would be available for use by wild horses.

The rehabilitation of plant communities dominated by undesirable invasive species or invasive juniper would increase forage availability for wild horses. Other management actions, including reduction of woody vegetation and management of big sagebrush habitat, would also increase forage availability. Reductions in fuel loading (i.e., reduction of woody vegetation) would decrease the likelihood of catastrophic fire, which would reduce the potential loss of large portions of wild horse habitat. Management actions would not include the rehabilitation of burned areas, which could reduce forage availability for wild horses in the short term.

Noxious Weeds. The management actions would produce similar effects to those described in Alternative A.

Fish and Wildlife. Throughout the Planning Area, as many acres as possible of low diversity native vegetation in deer winter range would be interseeded to establish native plant species. Other desirable nonnative plant species may be used on a limited basis. Livestock grazing could be used to suppress competition and allow sagebrush to become established. This could result in some increase in forage productivity for wild horses, but livestock use could reduce its availability to wild horses. Sagebrush does not provide forage for wild horses and to the degree that sagebrush replaces herbaceous species, forage availability for wild horses could decline.

Opportunities would be identified to improve/restore fish and wildlife habitat through wildland fire and other vegetation manipulations, limited fence removal, water developments, etc. The effects of this action would be similar to Alternative A. Any limited removal of fences within HMAs would reduce impediments, allowing for greater unrestricted movement of wild horses.

Forage for wildlife would be allocated above management objectives; wildlife populations would be allowed to expand naturally or through limited transplants. This might decrease the likelihood that wild horse AMLs could be increased.

Energy and Minerals. See effects common to all. Under this alternative, 13 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development with potential for effects on wild horses on that much area. Locatable minerals activity would be most likely on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 43 acres in the Planning Area that have high potential for leasable minerals that would be open; these acres would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 13 percent of the Planning Area that is open. As determined by the BLM authorized officer, salable mineral development may not be permitted on a case-by-case basis where it conflicts with other resource values.

Grazing Management. Nonconsumptive uses would be emphasized in the AMU while providing for minimal sustainable livestock grazing that meets allotment management objectives. This management action would increase the likelihood that wild horse AMLs could potentially be increased in the AMU. Grazing within the CMPA would be allowed consistent with the Steens Act, but nonconsumptive uses as well as natural resource objectives would be emphasized. The AMLs for herds in the CMPA could potentially be increased. Other management actions to meet natural resource objectives, including discontinued use in vacant allotments that have resource conflicts, could increase potential forage availability for wild horses to the extent that livestock use would be decreased.

Wildland Fire Management. Wildland fires that threaten property, human life, or significant resource values would be suppressed. To the extent that these areas coincide with areas used by wild horses, suitable forage and habitat would be maintained. However, it would also be possible that over the long term, such activities could contribute to the occurrence of larger, hotter fires, and a loss of suitable habitat, as well as increased fire cycle and weed invasion. Suppression of other wildland fires would be evaluated and managed with minimal suppression actions if they would be appropriate for resource benefits. All burned areas would be evaluated for rehabilitation actions. A mixture of native plant species would be used to rehabilitate burned areas where natural recovery would be limited. The effects of this management action would be similar to those described under Alternative B.

Transportation and Roads. Transportation systems would be managed to meet resource goals and objectives consistent with emphasizing the protection of natural values. To the extent that this results in road closures, seasonal closures, and other limitations, disturbance effects to wild horses would be minimized.

Off-Highway Vehicles. The effects of OHV designations on wild horses would be the same as described for Alternative B.

Recreation. Protection of natural values while providing for developed and dispersed types of recreation could reduce disturbance to wild horses. To the extent that recreational use would be directed away from preferred horse use areas, disturbance would be reduced. Some disturbance and displacement of wild horses would be expected from existing recreation. In some locations, concentrated recreation use could result in some loss of wild horse habitat but the amount lost would be relatively small. To the extent that dispersed recreation increases and consistently overlaps with high horse use areas, horses could temporarily alter their use patterns or be permanently displaced.

4.14.3.5 Proposed RMP

Direct Effects

The effect of boundary and acreage adjustments for Objective 1 would be the same as for Alternative B, with the following exception: the South Steens HMA would be reduced in acreage from its current 127,838 acres to 126,732 acres.

To maintain an administrative record of the historic location of horses in the Kiger HMA, a Kiger Herd Area would be created, depicting the loss of public lands resulting from the Steens land exchanges. An adjustment in the South Steens Herd Area would be necessary in response to changes in the HMA. The existing Herd Area would be increased to reflect the decreased size of the HMA resulting from the Steens land exchanges.

The effects of all other management actions would be the same as those described for Alternative B. However, the management emphasis on balanced uses and cooperative management practices means that wild horses would not be given preference over other uses for increasing forage allocations, and thus AMLs. Horses might need to be gathered more often in order to meet the objectives for other resources.

Indirect Effects

Riparian and Wetlands. Similar to Alternative C, management of existing grazing systems would be directed toward improvements to maintain PFC and promote an advanced ecological status. The rate of progress toward achieving an advanced ecological status for restoration of riparian and upland vegetation would be expected to increase because both active and passive measures would be used. In some locations this might require exclusionary fencing to keep horses out of these habitat types, resulting in a temporary loss of suitable habitat. The ecological status objectives would be dependent on meeting multiple resource objectives. In some locations, this could result in increased forage for wild horses, while in other areas restrictions due to compliance with the CWA, ESA, and Executive Orders might require temporary or permanent changes in areas used by wild horses.

Woodlands. The effects of management actions for woodlands on wild horses would be the same as those described under Alternative C.

Rangelands. Grazing systems and range improvements designed to improve ecological conditions would have similar effects as those described in Alternative A. Since the emphasis would be on balanced cooperative management practices, increased forage could be used by wild horses as well as livestock. The ecological status of native plant communities would be maintained or improved. Consistent with resource objectives, actions would be implemented that would

diversify the structure and composition of selected nonnative seedings. These actions would also maintain or improve available forage for wild horses.

The management actions of restoring plant communities that do not meet the DRC due to dominance by undesirable nonnative species, and using prescribed fire and wildland fire to create a mosaic of multiple successional stages, would reduce the dominance of woody vegetation, and release suppressed desirable plants. These actions could reduce forage availability in the short term, but in the long term they would increase the amount and diversity of suitable forage for wild horses.

Noxious Weeds. The management actions would produce effects similar to those described in Alternative A.

Fish and Wildlife. Throughout the Planning Area, most of the acres of native vegetation with low diversity in deer winter range would be interseeded to establish native plant species. Nonnative plant species could be used where appropriate. Livestock grazing would be used to suppress competition and allow sagebrush to become established. This would result in some increase in forage productivity for wild horses, but livestock use could reduce its availability to wild horses. Sagebrush does not provide forage for wild horses and to the degree that sagebrush replaces herbaceous species, forage availability for wild horses could decline.

The effects of improvements to or restoration of fish and wildlife habitat through wildland fire, other vegetation manipulations, water developments, etc., would be the same as those identified in Alternative A. However, fence removal would not be completed due to livestock grazing. The area available for horses would remain the same as under the current management situation.

Forage for wildlife would be allocated above management objective levels and wildlife populations would be allowed to expand naturally or through limited transplants. The effects of this management action would be the same as those described for Alternative A.

Energy and Minerals. See effects common to all. Twenty-seven percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on wild horses on that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative; 281of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer, salable mineral development may not be permitted on a case-by-case basis where it conflicts with other resource values.

Grazing Management. Nonconsumptive uses would not be emphasized in the development of grazing management prescriptions both in the AMU and the CMPA as in Alternatives B and C, but allotments would be managed to meet natural resource objectives.

Wildland Fire Management. Management actions and their effects on wild horses would be similar to Alternative C. However, a mixture of native and introduced species would be used to promote economic and natural resource values for the rehabilitation of burned areas and areas altered by fire suppression. This could allow greater options for resource managers, the possibility of more rapid rehabilitation of sites, and consequently more available forage for wild horses.

Transportation and Roads. The transportation management system would be managed to meet resource goals and objectives that strike a balance between cultural, economic, ecological, and social values in a manner that encourages cooperative management practices. In some locations this could result in continued or increased levels of disturbances to wild horses, while in other locations such effects could be reduced or eliminated. The potential effects would be analyzed on a site-by-site basis.

Off-Highway Vehicles. OHV and mechanized vehicle use would be managed in accordance with the Proposed RMP OHV designations. The BLM would seek cooperative agreements with OHV and mechanized vehicle clubs and other users. Potential effects to wild horses would be the same as described in Alternative C.

Recreation. Tourism and recreation opportunities would be allowed only if consistent with meeting other resource objectives, thereby minimizing any disturbances to wild horses. Development of new recreation sites would also be consistent with the protection of natural values, which would further reduce disturbances to wild horses.

4.14.3.6 Alternative E

Direct Effects

The effect of boundary and acreage adjustments for Objective 1 would be the same as those described for Alternative B, with the following exception: The South Steens HMA would be increased in acreage from its current 127,838 acres to 182,485 acres. This would affect wild horses by opening up more area for the same number of animals as the current AML that would increase the amount of available forage and water. Thriving ecological balance would be easier to maintain within the HMA. The area being returned to active HMA status would be located on the east side of the Steens This area is steep with many small drainages; consequently gathering horses from this area would be difficult and hazardous. Fences in this area would not keep horses in the HMA. Horses accessing private land and other grazing allotments would create unnecessary gathers that would stress horses. This situation would use funds that could otherwise be used to gather horses in other HMAs within the Planning Area would and postpone those gathers that may affect maintenance or thriving ecological balance in those HMAs.

The effects of all other management actions would be the same as those described for Alternative B. Since management emphasizes commodity production, differences in preference mean that any excess forage could be allocated to livestock and economically important wildlife rather than to wild horses. Vegetation treatments would benefit livestock and wildlife more than wild horses. Competition for available forage would be increased. Permanent adjustments in AMLs may be necessary, as more emphasis would be placed on forage use by livestock.

The effects of Objective 5 would be the same as those for Alternative B with the following exception. Management actions to acquire legal access to critical private water sources would not be conducted. Wild horses currently use these private water sources. Lack of guaranteed legal access to private water sources could make wild horses more susceptible to the effects of drought. If insufficient water would be available during droughts, horses might need to be gathered more often. If horses were excluded from private water sources at some time in the future, herd health and long-term viability could decline.

Indirect Effects

Riparian and Wetlands. Management of existing grazing systems would be directed toward providing maximum use while maintaining or progressing toward PFC. Active restoration of both upland and riparian communities would be pursued to provide sustainable livestock forage, soil stability, and aesthetics, and would not emphasize attainment of an advanced ecological status. Since the management actions would benefit livestock more than wild horses, competition for available forage would be increased and adjustments in wild horse AMLs might be required.

Management of roads in riparian areas would be similar to Alternative A, with emphasis on the development of additional roads to promote commodity production and public uses. Potential effects to wild horses due to disturbance, such as temporary displacement, would be more likely to occur under this alternative. If new roads were located in meadow habitat, loss of suitable forage for wild horses could occur.

Woodlands. The effects of management actions would be similar to those described for all other alternatives. The management action to develop markets for the byproducts of juniper removal could result in additional disturbances to wild horses in certain locations, and would be analyzed on a case-by-case basis.

Rangelands. Production of native herbaceous and shrubby vegetation for commodity uses within the constraints of other resource management objectives would be emphasized. Areas dominated by cheatgrass or an overstory of sagebrush with a few herbaceous plants would be rehabilitated with species providing optimal forage and vegetative cover. Following treatment of these habitats, more forage would be available, but competition from livestock or wildlife could limit its use by wild horses.

Plant communities dominated by undesirable invasive species or invasive juniper would be rehabilitated with species that would provide optimal forage and vegetative cover. This could increase forage availability for wild horses. Other management actions, including reduction of woody vegetation and management of big sagebrush habitat, would also

increase forage availability. Reductions in fuel loading (i.e., reduction of woody vegetation) would decrease the likelihood of catastrophic fire, which would reduce the potential loss of large portions of wild horse habitat.

Noxious Weeds. The management actions would produce effects similar to those described in Alternative A.

Fish and Wildlife. Throughout the Planning Area, some acres of native low diversity vegetation in deer winter range would be interseeded to establish native and other desirable nonnative plant species. Livestock grazing would be used to suppress competition and allow sagebrush to become established. Some increase in forage productivity and availability for wild horses would occur; however, livestock could reduce forage availability for wild horses. Sagebrush does not provide forage for wild horses and to the degree that sagebrush replaces herbaceous species, forage availability for wild horses could decline in the long term.

Opportunities would be identified and undertaken to improve/restore fish and wildlife habitat through wildland fire, other vegetation manipulations, limited fence removal, water developments, etc. These improvements would also benefit livestock. The effects of these actions would be similar to Alternative A; however, competition from livestock might limit the degree to which wild horses could use these improvements, especially if fences around improvements were to exclude horses.

Forage for wildlife would be allocated at management objective levels, but could be increased concurrent with improved range conditions and other improvements. This could result in forage being maintained or a decrease in available forage for wild horses.

Energy and Minerals. Minerals management would be conducted the same as under Alternative A; therefore, the indirect effects on wild horses would be the same as Alternative A.

Grazing Management. Livestock grazing opportunities would be maximized under this alternative. Depending on the location of increased use, some decline in forage availability for wild horses could occur. Competition between wild horses and livestock for available forage would increase. Since more emphasis would be placed on livestock use of forage, periodic adjustments including decreases in AMLs might be necessary. Although S&Gs would be used to guide management, this alternative does not provide for the emphasis on other resource objectives in allotment planning.

Wildland Fire Management. All wildland fires would be suppressed using appropriate management actions. The effects of these management actions would be the same as those described under Alternative A. Rehabilitation of all burned areas with a mixture of native and desirable nonnative plant species would be used to provide maximum economic production. This would provide suitable forage for wild horses. A plan to manage fires for resource and economic benefit would be developed. Although economic benefits would be prioritized under this alternative, other resources such as big game winter habitat would be likely to receive a similar high priority. Suitable habitat for wild horses would be protected to the degree that horses use the prioritized habitat types.

Transportation and Roads. Transportation and roads would be managed for the benefit of commodity production. Road closures would be the least extensive under this alternative, and maintenance requirements would be greater. New road development would be encouraged. Under this alternative, the operation and maintenance of roads would be more likely to cause disturbance effects to wild horses such as temporary displacement. The extent of the disturbance would vary depending on the proximity of new roads to habitat regularly used by horses.

Off-Highway Vehicles. Management actions would maximize OHV and mechanized vehicle use. The potential for disturbance to wild horses from OHV and mechanized vehicle use would be highest under this alternative.

Recreation. Increased recreation and tourism would result in greater disturbances to wild horses. To the extent that new recreational developments or increased dispersed recreation occurs in areas regularly used by horses, horses could be permanently displaced from important habitat.

4.14.4 Summary of Effects

Under Alternative A, the objectives would be met with viable populations of wild horses maintained in all HMAs. AMLs would remain unchanged in the HMAs. In some cases, conflicts with livestock production and special status species may occur.

Under Alternative B, AMLs could be maximized within the Planning Area due to reduced competition from livestock grazing. Viable healthy herds of horses would be maintained. Few conflicts with other resources would occur.

Under Alternative C, the objectives for wild horses would be met and viable populations of wild horses would be maintained. Conflicts could occur on a site specific basis. Herd health would be improved. The AMLs could be maintained or potentially increased.

Under the Proposed RMP, the objectives for wild horses would be met and viable populations of wild horses would be maintained. Conflicts could occur on a site specific basis. Herd health would be maintained or improved. The AMLs could be maintained or potentially increased or decreased, based on other resource objectives.

Under Alternative E, AMLs could be decreased because forage would be allocated to livestock before wild horses. Gathering of excess horses might occur more often in order to meet objectives for commodity production. Increased gathering would increase stress on the herds.

4.14.5 Cumulative Effects

It is expected that the number of wild horses would increase at an annual average rate of 20 percent in the Planning Area for the foreseeable future. Under the current MFP and the Wild Free-roaming Horses and Burros Act of 1971, as amended, the BLM is required to protect and manage wild horses in areas where they were found at the time this Act was passed, and in a manner designed to achieve and maintain a thriving ecological balance in keeping with the public land multiple use concept. BLM policy regulations direct that wild horses shall be managed as self-sustaining populations of healthy animals. Under all of the alternatives, the horses would be monitored and gathered periodically, which would minimize cumulative effects to wild horses. Increases in livestock numbers above those described in Alternative E could cumulatively affect wild horse numbers in the long term and might require a decrease in AMLs. Other cumulative effects of wild horses may include loss of habitat, vegetation and wildlife species. Riparian/wetlands habitat could also be at risk with increases of horse use or change in water distribution. Biological soil crusts and soil productivity could be cumulatively affected if wild horse range behavior changed with increased vehicle and recreational use. In addition, activities occurring on adjacent lands could have cumulative effects on wild horses. Adherence to the Wild Free-roaming Horses and Burros Act of 1971, as amended would minimize cumulative effects in the Planning Area.

4.15 Grazing Management

4.15.1 Goal and Objectives

4.15.1.1 Goal - Manage for a sustainable level of livestock grazing while maintaining healthy public land resources.

Objective 1. Provide for a sustained level of livestock grazing in the AMU and the CMPA, while meeting resource objectives and requirements for the S&Gs.

Objective 2. Implement administrative solutions and rangeland projects to provide proper management for livestock grazing while meeting resource objectives and requirements for the S&Gs.

4.15.2 Assumptions

This text assumes that, for all alternatives, the "existing conditions" before the application of the management in the Alternative would be with the No Livestock Grazing Area already implemented.

4.15.3 Analysis of Alternatives

4.15.3.1 Effects Common to All Alternatives

Direct Effects

There would be no effects common to all alternatives.

Indirect Effects

ACECs. Managing the existing and designating new ACECs would have no effect on grazing management. Areas that need to be excluded have already been fenced or would be topographically excluded. Dropping the designation on existing ACECs would not have any effect on grazing unless previously excluded areas were opened to grazing and available forage was increased.

Wild Horses. The AML for the three wild horse HMAs would not change throughout the range of alternatives, so wild horse management would have little or no effect on livestock grazing management.

Wilderness. Actions in the Steens Mountain Wilderness would be limited to those that would be in compliance with the Wilderness Act, the Steens Act and BLM regulations and directives regarding wilderness management. This could constrain any proposed project, development, change in type of livestock, or grazing system change in the Steens Mountain Wilderness in those portions of the Steens Mountain Wilderness left open to livestock grazing. Each project would be analyzed on a case-by-case basis.

Wilderness Study Areas. Actions in WSAs would be limited to those that would be in compliance with the WSA IMP. This could constrain any proposed project, development, change in type of livestock, or grazing system change in a WSA. Each project would be analyzed on a case-by-case basis.

Energy and Minerals. Locatable, leasable, and salable energy and mineral exploration and development would have no effect on grazing management in the following areas that are closed by Congressional action or subject to WSA IMP nonimpairment criteria under all the alternatives: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, the Steens Mountain Wilderness, and WSAs. Together these areas cover 72 percent of the Planning Area. Under all alternatives, open areas could have effects on grazing management including minerals related vehicle traffic on access roads during operations, reduction of land available for grazing until it is revegetated, and exclusion of grazing from areas of active operations. However, only land with high mineral resource potential is likely to be subject to mineral exploration. Further, it is likely that only a portion of areas having high mineral potential could be economically mined and, therefore proposed for development. In leasing activities there would be no surface disturbance and no effect on grazing under NSO leasing stipulations, and reduced effects on grazing under seasonal or other special leasing stipulations. In surface disturbing exploration and development activities, grazing would be affected, but could be protected by mitigation measures such as these: construction of fencing by the minerals operator around operations areas; coordination of operations with moving of cattle among pastures; reclamation of surface disturbance areas; and development of alternate water sources if mining operations affect existing water sources.

4.15.3.2 Alternative A

Direct Effects

The authorization of TNR grazing use during years of favorable growing conditions would provide additional forage for use by livestock.

Indirect Effects

Water Resources. Water resources would be managed to prevent degradation to water quality. Such management could exclude many areas of open water from livestock access, along with forage found in those areas.

Riparian and Wetlands. Management actions developed for riparian and wetlands would have no effect on current livestock grazing management in this alternative.

Woodlands. The reduction of western juniper in big sagebrush, quaking aspen, and mountain mahogany communities would stimulate the growth of herbaceous plant species and provide more forage for livestock. The quality of forage would also improve, having a direct effect on the health and weight gains of the livestock. Temporary exclosures, for post-treatment recovery of quaking aspen or mountain mahogany stands that have been invaded by juniper, would result in minimal reductions in available livestock forage.

Rangelands. The application of prescribed fire and mechanical removal of woody vegetation would reduce the dominance of woody species in those areas. Fire treatment areas would require two years of rest from grazing during

the growing season, which would result in a short-term loss of livestock forage. Herbaceous species would be released with the reduction in woody species, and available livestock forage would eventually increase. Interseeding of approximately 200 acres of big sagebrush in nonnative seedings may reduce the herbaceous component of the vegetation, but would not affect permitted use.

Noxious Weeds. Management actions for the control of noxious weeds would benefit the natural diversity of vegetation communities where noxious weeds have been introduced. By maintaining the natural diversity, livestock grazing would not be affected because the native forage species would still be present.

Fish and Wildlife. Reseeding approximately 9,000 acres of deer winter range with a mixture of sagebrush and other native and nonnative species would probably improve the amount of available livestock forage in the target areas. Other management actions for fish and wildlife would have little impact to livestock grazing.

Special Status Species. Management actions implemented such as interseeding of native species into crested wheatgrass seedings, to improve sage-grouse habitat could affect the amount of forage available for livestock depending on the success of the treatment. By increasing the amount of sagebrush for special status species habitat in nonnative seedings, livestock forage may be reduced. In native vegetation with low species diversity, restoration activities may improve vegetation species diversity and structure and increase forage available for livestock. If special status species habitat objectives are not being met in native habitats, then TNR would not be approved. Construction, location and design of new range improvements may be affected by the proximity and type of special status species habitat such as sage-grouse leks or nesting areas.

Visual Resources. Maintaining the existing VRM classes would have little or no effect on livestock grazing or implementation of new range improvements.

Energy and Minerals. See Effects Common to All Alternatives. Twenty-eight percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on grazing management on that much area. Locatable minerals activity would be most likely on the two percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative. Salable minerals activity could be proposed anywhere on the 28 percent of the Planning Area that is open under this alternative. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted.

Wildland Fire Management. The suppression of all wildland fires could affect the health of plant communities and the quantity and quality of forage available to livestock. Where wildland fire reduces woody species in the plant community, forage production would increase. Rest or deferment of grazing following fire and emergency rehabilitation would temporarily reduce available forage in localized areas.

Lands and Realty. The current trend of land acquisition and disposal shows that more acres would become private land and fewer acres would become public land. This trend would generally reduce the number of acres and available forage in grazing allotments and consequently decrease the amount of grazing revenue gained from public land.

4.15.3.3 Alternative B

Alternative B would discontinue grazing use in the Planning Area; therefore, Alternative B would preclude the achievement of Objective 1 as stated above.

4.15.3.4 Alternative C

Direct Effects

Alternative C would reduce grazing use in the CMPA and AMU to "minimal sustainable," a level lower than Alternative A, but still allowing livestock grazing operations to continue and be economically viable.

TNR grazing use would not be authorized. Forage quality could decline in nonnative seedings in areas where livestock utilization is measured at 40 percent or less. Grazing use would not exceed the amount of permitted use in any allotment within the Planning Area.

Indirect Effects

Water Resources. The management of all water sources toward advanced ecological status could affect how much use livestock would have on unprotected streams and springs in the CMPA. Livestock grazing could be reduced or eliminated in areas where natural water sources are not showing improvement, and where range improvements are not allowed or are not practical to construct.

Riparian and Wetlands. Active and passive management would be initiated in the entire Planning Area to promote further changes in the riparian and wetland areas toward PFC. The effects on grazing could be a reduction or removal of livestock in allotments that rely on riparian areas for stock water.

Woodlands. The effects of woodlands management would be similar to Alternative A, except that by allowing fires to burn in old growth juniper and aspen stands, more herbaceous vegetation could eventually be available for livestock forage.

Rangelands. By establishing more diversification in non native seedings, crested wheatgrass stands would be reduced. As a result, livestock forage could eventually be reduced, which may affect the permitted use. In the short term, grazing would benefit from diversification because grazing would be a major tool used to reduce the nonnative grass component. In native rangelands, the use of fire to create multiple successional stages would lower the shrub component in key areas and increase the amount of herbaceous livestock forage.

Noxious Weeds. Inventory for noxious weeds would increase and high priority areas would be treated. This would reduce the weed component in some native rangelands and could allow for increased livestock forage in the form of native or nonnative herbaceous plants.

Fish and Wildlife. The interseeding of primarily native plant species in areas with low diversity would reduce the amount of livestock forage and eventually reduce the amount of livestock use in the long term. In the short term, grazing would benefit from using livestock as a tool to suppress the nonnative herbaceous vegetation following seeding of native species. The efforts to restore fish and wildlife habitat and the potential increases in wildlife forage allocations could result in less permitted use and reduced livestock use in some areas. The use of fire as a tool to restore wildlife habitat would reduce livestock use in the short term, but potential forage increases in the long term could increase permitted use.

Special Status Species. Interseeding of native species into crested wheatgrass seedings, to improve sage-grouse habitat could affect the amount of forage available for livestock depending on the success of the treatment. Increasing the amount of sagebrush may reduce forage for livestock. Construction, location and design of new range improvements may be affected by the proximity and type of special status species habitat such as sage-grouse leks or nesting areas.

Visual Resources. Visual resources would be managed to protect natural values of public lands by designating more acres as VRM Class I, II, and III, with no VRM Class IV acres. Livestock grazing could be affected because only range improvements that could be designed to meet VRM Class I, II, and III objectives could be implemented.

Energy and Minerals. See Effects Common to All Alternatives. Under this alternative, 13 percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable energy and mineral exploration and development with potential for effects on grazing management on that much area. Locatable minerals activity would be most likely on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leaseable minerals activity would be most likely on the 43 acres in the Planning Area that have high potential for leasable minerals and that would be open. These acres would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 13 percent of the Planning Area that is open. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted.

Wildland Fire Management. The effects of management actions on livestock grazing would be similar to those described in Alternative A, except that using native plant species instead of a mixture of natives and desirable nonnatives in fire rehabilitation projects could provide less forage for livestock in the long term.

Lands and Realty. The management actions for acquisition and disposal of lands would not affect livestock grazing on public lands except on custodial allotments in Zones 2 and 3, where public lands could be open to exchange or purchase.

4.15.3.5 Proposed RMP

Direct Effects

The management actions under the Proposed RMP, relating to the application of livestock management practices, administrative solutions, and rangeland projects would provide more flexibility in the use of available grazing resources than under Alternatives A, B, and C, and would therefore be expected to increase the utilization of available grazing resources.

Water Resources. Perennial waters would be managed to attain water quality standards and satisfy other resource objectives using active and passive restoration efforts. Livestock management could change, or livestock could be permanently or temporarily removed from water sources that are currently below the water quality standards. If livestock grazing is removed from recovering water sources, permitted use could be reduced or moved to alternative forage.

Riparian and Wetlands. Riparian and adjacent upland areas would be managed to restore native or desirable nonnative vegetation. Potential effects to livestock grazing management could include changes in frequency, intensity, and season of use. Depending on the area and the severity of the damage to riparian areas, the effects to livestock grazing could also include a temporary or permanent removal of livestock from the recovering riparian or adjacent upland area.

Woodlands. The effects of western juniper management would be the same as Alternative C.

Rangelands. The emphasis to diversify nonnative seedings would be a major management action, with a proposed treatment area of approximately 10,000 acres. Desirable nonnative forage species would also be seeded, but the result would probably be a short-term reduction in livestock forage in the areas treated. Wildland fire, prescribed fire, and mechanical methods would be used to improve the ecological status of native vegetation communities, thereby increasing the herbaceous component and benefitting livestock grazing in the long term.

Noxious Weeds. The emphasis areas for noxious weed treatments would be high quality natural resource lands as well as roads, ROWs and recreation sites. The control methods available for noxious weed management would include manual control, biological control, and herbicide application. Grazing could benefit from management in areas where large infestations of noxious weeds are successfully controlled and perennial grasses are established.

Fish and Wildlife. Reseeding 10,000 acres of deer winter range with sagebrush and nonnative species may be beneficial or detrimental to livestock grazing, depending on how much herbaceous forage becomes established. Other management actions for fish and wildlife would have little effect to livestock grazing.

Special Status Species. Management actions implemented such as interseeding of native species into crested wheatgrass seedings, to improve sage-grouse habitat could affect the amount of forage available for livestock depending on the success of the treatment. By increasing the amount of sagebrush for special status species habitat in nonnative seedings, livestock forage may be reduced. In native vegetation with low species diversity, restoration activities may improve vegetation species diversity and structure and increase forage available for livestock. If special status species habitat objectives are not being met in native habitats, then TNR would not be approved. Construction, location and design of new range improvements may be affected by the proximity and type of special status species habitat such as sage-grouse leks or nesting areas.

Visual Resources. The VRM classes proposed in this alternative would be nearly the same as in Alternative A. The effects to livestock grazing and planned range improvements would be the same as Alternative A.

Energy and Minerals. See Effects Common to All Alternatives. Since twenty-seven percent of the Planning Area would be open to surface disturbance by locatable, leasable, and salable mineral exploration and development with potential for effects on grazing management on that much area. Locatable minerals activity would be most likely on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open under this alternative. Leasable minerals activity would be most likely on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open under this alternative; 281of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could be proposed anywhere on the 27 percent of the Planning Area that is open. As determined by the BLM authorized officer on a case-by-case basis, salable mineral development may not be permitted.

Wildland Fire Management. The effects of management actions would be the same as those in Alternative C.

Lands and Realty. The effects of management actions would be the same as those in Alternative C.

4.15.3.6 Alternative E

Direct Effects

This alternative would maximize the amount of livestock grazing on public land, creating more revenue from grazing fees and more income for grazing permittees. More range improvements would be constructed, creating more jobs for contractors.

Indirect Effects

Water Resources. The effect of management to improve water quality on grazing management would be the same as in Alternative A.

Riparian and Wetlands. Grazing would be implemented in riparian and wetland areas to maximize use, thereby allowing livestock to graze higher quality forage and access more water sources. Health and weight gain would improve unless the condition of the riparian and wetland areas decreases.

Woodlands. The effects of western juniper management on livestock grazing would be the same as Alternative C except that following the treatments, some of the areas would be seeded. This would provide additional quality forage available for livestock grazing.

Rangelands. Emphasis would be placed on the production of native herbaceous vegetation as well as restoring and establishing new nonnative seedings, which would increase available forage for livestock. About 5,000 acres of nonnative seedings would be reseeded with sagebrush and other native and desirable nonnative species, but this would have little or no effect on livestock grazing. Wildland fire, prescribed fire, and mechanical methods would be used to improve the ecological status of native vegetation communities. Grazing would initially be excluded from those areas temporarily, but eventually the results of those actions would increase the herbaceous component and benefit livestock grazing.

Noxious Weeds. The effects of noxious weed management would be the same as the Proposed RMP.

Fish and Wildlife. Reseeding approximately 5,000 acres of native vegetation and nonnative seeding in deer winter range with native and desirable nonnative species would benefit livestock grazing if the herbaceous component of the seed mix were greater than the sagebrush component. Allocations for wildlife would not increase, but allocations to livestock could increase if additional forage becomes available.

Special Status Species. Increasing the amount of sagebrush for special status species habitat in some nonnative seedings could reduce livestock forage. In native vegetation with low species diversity, restoration activities may improve vegetation species diversity and structure and increase forage available for livestock. Construction, location and design of new range improvements may be affected by the proximity and type of special status species habitat such as sage-grouse leks or nesting areas.

Visual Resources. A variety of range improvements that could or would affect existing visual resources would be allowed, depending on the VRM class. Moderate and major landscape modifications would be allowed in some areas.

Energy and Minerals. Minerals management would be conducted the same as under Alternative A; therefore, the indirect effects on grazing management would be the same as Alternative A.

Wildland Fire Management. The effects of management actions would be the same as those in Alternative C.

Lands and Realty. The management actions focus on retaining Zone 1 lands and disposing of Zone 2 and 3 lands that would increase public land in the high recreation areas, but probably reduce the acreage in grazing allotments in lower quality recreation areas. Areas available for livestock grazing in Zone 1 areas would benefit while areas in Zones 2 and 3 would not.

4.15.4 Summary of Effects

Implementation of management actions planned for juniper woodlands, rangelands, and noxious weed control in Alternative A would be beneficial to livestock grazing management primarily due to the expected increase in the amount and quality of livestock forage. The management actions for other resources would not affect livestock grazing management.

In Alternative B, livestock grazing would be totally removed from public lands within the Planning Area, which would reduce the grazing fees collected and the number of cattle sold each year by ranchers in Harney County.

Livestock grazing would be reduced in Alternative C and TNR grazing use would not be permitted. Actions to improve the ecology of the rangelands and woodlands would make more herbaceous forage available for livestock grazing. Seeding areas to improve deer winter ranges and managing noxious weed infestations would slightly improve forage for livestock in the Planning Area. Range improvements for the benefit of livestock grazing would be constructed only if they meet the VRM class objectives.

In the Proposed RMP, the emphasis on diversifying nonnative seedings could reduce the amount of available livestock forage. The use of fire to manage the ecology of native plant communities dominated by western juniper would be beneficial to livestock forage in the long term. The effects of VRM on the construction of range improvements would be the same as in the existing situation.

Livestock grazing would be maximized in Alternative E with additional revenues received from grazing fees, more income for permittees, and more jobs for contractors constructing range improvements. Livestock would have greater access to more palatable and nutritious forage, resulting in higher weight gains.

4.15.5 Cumulative Effects

In past history, overgrazing has led to increased soil erosion; damage to soils in terms of moisture storage, stability, and infiltration; impaired function of riparian areas; degradation of water quality; reduction of forage and cover for wildlife and wild horses; and reduction of the health and diversity of plant communities. In an effort to prevent overgrazing, sustainable levels of livestock grazing in the AMU and the CMPA and quantitative thresholds for rangeland health indicators have been established in the existing land use plan, the Steens Act, the S&Gs, and applicable activity plans. Grazing levels and management practices would be maintained consistent with the goals and objectives set forth in those documents under all alternatives.

Within the Planning Area there are 33 improve "I" category allotments. Trend studies have shown improvement in ecological status and riparian resource values. Interim and long-term grazing management and stocking levels would continue to be adjusted in accordance with results of monitoring studies, allotment evaluations, and rangeland health assessments. Evaluation of monitoring data or rangeland health assessments may identify a specific need for change in the future in order to meet resource objectives and requirements for S&Gs where livestock grazing is predicted to limit achievement of the objectives.

Cumulative effects on grazing management are resource management actions that would cause increases or decreases in the utilization of available grazing resources. Specifically, they are actions which would affect the amount and quality of forage that is available to livestock over time either directly or indirectly. Cumulative effects on grazing management would result from authorization of TNR grazing during years of favorable growing conditions, changes to forage availability from manipulation of plant communities (i.e., reseeding, mechanical methods, prescribed fire), noxious weed control, fire suppression, protection of riparian communities and special status species, and protection of water resources. The management emphasis specific to each alternative (as summarized above) would determine the type and degree of cumulative effects on grazing management.

4.16 Wildland Fire Management

4.16.1 Goals and Objectives

4.16.1.1 Goal 1 - Provide an appropriate management response to all wildland fires emphasizing firefighter and public safety.

Objective 1. Implement appropriate fire suppression actions in the WUI or areas identified to possess significant values.

Objective 2. Implement the appropriate management actions upon discovery of wildland fires in areas outside of the designated WUI or areas that possess significant values.

4.16.1.2 Goal 2 - Restore and maintain the integrity of ecosystems consistent with appropriate fire regimes and land uses.

Objective 1. Implement management actions across the Planning Area that maintain or return plant communities to the historic fire regime where changes to the biophysical environment have not been significant enough to limit the return. Find an appropriate fire regime based on current conditions in areas where the biophysical environment has been significantly changed and return to the historic fire regime would not be possible.

Objective 2. Assess burned areas for appropriate biological and physical rehabilitation activities.

4.16.1.3 Goal 3 - Identify areas that qualify for suitable fuels reduction treatments to protect urban interface, developments, and other resource values.

Objective. Develop a management strategy that specifically identifies the WUI, resource values, and developments throughout the Planning Area.

4.16.2 Assumptions

Areas with significant resource value would be those areas that contain unique or desirable attributes. These values may be related to biologic, physical, ecologic, or socially defined attributes. Under certain conditions, wildland fire may adversely affect these attributes. Suppression actions would be taken to protect or minimize the effects to these attributes from wildland fire.

The appropriate management response would utilize the most effective suppression actions while considering life safety, property protection, potential resource damage, and suppression costs.

4.16.3 Analysis of Alternatives

4.16.3.1 Effects Common to All Alternatives

Direct Effects

Under all alternatives, wildland fires that burn within or threaten the WUI or areas with significant resource values would be given the highest priority for suppression actions. These actions alone would permit fuels to continue to accumulate in these areas. To reduce the threat of wildland fires, these fuels would be treated. The primary goal of the fuels reduction treatments in these areas would be to reduce the threat of catastrophic wildland fires. In some instances this would require that the plant community be altered to a condition not consistent with the historic fire regime.

Indirect Effects

Water Resources. Implement BMPs to reasonably prevent degradation of water quality. Fire management activities would minimize the amount of surface disturbance on all suppression, stabilization, rehabilitation, and restoration activities. The use of aerial retardant detrimental to aquatic communities on streams, lakes, ponds and riparian systems would follow agency policy as outlined in the Interagency Standards for Fire and Fire Aviation Operations. Existing features would be used as fuel breaks where possible. Maintenance of water sources would provide usable water sources for firefighting activities, potentially reducing impacts on natural water sources.

Soils and Biological Soil Crusts. Implement BMPs on all potential soil surface disturbing activities. Surface disturbing activities would be minimized during suppression, stabilization, rehabilitation, and restoration activities. Natural features would be used, where possible, for fuel breaks in place of constructed fireline if human life safety would not be compromised.

Riparian and Wetlands. Movement toward PFC would help to reduce the current frequency of fire in these communities and help to provide natural fuel breaks facilitating other suppression actions. Restoration of these areas following burning would be less intensive if native communities exist.

Noxious Weeds. An integrated weed control program will help to maintain and reestablish native plant communities across the planning area. This will help to establish appropriate fire regimes. Firefighting activities may need to be modified in the context of the program. Ground disturbing firefighting activities will be avoided in areas where known populations of noxious weeds exist. If ground disturbing activity does occur in areas where noxious weeds occur, rehabilitation actions will include mitigation measures to reduce the threat of noxious weed spread. Emergency stabilization and rehabilitation activities will include monitoring and treatment of new patches of noxious weeds.

Fish and Wildlife. Maintenance, restoration or improvement to wildlife habitat will help move plant communities toward appropriate fire regimes. Animals utilizing Great Basin and Shrub-steppe habitats evolved with periodic fire. Modification of the habitat will include periodic burning. Once habitats are restored, there will be a greater emphasis on management of fire for resource benefits. Increasing the woody vegetation component in seedings will increase fireline intensity and flame length. A combination of indirect and direct attack tactics will be needed to be suppress fires in these locations. Prior to establishment of the shrubs, most fires would be directly attacked using engines and crews because of the shorter flame length and fireline intensity.

Wildlands Juniper Management Area. The WJMA was established to evaluate and demonstrate different treatment options in western juniper woodlands. Different methods of burning and cutting, as well as new technology, will be applied in somewhat controlled situations. Treatments will be monitored over time. Because of this investment, naturally ignited fires that occur within the WJMA boundary, or threaten that boundary will be suppressed. Significant investment in monitoring activity require that the area be protected.

Cultural Resources. Locate significant sites that may be in conflict with other resource uses. Clearances would be obtained prior to any ground disturbing activities related to fuels reduction, emergency stabilization and rehabilitation following wildland fire. Ground disturbing activities would be modified to minimize damage to identified cultural resources.

Visual Resources. Designation of the Steens Mountain Wilderness and the WSAs as VRM Class I would require more intensive planning to ensure that projects designed to restore and maintain the integrity of ecosystems would meet VRM Class I objectives. Methods used for fire control, stabilization, and rehabilitation would be modified in order to meet VRM Class I objectives for those areas.

Recreation. Emphasis on dispersed recreation may increase the risk to human life from wildland fires because of increased use outside of developed areas. More aggressive suppression actions may need to be taken in areas where there would be normally little to no risk to human life. The presence or absence of the public in remote areas must be determined early on in the decision making process. If there were threats to human life, suppression actions would be taken until the threats would be removed. Dispersed recreation may also increase the risk of human-caused fires.

Wilderness. The Wilderness act prohibits the use of motorized vehicles within the wilderness. Firefighting within the wilderness would rely on lower impact tactics such as crews, smokejumpers, helicopter repelers, and aerial resources. These resources would continue to be effective on smaller fires under favorable weather conditions. However, fires burning under unfavorable weather conditions (high temperatures, low relative humidity, high winds) would have the potential to quickly grow beyond the capabilities of these resources. These fires would have a high probability of threatening the wilderness boundary and adjacent private lands because of the fuel types and loadings. The presence or absence of visitors in remote areas of the wilderness must be determined early on in the decision making process. If there were threats to human life, suppression actions would be taken until the threats would be removed. Activities related to dispersed recreation in the wilderness may also increase the risk of human-caused fires.

Wilderness Study Areas. Actions in WSAs would be limited to those that would be in compliance with the WSA IMP. This could constrain any proposed project. Each project would be analyzed on a case-by-case basis.

4.16.3.2 Alternative A

Direct Effects

Suppression of all wildland fires would maximize short-term public safety, protection of private lands and areas with important resource values. Short-term firefighter safety would also be increased because initial attack would be given a priority in this alternative. Areas burned by wildland fire would be minimized due to the aggressive suppression of wildland fires. Long-term firefighter and public safety could be compromised because of the accumulation of fuels due to suppression. Continued suppression of all wildland fires would continue to allow accumulation of fuels throughout

the Andrews RA. Wildland fires that escape initial attack would have a greater potential to burn larger areas at high intensities causing severe alterations to plant and animal communities in and adjacent to the burned area.

Fuels treatments conducted under this alternative would treat only the highest priority areas where high threats exist to firefighter and public safety and private property. With fuels treatments, average fire size in the drier Wyoming big sagebrush plant communities would decrease from current levels. Fuels treatments may have little effect on the average fire size in the higher elevation plant communities because of the aggressive suppression action. However, prescribed fire activity in these plant communities would reintroduce fire into the system, and overall acreage burned would increase over current levels.

All areas burned by wildland fire would be evaluated for emergency stabilization and rehabilitation. Native and desirable introduced plant species would be utilized in fire rehabilitation. The decision to use native or desirable introduced species would be based on site specific characteristics and through the ID Team process. The overall goal of all fire rehabilitation seedings would be to protect the soil from erosion. Seeding would provide large and small grazing animals with additional forage until woody vegetation establishes and grows to the point where competition begins to suppress herbaceous plant growth. The time required for this to occur depends on inherent site conditions and post-fire management. In general, the time required for herbaceous plant dominance would be longer on drier sites.

Fire management under this alternative would have little direct effect on undesirable introduced plant species, especially cheatgrass. The emphasis on suppression would help to reduce the area burned in locations dominated by introduced annuals. However, the emphasis on suppression may lead to an increase in the amount of ground disturbed through suppression actions (e.g., dozer line, engine travel, fire camp, etc.). Equipment, whether local or from out of the area, may potentially transport undesirable plant seeds to these disturbed areas, increasing the risk of weed establishment in these disturbed areas.

Fuels reduction treatments would reduce the influence of woody vegetation on the associated herbaceous understory. Herbaceous plant cover and density would increase after fuels treatment (mechanical and prescribed burning or both). Increases in herbaceous plant cover and density would benefit large and small grazing animals. However, the converse could also occur. Animals that utilize the woody vegetation for part or all of their life cycle would utilize the existing habitat, or would be forced to move to adjacent areas where woody plants still occur. The length of time until woody plants begin to suppress the herbaceous plants would depend on site characteristics and post-fire or treatment management. Drier sites would take longer to attain woody plant dominance than wetter sites.

Indirect Effects

Air Quality. Cooperate with federal, state and local governments on smoke management issues related to prescribed fire. Local and state agencies would be informed on all prescribed fires. Total number of acres in the treatment areas and estimated volume of smoke would be included in the plan.

Water Resources. Maintenance and development of new water developments would provide additional water sources for firefighting activities across the Planning Area. Fire crews could utilize these developments in firefighting operations and help to keep fire size down. Additional water developments will also provide firefighting crews with a variety of sites to obtain water, possibly reducing bottlenecks at existing water developments sites.

Riparian and Wetland Vegetation. Maintenance of roads and development of additional roads would aid in suppression by providing fuel breaks for most low and moderate intensity fires. The roads would also allow travel of fire fighting equipment to fires.

Woodlands. Removal of western juniper established after 1870 in quaking aspen, mountain mahogany, mountain big sagebrush and old growth juniper woodlands would help to decrease the increasing fuel loads in these communities. Fire intensity and severity would be reduced by altering fuel structure. Lower growing herbaceous plants and shrubs will have shorter flame lengths and fireline intensity compared to the preexisting western juniper woodland. Cut areas would also function as fuel breaks, helping to reduce the size of wildland fires across the landscape. Increases in herbaceous, and ultimately woody, plants will change the fuel structure on cut and burned areas. The treatments will move the area toward the historic fire regime where herbaceous plant and sagebrush dominated plant communities burned on a 20 to 50 year return interval.

Rangelands. Maintaining or improving the ecological status of native plant communities would help to restore the historic fire regime and fire return interval. Brushbeating and disking in nonnative seedings would create fuel breaks in continuous vegetation. Fire size would be reduced and suppression actions potentially reduced. Treated areas would function as a fuel break for a few years while herbaceous plants dominate the plant community. The fuel breaks would reduce fireline intensity facilitating suppression actions.

Noxious Weeds. Fire management equipment, such as engines, dozers, pickups, etc., coming from off the District would be cleaned prior to deployment on fire incidents. Local fire equipment would be cleaned after operating in locations where large populations of noxious weeds have been identified.

Fish and Wildlife. Reseeding approximately 9,000 acres of deer winter range that would be in unsatisfactory condition with sagebrush and a mixture of native and nonnative species would help to reduce the fire frequency in areas dominated by cheatgrass or other nonnative annual plants. Rates of spread and ultimate fire size would be reduced as the perennial plants begin to dominate the reseeded areas.

Energy and Minerals. Exploration and development activities for locatable, leasable, and salable minerals, even as casual use activities, may increase the risk of human ignited fire. Vehicle traffic and machinery used for these purposes may ignite wildlands fires. Compliance of operators to applicable federal and state fire laws and regulations would help to prevent fires in the area of operations.

Wild Horses. Maintenance of water sources for wild horses will help to provide water sources for fire management activities. Travel time from wildland fire area to the water source would be reduced for engines and helicopters. Water sources may also provide a static water source for directly pumping for hose lays. Use of water sources in wilderness would be done after appropriated minimum decision criteria analysis has been completed.

Social and Economic Values. The emphasis on fire suppression increases the need for locally available contract firefighting resources, which would increase local economic stability by providing additional jobs and economic opportunities. The Burns Interagency Fire Zone responds to an average of 64 fire incidents a year in the Andrews RA. Multiple incident days would be common and require that contract resources be utilized.

Grazing Management Grazing by domestic livestock removes fine fuels that would be available to burn later in the season. Reduction in the fine fuels would reduce the potential for ignition and average fire size. However, this effect would be dependent on season, duration, and level of grazing use. Potential reductions may only be realized in areas where plants do not have the potential to regrow following defoliation due to limited soil moisture. Late season grazing (October, November) would also have little impact because fire the potential for wildland fire decreases dramatically in October and November.

Off-Highway Vehicles. Continued OHV and mechanized vehicle traffic would maintain the existing two-track roads, increasing their effectiveness in limiting the fire spread of low intensity fires. Fire suppression efforts may not require additional construction of firelines and the number of fires that go out without suppression action could increase. However, vehicular traffic is also a source of wildland fire ignition during the dry summer months. This threat is greatest on the two-track roads where vegetation occurs between the wheel tracks.

Wilderness. Continued suppression of wildland fires throughout the Planning Area would allow fire sensitive woody species to continue to dominate plant communities. The woody vegetation would increase fuel loading and the risk of large catastrophic wildland fires. Placing no restrictions on campfires could increase the risk of human-caused fires within the wilderness. Utilization of fire rings may help to reduce the threat of wildland fire.

4.16.3.3 Alternative B

Direct Effects

This alternative places the lowest priority on fire suppression throughout the Planning Area. Firefighter and public safety would still be the number one priority for suppression. Only fires that directly threaten firefighter or public safety, private property or areas of significant resource values would be suppressed. Other fires would be evaluated for resource benefits and managed accordingly. Fire rehabilitation actions could be greater because of the reduced suppression activity and potentially larger fire size. However, these actions would rely primarily on passive methods where possible. Reliance on native plant species would increase the cost of rehabilitation treatments, but broadcast seeding methods would be used, helping to keep costs down. The rate of recovery in areas where native seedings would be used may be longer

compared to desirable introduced perennial plants. This can be important in areas where native perennial seedlings may have to compete with undesirable, introduced annual plant species.

Identification of WUI would help fire managers prioritize suppression response during periods where multiple fires occur. Prioritization of suppression efforts would help assure that firefighting resources would be properly and effectively assigned to fires.

Development of a plan to manage wildland fires for resource benefits would also help to prioritize firefighting efforts. Partnerships and cooperative agreements with adjacent private and public land owners would be sought to more effectively manage wildland fires for resource benefits. Cooperation with neighbors would increase the likelihood of utilizing natural barriers and reduce the need for large scale suppression efforts if the fire threatens the management area boundary. Woody vegetation may increase at the expense of associated understory plants and modify the habitat of many wildlife species. As woody vegetation dominates the sites, understory species may be lost from the plant community or suppressed to the point that the plants could not recover following fire. The dominance of woody vegetation also would increase the intensity of the fire, making suppression difficult if action must be taken.

Indirect Effects

Water Resources. Natural reclamation of some water sources could decrease the overall water availability for firefighting operations.

Soils and Biological Soil Crusts. Allow natural processes to affect soil conditions in the Planning Area except where management would be necessary to arrest excessive soil movement on critical sites. Emergency stabilization following wildland fire would only occur on critical sites. Soil loss may occur following wildland fire in noncritical sites. Loss of soil from these sites would reduce the potential for rehabilitation in subsequent years.

Riparian and Wetlands. Management to reduce fire frequency would also help to create an appropriate fire regime consistent with wildland fire and riparian and wetland management. Reliance of passive methods of restoration may increase the amount of time necessary to attain desired plant community. In areas where the community has crossed an ecological threshold, the plant community will remain at current condition. This will maintain these areas in inappropriate fire regimes.

Allowing water sources not directly tied to a beneficial use to be naturally reclaimed would reduce the amount of water present for firefighting. Under some circumstances, fire size may increase due to increased travel time to available water sources. However, the management of these areas for native vegetation would provide green vegetation for an extended period in the summer. The longer period of time that green vegetation is present in the riparian areas may help to limit fire spread under low to moderate burning conditions.

Reduction in the number of roads could limit access to areas during wildland fires. The reduction in number of roads could also increase the necessity for mechanically built firelines or increase the size of fires. Roads would be effective barriers to fire movement under moderate to low fire intensities.

Woodlands. Allow natural processes to determine structure and composition of old growth western juniper woodlands, quaking aspen stands, mountain mahogany stands and mountain big sagebrush plant communities. Only fires that threaten human life and private property where no cooperative agreement exists would be suppressed. Younger western juniper would continue to establish and grow within these plant communities. As younger trees begin to occupy and grow in the interspace, the risk of larger wildland fire increases. Fire intensity and severity will increase as fuel loads increase. Firefighting efforts will be restricted to indirect attack tactics due the fire intensity. Fire size will probably increase and total number of acres needed to be stabilized and rehabilitated following fire will increase.

Prescribed fire would be utilized to reduce the influence of western juniper in quaking aspen, mountain big sagebrush, and riparian plant communities. Only stands with an understory component capable of carrying a fire would be treated with prescribed fire, or have wildland fires managed for resource benefits. Plant communities with a dense overstory of western juniper and a sparse understory would be maintained in a woodland until the site would be burned in a catastrophic wildland fire. Understory plants would most likely be killed if they were present under these wildland fire conditions. Treated areas will help with fire suppression actions. Changes in fuel structure and composition will reduce flame length and fireline intensity. More direct attack tactics can be employed in these treated compared to areas still

dominated by western juniper. In areas that remain in woodlands, rehabilitation efforts would be required to reintroduce species displaced by western juniper.

Rangelands. Allow natural processes to define the vegetation composition across the landscape. Only wildland fires that threaten human life and private property without cooperative agreements would be suppressed. Fuels would continue to accumulate within the rangelands plant communities until reduced by wildland fire. Average fire size would increase as fuels accumulate and vegetation becomes structurally homogeneous. As native species reestablish in nonnative seeding, the risk of fire would increase in these areas. Fire in nonnative seeding would be less frequent than in native rangeland communities. Increase in shrub density and cover would also increase the intensity of wildland fires and prescribed fires. Fire suppression actions would need to be adjusted to compensate for these conditions. Fire size may increase as more indirect attack tactics would be implemented. Rehabilitation following burning would be limited to areas where future fires may threaten human life and or private property.

Special Status Species. Allow natural processes determine habitat for special status plants and animals except for management of critical habitat as identified in a final rule or essential habitat in a recovery plan for federally listed species. Similar effects to rangelands and woodlands would occur. Vegetation would become more homogenous, increasing the risk of larger, more severe fires. Historic fire regimes may not be reestablished in areas where vegetation has crossed an ecologic threshold.

Wild Horses. Maintenance of water sources for wild horses would also help to provide water sources for fire management activities. Development of additional water source to help increase distribution of wild horses would provide additional water sources for fire management activities. Travel time from wildland fire area to the water source would be reduced for engines and helicopters. Water sources may also provide a static water source for directly pumping for hose lays. Use of water sources in wilderness would be done after appropriated minimum decision criteria analysis has been completed.

Grazing Management. Elimination of livestock grazing will increase the level of fine fuels present in the plant community. The potential for large fires would increase under this alternative. Flame lengths and fireline intensity would also increase with the increased fuel load. Indirect attack strategies would be used more frequently under these conditions, also increasing average fire size. This impact would be greatest during dry years where herbaceous vegetation growth is lower than average.

Off-Highway Vehicles. Reduced OHV and mechanized vehicle traffic would allow many of the existing two-track roads to revegetate, reducing their effectiveness in limiting the fire spread of low intensity fires. Closing many roads in the Planning Area would limit access under fire conditions. Initially the roads would be present, but as some revert back to natural conditions new routes may be inadvertently established during fire suppression efforts. Fire suppression efforts may also require additional construction of firelines and the number of fires that go out without suppression action could increase. Reductions in motor vehicle traffic may reduce the incidence of human-caused fires. This reduction may be balanced by an average increase in fire size.

Wilderness. All wildland fires that do not threaten human life, private property, or important resource values would be evaluated for resource benefits. Fires that were judged to improve or maintain wilderness characteristics would be managed for resource benefits. Fires that threaten private lands with wildland fire use agreements would be managed on a landscape basis.

4.16.3.4 Alternative C

Direct Effects

The direct effects of Alternative C would be the same as Alternative A in the WUI. Without mechanical fuels treatments or prescribed fire, fuels would continue to accumulate in the WUI. Fuels accumulation within this area would increase the risk to human life and private property. All fires within this zone would be suppressed with the appropriate management response. Designation of the WUI would occur in the same manner as in Alternative B. Direct effects of fire management activity outside of the WUI would be the same as alternative B. The emphasis would be to manage fires for resource benefits, but protect human life and private property.

Techniques used to stabilize and rehabilitate areas following wildland fire would be the same as Alternative A. However, only native plant species would be utilized in the rehabilitation efforts. The effects of using native species would be the

same as Alternative B with some possible exceptions. Mechanical seeding equipment may allow for better establishment and
survival of seeded species in some cases. Seed drills place the seed beneath the soil surface and can improve the soil-seed connection. Germination and growth following drilling may be better than by broadcast methods.

Indirect Effects

Air Quality. Implement prescribed fire and manage wildland fire while meeting federal and state air quality and opacity standards. Timing and methods of ignition may need to be adjusted to meet air quality and opacity standards. Other factors that would be considered were prescribed and wildland fire activity on adjacent units. The decision to manage a wildland fire for resource benefits would also consider current and future weather and potential for negative impacts to air quality. Total number of acres burned may decreased in some years due to postponing management ignitions because of air quality concerns.

Riparian and Wetland Vegetation. Similar to Alternative B, reclamation of some water sites would reduce water available for firefighting. Firefighters must travel longer distances to find water sources. This may allow fires to become larger. Reduction in the number of roads could limit access to areas during wildland fires. The reduction in number of roads could also increase the necessity for mechanically built fireline or increase the size of fires. Roads would be effective barriers to fire movement under moderate to low fire intensities.

Establishment of localized riparian tree and shrub source material would help to increase the success of stabilization and rehabilitation of riparian and wetland plant communities burned in wildland fire. Localized plant materials would be better adapted to site specific conditions and their chance of establishment and survival can be greater than other plant material acquired from off site. Manipulation of isolated individuals or stands of woody riparian trees/shrubs would occur to promote regeneration. Treatment of the isolated areas could help to develop a mosaic of multiple successional scales. Treated areas could also provide a fuel break. Overall fire size may be reduced because of the fuel break behavior of the riparian and wetland areas.

Woodlands. Mechanical cutting of western juniper from old growth, quaking aspen, mountain mahogany and riparian plant communities will help to reduce the potential for high intensity fire. The encroachment of western juniper in these stands has allowed fuel levels to accumulate to high levels. Fires that occur in these post-settlement stands will burn at a greater intensity than in sagebrush, quaking aspen or riparian plant communities. If fires burn into these communities, the altered fuel structure will help to reduce the fire intensity, facilitating suppression.

Rangelands. Maintaining or improving the ecological status of native plant communities would help to restore the historic fire regime and fire return interval. Brushbeating and disking in nonnative seedings would create fuel breaks in continuous vegetation. Fire size would be reduced and suppression actions potentially reduced. Fire behavior would also be better suited to more direct attack tactics. Prescribed fire to reduce the influence of woody vegetation and release suppressed understory plants would also help to create fuel breaks. This would be done by altering the structure and ultimately modifying fire behavior. Multiple successional stages would act further to restore historic fire regimes and frequencies. Interseeding of native plant species in nonnative seedings would reduce the risk of wildland fire in the short term. Use of domestic livestock to reduce competition for sagebrush establishment would further reduce the risk of wildland fire by suppressing the growth of fine fuels. However, in the longer term the risk of wildland fire may not increase, but the intensity and severity would be greater than in nonnative seedings. The greater fuel load attributed to woody sagebrush plants would increase, the flame lengths and fireline intensity. Strategically placed brushbeaten areas would help to reduce fires size and provide a break in the fuel continuity.

Rehabilitation of plant communities that do not meet the DRC would help to restore the appropriate or desirable fire regime to many areas dominated by introduced annual plants and western juniper.

Fish and Wildlife. Interseeding native vegetation into low diversity areas and areas dominated by nonnative species would reduce fuel loads in the short term. The physical process of seeding would suppress the fine fuels until establishment occurs. Utilizing domestic livestock to further reduce competition and facilitate big sagebrush establishment would also keep the levels of fine fuel low. Without the accumulations of fine fuels, the risk of fire would be low in these areas. Fires would have shorter flame lengths and lower fireline intensities making suppression less hazardous. However, once native vegetation establishes these plant communities would begin to accumulate fine and woody fuels. The accumulation would increase the flame lengths and fireline intensity in the long term. Areas where

native vegetation has reestablished and now dominates would have greater flame lengths and fireline intensities. Fire suppression actions would rely more on indirect attack ultimately increasing fire size.

Energy and Minerals. Exploration and development activities for locatable, leasable, and salable minerals, even as casual use activities, may increase the risk of human ignited fire. Vehicle traffic and machinery used for these purposes may ignite wildland fires. Compliance of operators to applicable federal and state fire laws and regulations would help to prevent fires in the area of operations.

Grazing Management. Same as Alternative A, with the following exceptions. The reduced level of grazing from current levels would provide for slightly more fine fuel in some allotments grazed later in the summer. Fires may be able to burn in this residual forage and sustain combustion. Fires that start in these areas will grow to larger size than if the forage was utilized at previous levels.

Wild Horses. Same as Alternative B.

Transportation and Roads. Closing roads would affect firefighting by reducing the access to some parts of the Planning Area. Firefighting resources would need to travel on foot, or construct/reopen roads to access areas to suppress fires. The reduction in roads also reduces the number of existing fuel breaks. These breaks would be most important when fires burn with light to moderate intensity. Roads provide a break in the fuel continuity. Fire size may increase and the number of fires that go out without suppression action may decrease with the reduction in roads. Additional firelines may also need to be constructed because of the loss of some of the roads. The Planning Area experiences a relatively small number of human-caused fires each year. However, closing the roads may also help to reduce the number of human-caused fires by limiting access and travel.

Off-Highway Vehicles. Reduced OHV and mechanized vehicle traffic would allow many of the existing two-track roads to revegetate, reducing their effectiveness in limiting the spread of low intensity fires. Closing the Rooster Comb, Fish Creek, and Cold Springs Roads would limit access to these areas under fire conditions. Initially these roads would be present, but as some revert back to natural conditions new routes may inadvertently established during fire suppression efforts. Fire suppression efforts may require additional construction of firelines and the number of fires that go out without suppression action could increase.

Wilderness. Same as Alternative B with the following exceptions. Use of fire blankets, fire pans and stoves would reduce the probability of human-caused wildland fires. Prescribed fire could occur in areas where past suppression actions have interfered with the natural ecological processes.

4.16.3.5 Proposed RMP

Direct Effects

The Proposed RMP would exhibit a combination of effects from Alternatives A, B, C, and E. Firefighter and public safety would be the highest priority in fire management decision making. However, fire would be reintroduced into the ecosystem through prescribed fire and wildland fire use for resource benefit (prescribed natural fire). Fires that do not pose a significant risk to firefighter safety, public safety, or private land would be evaluated for wildland fire use.

Areas burned by wildland fires would be evaluated for the need for rehabilitation. The greatest priority in the fire rehabilitation projects would be to protect the soil resources. To achieve this, a combination of native and desirable introduced plants would be used to stabilize the soil and return the plant community to a community dominated by perennial plants. Rehabilitation projects would occur on sites with low potential for natural recovery. Desirable introduced plant communities would be established following wildland fire in areas dominated by undesirable introduced plants (e.g., cheatgrass) or in areas where the potential for recovery of native plants, residual or seeded, would be low.

Cooperative projects would be developed with adjacent public and private land owners. These projects would increase the efficiency of fuels treatments and work to treat fuels on a landscape scale instead of by geopolitical boundaries.

Cost of fire suppression should be lowest in the Proposed RMP. The number of acres burned or converted to a herbaceous plant dominated community would be less than in Alternatives B and C, but more than in Alternative A.

Indirect Effects

Air Quality. Same as Alternative C.

Soils and Biological Soil Crusts. Same as Alternative A.

Riparian and Wetland Vegetation. Same as Alternative C with the following exceptions: desirable nonnative plant species may be used in areas where cheatgrass or other invasive annual and perennial plants have replaced native vegetation; the desirable nonnative vegetation would be a transitory stage; and once the desirable plants have established, native vegetation would be reintroduced to the area. Increasing the ecological status of these areas will assist firefighting efforts. Riparian areas often retain green vegetation longer into the summer dry season than the adjacent uplands. In the event of fire, these areas may act as fuel breaks and limit the spread of fire. However, some of these plant communities have seen a significant increase in introduced annual plants that increase the threats of fire. The annual plants complete their life cycle earlier in the summer than native perennial plants found in riparian areas. In these areas fire will move through the riparian area with similar intensity and severity. The abundance of introduced annuals prior to the fire increases the potential of their dominance in post-fire communities.

Woodlands. Same as Alternative C with the following exception. Markets for byproducts of western juniper cutting would be encouraged. Utilization of this resource would reduce the fuel loads on sites where western juniper was cut to restore mountain big sagebrush plant communities. Fireline intensities would be lower with the reduction in residual fuels. Firefighting actions would be safer and more direct attack strategies could be employed. Soil compaction could occur in areas where western juniper was removed by mechanized equipment.

Rangelands. Same as Alternatives A and C with the following exception. Desirable nonnative species could be used in the effort to reduce the influence of undesirable annual plant species. The establishment of nonnative perennial plants would help to reduce the occurrence of wildland fire. However, these areas would have a slightly different fire regime that areas dominated by native vegetation. The average time between fire events may be slightly longer in areas dominated by nonnatives species than those where native species dominate.

Interseeding of native species will help to restore appropriate fire regimes to these plant communities. Some of these areas are dominated by introduced annual plants. Fires have the potential to burn every three to five years in these areas. Establishment of native plants will help to break this fire cycle. Once the native plants establish and begin to dominate the community, these areas will be better suited to evaluation for wildland fires for resource benefits.

Special Status Species. Same as Alternative A.

Energy and Minerals. Exploration and development activities for locatable, leasable, and salable minerals, even as casual use activities, may increase the risk of human ignited fire. Vehicle traffic and machinery used for these purposes may ignite wildland fires. Compliance of operators to applicable federal and state fire laws and regulations would help to prevent fires in the area of operations.

Wild Horses. Same as Alternative B.

Grazing Management. Provide sustainable livestock grazing in the Planning Area that meets allotment management objectives, S&Gs, and the Steens Act in the CMPA. Fine fuels would be reduced in grazed allotments. The reduction in fine fuels would help to limit fire spread, especially in low to moderate intensity fires. In some situations grazed pastures may be used as fuel breaks during wildland fires. This would reduce the need for constructed fire control lines. However, the reduction in fine fuels would also help to alter the fire regime for these areas. The frequency of fire may be less than in areas where no grazing occurs. These effects would be most significant during dry years when forage/fuel accumulation is limited.

Transportation and Roads. Closing six miles of roads would have a minor affect on firefighting by reducing the amount of access to some parts of the Planning Area. The reduction in roads also reduces the number of existing fuel breaks. These breaks would be most important when fires burn with light to moderate severity. Roads provide an existing break in the fuel continuity. However, the reduction in roads could limit access by the public. This may act to reduce the potential for human caused fires.

Off-Highway Vehicles. Same as Alternative C.

Wilderness. Fire would be encouraged to play its natural role, except where life and property would be at risk. All lightning fires would be considered for wildland fire use. Wildland fires would be confined or contained within natural barriers unless additional measures would be necessary to protect life/property values. Prescribed fire would be allowed if needed to maintain the natural condition of a fire dependent ecosystem or to reintroduce fire where past strict wildland fire control measures have interfered with natural ecological processes.

4.16.3.6 Alternative E

Direct Effects

The effects of Alternative E would be similar to those under Alternatives A, except that a greater emphasis would be directed toward contract firefighting resources to support suppression actions and local economics.

Indirect Effects

Air Quality. Same as Alternative C.

Soils and Biological Soil Crusts. Same as Alternative A.

Riparian and Wetland Vegetation. Same as Alternative A with the following exceptions: existing roads would be maintained to promote commodity and public use within established laws and regulations; maintaining the roads would help firefighting resources access areas where fires occur; and suppression action would be quicker as roads may be used as firelines in some situations.

Woodlands. Same as the Proposed RMP.

Rangelands. Same as the Proposed RMP with the following exceptions. Less area will be interseeded with woody plants. Fire line intensity would be lower due to the dominance of herbaceous vegetation. Post-fire stabilization and rehabilitation efforts would concentrate on establishment of forage species, sustaining the dominance of herbaceous vegetation.

Noxious Weeds. Same as the Proposed RMP.

Fish and Wildlife. Same as the Proposed RMP.

Special Status Species. Same as Alternative A.

Energy and Minerals. Exploration and development activities for locatable, leasable, and salable minerals, even as casual use activities, may increase the risk of human-ignited fire. Vehicle traffic and machinery used for these purposes may ignite wildland fires. Compliance of operators to applicable federal and state fire laws and regulations would help to prevent fires in the area of operations.

Wild Horses. Same as Alternative B.

Grazing Management. The emphasis on grazing in this alternative would reduce the fine fuels throughout the Planning Area. Reduction in fine fuels would reduce the average size of fires throughout the Planning Area in the short term. Increased grazing pressure in drier plant communities may shift some plant communities toward dominance by introduced annual plants. Once this occurs grazing may be ineffective at modifying fuels. The frequency of fires in communities that have experienced a shift to annuals would increase. Fire size would ultimately increase, at the expense of native vegetation in the long term.

Transportation and Roads. Keep the entire Steens Mountain Loop Road open and retain motorized access along all other currently open routes. Vehicles would be allowed to travel 100 feet from the centerline along specific routes. Keeping the Steens Loop Road open would help to reduce response time to some fires located on Steens Mountain. Fire size may be reduced in situations where response time would be reduced. Allowing vehicular traffic 100 feet off the centerline of some routes would help to expand the fire control capabilities of these routes. Traffic would help to reduce vegetation and fire spread. However, the maintenance of the road network would allow for good access to many areas of the Planning Area. Increased vehicular access would increase the potential for human caused fires. This would increase the total number and total acres of fires over existing conditions. Areas dominated by introduced annual plants may pose

the greatest risk. Increasing the number of fires and acres burned would help to increase the number of acres dominated by introduced annual plants.

Off-Highway Vehicles. Same as Alternative A.

Wilderness. Same as Alternative A.

4.16.4 Summary of Effects

The protection of human life has the highest priority in all fire management activities. Until life safety can be assured, no other activities would be initiated. Within the WUI all fires would be suppressed to assure that life and private property would be protected. However, fuels treatment activities, such as mechanical thinning of western juniper or brushbeating of big sagebrush would help to reduce the threat of wildland fires in the WUI or areas adjacent to the WUI. Prescribed fire would be utilized in special situations within the WUI. Outside of the WUI, wildland fires would be evaluated for resource benefits once the safety of firefighters and the public would be assured. Past fire management actions have concentrated on suppression of all wildland fires. This coupled with other management actions has allowed fuels to accumulate throughout the Planning Area.

Alternative A would continue with current fire management actions. All unplanned ignitions would be suppressed, further increasing the fuel accumulation. Alternative B places the lowest priority on fire suppression throughout the Planning Area. Under this situation wildland fires would be managed for resource benefits. However, the threat of large fires would still be high because of the continued buildup of fuels. No mechanical treatments would be initiated to reduce fuel loading and prescribed fire could only be done in areas where there would be no threat to human life or private property. The Proposed RMP and Alternatives C and E all utilize a combination of mechanical, prescribed fire, wildland fire use, and fire suppression to achieve resource and fire management goals. The Proposed RMP and Alternative E would also encourage the development of local markets for the by products of the fuels treatment actions. Removing the cut plant material would help to further decrease the risk of wildland fire in the treated areas.

Outside of the WUI, all fires would be evaluated for resource benefits. In cases where the fire would be believed to be burning within the historic fire regime or meeting management objectives the fire would be managed to accomplish those goals. The Proposed RMP and Alternatives B, C, and E all have a wildland fire use component. Adjacent land owners would be consulted and coordinated with prior to implementation of a wildland fire use program. Agreements and partnerships would be sought to increase benefits and reduce the conflicts. Wildland fire use would reduce the number of acre needing fuels treatment. However, the number of acres treated each year would be difficult to predict. Wildland fires in the Andrews RA burn approximately 12,000 acres a year. Many of these fires burn during July and August when there would be a severe risk to human life because of hot dry weather and severe fire behavior.

Restoration or adjustment of fire regimes through management actions would be accomplished by modifying the present vegetation. Over the next 15 to 20 years at least 10,000 acres of western juniper woodlands (established after 1870) must be treated to restore and maintain a 50-year fire return interval. This fire return interval would be at the upper end of the historic range for the mountain big sagebrush and mountain shrub plant communities. Each alternative would be capable of achieving this goal. However, Alternatives B and C rely more heavily on passive methods, and climatic conditions would greatly affect the success of these alternatives.

All fires would be evaluated for stabilization and rehabilitation. Stabilization and rehabilitation actions would most likely occur on fires greater than 1,000 acres unless there would be a special resource or social value at risk. Excessive soil loss, weed invasion, or significant modification of T&E species habitat would be examples of situations where stabilization and rehabilitation actions may be initiated on fires smaller than 1,000 acres. Stabilization and rehabilitation actions would be similar in the Proposed RMP and Alternatives A and E. In these alternatives a combination of native and desirable introduced perennial plants would be used to stabilize and rehabilitate the site following fire. Alternatives B and C would utilize native species in the stabilization and rehabilitation process. Alternative B would use passive methods for rehabilitation. Seeding in Alternative B would be done from the air with no seedbed preparation. The Proposed RMP and Alternatives A and C may utilize drills, where appropriate to place seed in the ground.

4.16.5 Cumulative Effects

Identification of the WUI within the Planning Area would help to provide fire management with a way to initially prioritize fire suppression efforts. Designation of WUI would include a wide variety of locations. The WUI would

include isolated structures/improvements outside of the boundaries of established towns. The fire management staff would work cooperatively with BLM staff and private land owners to help designate these areas within the Planning Area. Continued suppression within the WUI would allow fuels to build in that area without treatment. The risk to human life and private property limits the ability to apply fire to these areas, making mechanical treatments necessary to reduce fuels in these areas. Alternatives where mechanized equipment would not be utilized would allow fuels to build in these areas, exacerbating the current fuels problem and increasing the risk of large catastrophic fires. Western juniper would also continue to increase its range, density, and cover within current stands if not treated. Western juniper has replaced or would be in the processes of replacing big sagebrush across approximately 350,000 acres of the Planning Area. Alteration of the sagebrush plant communities has had an effect on many plant and animal species that would be found in these plant communities. Continued expansion of western juniper would cause a further reduction in sagebrush plant communities and loss of habitat. There would also be an overall increase in the amount of bare ground or exposed mineral soil. This would increase the risk of soil movement. Loss of soil would reduce future site productivity and potential for the site to respond to management actions. Increases in erosion may also have impacts on adjacent stream systems and water quality.

Treatments over time would result in a mosaic of multiple successional stages across the landscape. As the number of acres and years since initial treatment increase, there should be an increase in the occurrence of wildland fire use in areas where threats to human life and private property would be low. This would indicate that the vegetation and subsequently the fire regime would be approaching the appropriate conditions. Post-fire stabilization and rehabilitation efforts should decrease as the vegetation approach this condition. However, there would still need to be some type of treatment in areas where threats to human life and private property continue where no cooperative agreements would be in place.

4.17 Lands and Realty

4.17.1 Goal and Objectives

4.17.1.1 Goal - Provide lands, interests in land, and authorizations for public and private uses while maintaining and improving resource values and public land administration.

Objective 1. Retain, consolidate acquire land or interest in land with high public resource values to promote effective administration and improve resource management. Make available for disposal public land meeting the disposal criteria contained in Section 203(a) of the FLPMA.

Objective 2. Meet public, private, and federal agency needs for realty related land use authorizations and land withdrawals including those authorizations necessary for wind, solar, biomass, and other forms of renewable energy development.

Objective 3. Acquire legal public or administrative access to public land.

Objective 4. Eliminate unauthorized use of public lands.

4.17.2 Assumptions

The Land and Realty Program would be a support function of other resource programs and external public demand. Consequently, effects to the program would be a direct result of the emphasis of other resource programs and external issues. Land tenure actions would be directed to a point ranging from fully developing commodities to preserving natural values as dictated by other resource programs.

Lands identified for disposal would be known as Disposal-Zone 3 lands. Any of the land identified as suitable for disposal could be transferred from federal ownership during the life of the plan. Disposal would usually be by sale or exchange, although other methods would be authorized. See Appendix J, Land Tenure Adjustment Criteria and Legal Requirements for additional details on land tenure adjustment.

All land tenure adjustment actions, realty use authorizations, and other lands activities would be contingent upon site specific review and inventory for resource values in accordance with the NEPA, the CEQ regulations and Departmental Manual 516, Chapter 2.

Proponents of land exchanges and other disposals commonly desire lands that would be suitable for commodity-producing activities such as conversion to seedings for livestock grazing, and development of rural residences and small

ranches. Thus, it would be assumed for purposes of analysis that land disposals would generally result in commodity production.

Any acquired land or acquired interest in land would be managed for the purposes for which it was acquired, or in the same manner as adjacent or comparable public land.

Conformance with the land use plan would be only one factor to be considered in the decision to undertake a land tenure adjustment action. Although various lands would be identified through the land use plan for disposal or acquisition, many may never be considered for action due to resource issues, or other factors. Generally, it would not be the intent of the alternatives to portray new large scale initiatives to acquire or dispose of all lands within a given zone, unless otherwise stated in the alternative. Rather, the alternatives describe different options and opportunities to direct and prioritize the use of lands actions.

The Land Tenure Zones are applicable to the surface estate, as well as the mineral estate or other partial interests of the United States.

Section 503 of the FLPMA provides for the designation of ROW corridors and encourages use of ROWs in common to minimize environmental effects and the proliferation of separate ROWs. BLM policy, as described in BLM Manual 2801, would be to encourage prospective applicants to locate their proposals within corridors. However, when ROW proposals would be in conflict with special management designations such as WSAs and ACECs, these areas should be avoided.

ROWs and other land uses including those necessary for renewable energy development would be recognized as valid uses of the public lands and would be authorized pursuant to Sections 302 and 501 of the FLPMA.

Applications for ROWs, realty and renewable energy use authorizations would be processed in a timely manner, on a case-by-case basis, in compliance with the NEPA process. In accordance with current policy, authorizations may not be issued for any use that would involve disposal or long-term storage of materials that could contaminate the land (i.e., landfills, hazardous waste disposal sites, etc.).

Approval of major ROW development in the unoccupied portions of the PP&L corridor would require Congressional release of the WSAs from further consideration for wilderness and amendment of the land use plans in neighboring planning areas to allow for such development.

Valid existing rights undetermined at this time are considered unknown for the purposes of this Proposed RMP/FEIS and are not considered in the analysis of alternatives.

USDI policy in Departmental Manual 603.1.1 prescribes that all withdrawals of land be kept to a minimum and be available for other public purposes to the fullest extent possible, consistent with the purpose of the withdrawal.

Section 205 of the FLPMA authorizes the Secretary to acquire lands and interests in lands consistent with the mission of the department and with applicable departmental land use plans.

Action would be taken to resolve unauthorized lands and realty use as it is discovered; however, in some cases the trespasser could not be identified, or the trespass would be otherwise unsolvable. In such cases, the BLM would make every effort to abate the trespass and restore and stabilize the lands.

In all cases, a trespasser would be liable for the costs of resolving the unauthorized use, including fair market value for use of the land, administrative costs, and cleanup and restoration costs.

4.17.3 Analysis of Alternatives

4.17.3.1 Effects Common to All Alternatives

Direct Effects

There would be no effects common to alternatives.

Indirect Effects

Planning Area
Special area designations, special status species, cultural and historical sites, fish and wildlife habitat, wetland/riparian habitats, water and fisheries issues and other resource values generally constrain lands and realty activities by limiting the lands available for exchange or disposal in any zone; reducing the demand for the number and type of realty use authorizations and withdrawals; restricting the ability to construct or relocate roads for legal access; and eliminating options of authorization or conveyance of land to resolve a trespass. At a minimum, these resource values may require mitigation or reroute of an activity. At a maximum, they may prohibit the activity altogether.

Other resource management actions that would improve the quality and productivity of the public lands, particularly for commodity production, may have an indirect effect on land tenure because they may increase the market value of public lands. Commodity-producing activities such as mining, tourism, and other development also have an effect on the program by creating demand for realty use authorizations and legal access to public lands.

4.17.3.2 Alternative A

Direct Effects

Planning Area
Under this alternative, land tenure adjustment would be limited to land identified for sale or exchange in the existing Andrews/Drewsey Land Tenure Adjustment, Andrews MFP Amendment, and for a portion of the lands, the Three Rivers RMP. Lands in Zone 1 containing important public values would be protected from disposal, but there would be no flexibility in this zone to exchange or sell public lands; therefore, opportunity and ability would be limited for acquisition of lands with high public values and to resolve long-term inadvertent and unauthorized uses, survey errors or hiatuses. Land sales and exchanges would also be limited by lack of land identified for sale or exchange because many of these lands have been previously conveyed. Land sales and other disposals in Zone 3 would be considered only after the possibilities for exchange have been exhausted, further limiting disposal opportunity and expediency. Disposal of lands for community expansion or public purposes would need to be consistent with the appropriate land tenure zones.

Lands may be acquired in any zone on a case-by-case basis. This policy has the potential of wasting valuable acquisition funding and effort in areas containing little public land and resources, as there would be no focus or priority for acquisition.

Under this alternative, the historical trend of a net loss of tax exempt public lands in Harney County in favor of taxable private ownership (See Cumulative Impacts) would be expected to continue into the future. This trend would be expected to diminish somewhat as public lands would be disposed of over time; thus, fewer lands and opportunities would be available. The overall effect would be a slight net loss of public lands in the Planning Area over the life of the plan, though not as much as during the last 20 years, resulting in a corresponding increase in county tax revenues. Some of these conveyed public lands would be converted to alfalfa, crested wheatgrass, or other development that would not have occurred under public ownership. Conversion of lands to a higher commodity value should result in a higher assessed value on the land, further improving county tax revenues.

Overall, there would be opportunity for consolidation of both public and private lands through exchanges, sales, and acquisitions, although somewhat limited by the availability of disposal lands and the inflexibility of this alternative.

Most known special resource values would be included in the retention zone (Zone 1), and would therefore be protected from disposal actions. Special resource values included in an exchange or disposal zone (Zones 2 and 3) would be identified and considered during site specific review of land tenure proposals. In the case of exchanges, special resource values in these zones may be vulnerable to disposal, but would be weighed against the resource values to be gained in the exchange.

Alternative A continues the designation of corridors on approximately 339 miles of public land and provides limited designations of exclusion/avoidance areas. This includes all corridors identified in the Western Utility Group's Western Regional Corridor Study. There would be no immediate effects to the continued designation of public land for ROW corridors. Specific effects would be analyzed when new projects would be proposed. The long-term effects of corridor designation would be the centralizing of facilities, which would confine surface and visual disturbance, as well as other effects, to existing corridors and ROWs; however, this could make critical energy and communications facilities more vulnerable to destruction through terrorist activities or natural disasters.

Consideration of withdrawal actions, an airport lease at Fields, and other land use and ROW authorizations including those necessary for renewable energy development would be handled on a case-by-case basis and deferred to a site specific review and analysis upon receipt of definitive proposals.

Implementing Alternative A would continue the existing direction of dealing with access issues on a case-by-case basis as specific needs or opportunities arise, with emphasis on securing access for administrative purposes. Implementation of this alternative would promote access for BLM administered lands, but efforts to secure public access would be limited. Under this alternative, no prioritization or identification of access needs would be provided in existing planning documents. Therefore, little focus or direction would be provided to proactively acquire access.

Under Alternative A, unauthorized use would be dealt with on a case-by-case basis, consistent with existing land use plans. This alternative provides flexibility in most cases to terminate or authorize the use, except for conveyances of land, to resolve an unauthorized use. Conveyances would be limited by the land tenure provisions in existing planning documents.

Indirect Effects

Planning Area
Although exclusion/avoidance areas would be limited under this alternative, Congressional and administrative designations, special status species habitats, and other important values would generally be protected from development due to their inherent restrictions. The primary effect of limited exclusion/avoidance designations would be the inability of the plan to provide ROW, renewable energy, and other land use project planners with a clearinghouse designation for determining the location and severity of various designations and restrictions existing in the Planning Area. This may result in reengineering, rerouting, or mitigation of a project with possible effects to sensitive resources when relocation would not be possible. Since only minor areas would be designated avoidance and exclusion zones, this alternative provides the least known constraints on realty use authorizations.

4.17.3.3 Alternative B

Direct Effects

Planning Area
Under this alternative, all public lands would be retained in federal ownership with emphasis on acquiring lands with natural values. All lands would be protected from commodity-producing activities likely to occur if conveyed out of public ownership. There would be no exchanges, thereby limiting the opportunity and ability to acquire lands with natural values.

Since the entire Planning Area would be considered Zone 1, lands may be acquired by purchase or donation anywhere in the Planning Area on a case-by-case basis. With no zones to provide basic direction, special resource values would be the only factor focusing and prioritizing acquisition, under this alternative.

There would be a net gain of public lands in the Planning Area. Since all acquisition would be by purchase or donation with no disposal of public lands, there would be a net loss of county tax revenues from private land acquisition. An offsetting effect on tax revenues may result when fewer public lands would be available for disposal; more conversion and development of existing private lands may be expected, resulting in higher assessed values on those lands.

Overall, there would be some consolidation of public lands by fee purchases, but no such opportunity for private lands due to the prohibition on disposals and the inflexibility of this alternative.

Under this alternative, the protection of natural values places a prohibition on land disposal actions, commodity withdrawals, and realty use authorizations; therefore, the opportunity to abate an unauthorized use by these means or to provide lands for community expansion and public purposes would not be available.

Under this alternative, the entire Planning Area would be considered a ROW, realty, and renewable energy authorization exclusion area and no corridors would be designated. Implementation of this alternative would not meet management goal objectives. Only new authorizations that provide reasonable access to nonpublic lands would be allowed, primarily limited to small scale ROWs, mostly for existing roads and ways. The most likely effect of this alternative would be an

increase in unauthorized use and illegal activities because the public would be unable to utilize public lands through legal means. Without some level of control, these uses could potentially damage sensitive resource values.

Since the entire Planning Area would be withdrawn, except as noted above, there would be no effects from mining, energy and minerals, military activities, and other commodity production. The primary thrust of this alternative on access would be to control and limit public access for the protection of natural values. Road construction to provide legal access around private lands would not be authorized and existing roads that provide public access would be closed. Closed roads would be allowed to reclaim naturally, slowing restoration of the land affected by the road. However, if slow restoration results in unstable soils, erosion, weed infestations, and other resource degradation, limited reclamation and remediation would be undertaken. Scenic and conservation easements to protect natural values would also be authorized under this alternative where fee acquisition would not be possible.

Under this alternative, all unauthorized uses would be terminated and none would be authorized. No disposals would be made to accommodate any uses. Therefore, no flexibility would be provided for options to resolve situations. Facilities and structures would be removed, but restoration of lands would otherwise be by natural processes unless resource degradation necessitates active restoration. This may result in slow restoration of the lands with possible resource degradation in some areas. In most cases, however, natural values would be promoted by this alternative.

AMU
Disallowing leasing and reopening of the Fields airstrip may force aviators to land in unsafe, undeveloped areas, thereby causing new resource damage and creating safety hazards such as landings on public roads and highways. Without a legal airstrip, fewer aircraft may be in the area, thereby minimizing noise and other effects. Rejecting the lease proposal would also minimize any potential liabilities to the United States associated with operation and maintenance of the airstrip.

Indirect Effects

Under this alternative, protection of natural values such as special status species, wildlife habitat, and Congressional and administrative designations, places an outright prohibition on most types of ROW, realty, and renewable energy use authorizations and disposals.

4.17.3.4 Alternative C

Direct Effects

Planning Area
Under this alternative, the major emphasis of land tenure adjustments would be on the retention/acquisition of land with natural or cultural resource values while providing for limited disposal actions in some areas. All lands in Zone 1, 1A, and 1B would be retained in public ownership and would be protected from disposal, precluding commodity-producing activities. There would be no flexibility in these zones to exchange or sell public lands, thereby limiting the opportunity and ability to acquire lands with important natural values and to resolve long-term, inadvertent unauthorized uses, survey errors, or hiatuses, or to provide lands for community expansion and public purposes. Limited exceptions to this disposal prohibition would exist in Zone 1B where exchanges may be made that further the purposes and objectives of the Steens Act may be made. Exchange of lands in Zones 2 and 3 would also be allowable, providing some opportunity for exchanges. Sales and other disposals would be limited to Zone 3. Exchange of lands to resolve a trespass situation would be allowable in Zones 2 and 3, but the exchange must serve to acquire lands with important natural values. These disposal opportunities may result in loss of some lands with natural or public values.

Disposal of lands for community expansion or public purposes would be limited to Zones 2 and 3 because a disposal must be consistent with the appropriate land tenure zone.

Land acquisition would be focused at Zones 1, 1A, and 1B. Some exceptions to acquire lands containing natural values would be available in Zones 2 and 3, but must be accomplished by purchase or donation in these Zones. Exchanges to acquire lands in Zones 2 and 3 would be prohibited because exchanges have a generally higher level of processing cost, effort, and timeframes than do purchases or donations. Acquisition of less than fee interests would be further focused to Zones 1, 1A, and 1B by prohibition of less than fee acquisitions in Zones 2 and 3.

In this alternative, most known special resource values would be included in the retention zones (Zone 1, 1A and 1B). In addition, large blocks of public lands without special values were also zoned for retention (Zone 1). Thus, without

flexibility, Zones 1 and 1A provide absolute constraints on land disposal actions. Constraints on land exchanges by other resource values would be somewhat less in Zone 1B where flexibility to exchange lands would be provided by the Steens Act. All disposal actions would be subject to site specific inventory and screening for the existence of any special resource values that may have been unknown or overlooked at the time of the RMP development. These values would be considered in the final decision to dispose of the land. In the case of exchanges, special resource values may be vulnerable to disposal in some zones, but would be weighed against the resource values to be gained in the exchange.

There would be a slight net gain of public lands in the Planning Area with a corresponding loss in county tax revenues, since private lands and values acquired would exceed the values of public lands being disposed.

Overall, there would be some opportunity for consolidation of both public and private lands, although somewhat limited by the availability of disposal lands and inflexibility of this alternative.

A large portion of the Planning Area, 1,045,910 acres, would be considered a ROW, realty, and renewable authorization exclusion area where a large variety of land uses, no matter what the effects, would be prohibited. Generally, areas where the most demand exists for this type of authorization (i.e., areas of existing human influences and activity) would remain open or would be in avoidance areas where authorizations would be possible but would be heavily mitigated if alternative locations were not available.

Generally, the primary effect of this alternative would be to allow basic infrastructure and necessities such as residential roads and driveways, a rural airstrip, utility distribution service, filming, and short-term storage sites, while limiting large scale projects and activities outside of corridors such as major transmission lines, energy development, and military maneuvers would be limited.

Demand for realty use authorizations would decline under this alternative since commodity production such as mining, tourism, and other development.

The actions and effects of this alternative regarding legal access acquisition would be actively reclaim closed roads, thereby speeding recovery and stabilization of the land affected by road disturbances.

Where the exchange conforms with the land tenure provisions this alternative provides, a limited option to resolve agricultural or occupancy trespass by exchanging the affected lands for nonpublic lands with significant natural or cultural values. This option, in limited circumstances, could promote acquisition and protection of natural values. However, sensitive resource values could possibly be lost in such an exchange.

AMU
Under this alternative, corridor designations would be limited to those having existing major power transmission lines, primary county roads, and state and federal highways. Corridor designations on public land total 246 miles. The unoccupied PP&L corridor would not be designated. This would leave two alternative north-south corridors and a single east-west option through the Planning Area.

Under this alternative, major facilities and projects would be required to be sited within corridors. In some situations this may require costly route changes in adjacent planning areas to align a facility in line with the designated corridor in the Planning Area. These reroutes could also result in additional surface disturbance, effects to visual resources, and proliferation of separate ROWs.

If a valid application were received, the existing Fields airstrip would be leased and reopened for public use. This would provide aviators a safer, more centralized place to land and take off. It could also improve public safety and limit resource damage by reducing aircraft operations in undeveloped areas. Reopening and improving the airstrip could also result in increased aircraft traffic and related visitation to the area. It would have local effects such as increased noise, soil and vegetative disturbance, and possible fuel or pesticide spills from aircraft spraying operations. Since the airstrip would be in a retention zone, the airstrip and the effects of leasing would continue indefinitely but would also provide the lessee with some assurance of long-term tenure. It could also expose the United States to hazardous materials, and safety and other liabilities associated with long-term operation of such a facility on its lands.

Indirect Effects

Planning Area
Under this alternative, protection and promotion of natural values (e.g., special status species, wildlife habitat, visual resources and Congressional and administrative designations) limits many types of ROW, realty use, and renewable energy authorizations and disposals. Basic infrastructure and public needs could be accommodated while large scale realty development and land uses would be restricted.

4.17.3.5 Proposed RMP

Direct Effects

Planning Area
Under this alternative, the major emphasis of land tenure adjustments would be on the retention/acquisition of land with high public resource values while providing for balanced disposal options through sales, exchanges, and other types of disposal. Lands in Zone 1A would be protected from any form of disposal. There would be flexibility in Zone 1 to exchange public lands for a specific set of public resource values. In addition, exchanges that further the purpose and objectives specified in Section 102 of the Steens Act would be allowable in Zone 1B. More lands would be available for exchanges in Zones 2 and 3, providing additional opportunity for exchanges outside the CMPA. Sales and other disposals would be generally limited to Zone 3, but could be used in any zone except 1A to resolve long-term, inadvertent unauthorized use of public lands. This additional disposal capability may result in losses of some lands with natural or public values.

Lands for community expansion and public purposes would be available in Zones 2, 2A and 3. However, disposal of Zone 2A lands would only be available by exchange for specific private lands in Zone 1A and by R&PP disposals not exceeding ten acres per transaction. Restricting R&PP disposals in Zone 2A to ten acres per transaction will conserve limited public lands in this zone while still accommodating essential community facilities such as small schools, fire stations, and community halls.

Under this alternative, most known special resource values would be included in the retention zones (Zones 1, 1A, and 1B). The constraints of special resource values in Zone 1 and 1B would be relaxed by the flexibility included in this alternative. Only in Zone 1A would any form of land disposal be prohibited. Regardless of the zone, all disposal actions would be subject to site specific inventory and screening for the existence of any special resource values that may have been unknown or overlooked at the time of the RMP development. These values would be considered in the final decision to dispose of the land. In the case of exchanges, special resource values may be vulnerable to disposal in most zones, but would be weighed against the resource values to be gained in the exchange.

Acquisition effort and funding would be focused primarily at Zones 1, 1A, and 1B. Exceptions to acquire fee estate in lands containing specific public values would be available in Zone 2 but must be accomplished by exchange or donation. Acquisition of less than fee interests would be further focused to Zones 1A and 1B by prohibition of less than fee acquisitions in Zones 1, 2, and 3.

Generally, over the long term there would be no expected change in the ratio of public lands to private lands in the Planning Area due to a balanced variety of land tenure actions including both acquisitions and disposals. Due to additional public land disposals in neighboring planning areas, an overall net loss of public lands in Harney County would continue consistent with the historical trend. For this reason, county tax revenues would be expected to increase. Property tax revenues would be further promoted by disposal of public lands, some of which would be converted to commodity production such as seedings or alfalfa fields under private ownership, which should result in higher assessed values on those lands.

Overall, there would be balanced opportunity for consolidation of both public and private lands while protecting, acquiring, and promoting important public values.

A total of 919,817 acres would be designated a ROW and realty use authorization exclusion and avoidance area where realty or realty related land uses would be prohibited or restricted.

Approximately 20,367 acres would be proposed for new withdrawals under this alternative, protecting only key special management areas which were not already withdrawn.

Generally, the primary effect of this alternative would be that many ROWs, realty land uses, and renewable energy projects would be allowable and accepted in open areas while protecting sensitive resources and areas where they exist. Large scale projects and activities such as major transmission lines, energy development, and military maneuvers would be possible outside of corridors and avoidance and exclusion areas, but may be limited or restricted, depending upon location and nature of the proposal.

Designated avoidance/exclusion zones would be limited to key special areas under this alternative, which provides fewer constraints to realty land use activity. However, other restrictions in the management actions for this alternative exist and place additional constraints on the program. For example, key wildlife use periods such as sage-grouse strutting or big game wintering may place timing restrictions on realty uses.

Under this alternative, access, scenic, or conservation easements would be acquired where public demand and administrative need exists. If necessary to secure access, construction of roads around private lands would be an available option, but would be limited to areas where critical access needs have been identified. Emphasis for access acquisition would be to provide public or administrative access to public lands containing high public resource values. This alternative provides proactive direction and emphasizes use of land tenure actions to secure and maintain access.

The Proposed RMP provides a variety of options to resolve unauthorized use, with some limitations. This flexibility could result in effects to sensitive resource values. It may also have some potential to promote trespass when the trespasser knows that the use may be ultimately authorized. The higher costs of trespassing versus legal authorization may deter most trespassers, thereby limiting this potential.

AMU
This alternative is in keeping with BLM policy, which encourages proponents of large scale facilities to locate in a corridor when possible. Locating proposed facilities in a corridor may not be feasible due to incompatibility with existing facilities or resource values.

If a valid application would be received, the existing Fields airstrip would be leased and reopened for public use. This would provide aviators a safer, more centralized place to land and take off. It could also improve public safety and limit resource damage by reducing aircraft operations in undeveloped areas. Reopening and improving the airstrip could also result in increased aircraft traffic and related visitation to the area. It would have local effects such as increased noise, soil and vegetative disturbance, and possible fuel or pesticide spills from aircraft spraying operations. Since the lands would be identified for disposal by airport conveyance or exchange, the lessee could be assured of definitive tenure if the lands would be conveyed to him for that purpose. Also, since the lands would be identified for immediate disposal, the United States' liabilities associated with operation and maintenance of the airstrip would be minimized.

Effects to bighorn sheep from communications development would continue at Buckskin Mountain but would be minimized by a road closure to the site. This closure would allow traffic for administrative purposes including communications site users, grazing permittees, and government employees. Additional development of the site may result in additional effects to bighorn sheep. However, large scale development is not expected since the area is remote, with low demand for communications uses. Based upon the past history of the site, only one or two new uses may be expected during the life of the plan. This projection could be reduced by land based communications becoming obsolete in favor of new technologies such as satellite communications. Further, depending upon the proposed use, co-location of new communications uses in existing facilities may be possible, thereby reducing surface disturbance and frequency of visits to the site.

Indirect Effects

Planning Area
Under this alternative, protection and promotion of natural values (e.g., special status species, wildlife habitat, visual resources and Congressional and administrative designations) limits many types of ROWs, realty use, and renewable energy authorizations and disposals. Basic infrastructure and public needs could be accommodated. Large scale development and land uses may be possible outside of avoidance and exclusion areas.

4.17.3.6 Alternative E

Direct Effects

Planning Area
Under this alternative, the major emphasis of land tenure adjustment would be for commodity production and weighted toward disposals rather than acquisition of public or natural values. Retention of lands would be mandated only in Zone 1A, with maximum flexibility to exchange lands for commodity production being available in Zones 1, 1B, 2, and 3. Opportunity would be maximized for disposal by sale or other means in Zone 3. Lands for public purposes would be available in Zones 1, 2, and 3. Lands for community expansion would be available by exchange, sale, or other means consistent with the land tenure zones. These disposal opportunities may result in the potential for loss of some lands with natural or public values, or conflicts with existing uses and values.

Sales or other disposals to resolve any unauthorized agricultural or occupancy use could be made in any zone except in 1A, regardless of when or how the unauthorized use originated.

In this case, the land tenure zones established for this alternative take only key special designations (e.g., wilderness, WSAs, ACECs, and the CMPA) into consideration by including these designations in the retention zones (Zone 1, 1A, and 1B). Other special resource values would be considered for retention or disposal on a case-by-case basis. Only in Zone 1A would there be prohibitions placed on any form of land disposal. All disposal actions would be subject to site specific inventory and screening for the existence of any special resource values that may have been unknown or overlooked at the time of the RMP development. These values would be considered in the final decision to dispose of the land. In the case of exchanges, special resource values may be vulnerable to disposal in most zones, but would be weighed against the commodity-producing values to be gained in the exchange.

Acquisition opportunities would be focused only in Zones 1, 1A, and 1B and only by exchange. No purchases or donations would occur under this alternative. Likewise, no acquisition by exchange of Zone 2 or 3 lands would be authorized.

Although relative acreages in Zones 1, 1A, and 1B would generally remain constant, there would be the potential for an overall net loss of public lands in the Planning Area due to liberalized disposal possibilities. A corresponding increase in county tax revenues could occur. Further, tax revenues would be promoted by disposal of public lands, some of which would be converted to commodity production such as seedings or alfalfa fields under private ownership, which should result in higher assessed values on those lands.

Overall, there would be a high opportunity for land disposal, consolidation of private lands, and facilitating of commodity production. Lands containing public values could be lost and some areas of public lands could potentially be fragmented.

Designated ROW, realty use, and renewable energy exclusion/avoidance areas total 850,011 acres.

There would be no new protective withdrawals. Other withdrawal actions would be geared toward opening lands for commodity-producing activities.

Designated avoidance/exclusion zones would be limited to key special areas under this alternative, which provides fewer constraints to realty land use activity. Still, other restrictions in the management actions for this alternative exist and place additional constraints on the program.

Under this alternative, the emphasis for access acquisition would shift from providing access for administrative and public purposes to acquiring access to public lands high in commodity value. This would allow access for management, extraction, or use of commodity resources on all the public lands. Implementing this proposal would emphasize constructing new roads around private lands to facilitate commodity development, and would forego opportunities to access public land with high public resource values. No scenic or conservation easements would be authorized under this alternative.

Alternative E would promote commodity production by authorizing the use or disposal of the lands affected by all forms of trespass. This alternative has the potential to affect resource values and promote trespassing. Special resource values would not constrain the ability to authorize use or convey land to settle the trespass, since these remedies would be mandated under this alternative.

Generally, the primary effect of this alternative would be that most ROWs, realty land uses, and renewable energy development would be allowable and accepted, while only the most critical sensitive resources and areas would be protected and in some cases affected by this type of development. Large scale projects and activities such as major transmission lines, energy development, and military maneuvers would not only be possible, but encouraged outside of corridors and avoidance and exclusion areas.

AMU
Alternative E designates 354 miles of public lands as ROW corridors. Corridor designations would be maximized in this alternative to provide a variety of different route alternatives and would have an increased width to provide additional siting flexibility within the corridors. In this alternative, proponents for all large scale facilities would be encouraged to site their facilities in the corridor, similar to the Proposed RMP.

If a valid application were received, the existing Fields airstrip would be leased and reopened for public use. This would provide aviators a safer, more centralized place to land and take off. It could also improve public safety and limit resource damage by reducing aircraft operations in undeveloped areas. Reopening and improving the airstrip could also result in increased aircraft traffic and related visitation to the area. It would have local effects such and increased noise, soil and vegetative disturbance, and possible fuel or pesticide spills from aircraft spraying operations. Since the lands would be identified for disposal, the lessee could be assured of definitive tenure if the lands would be conveyed to him for that purpose through an Airport Conveyance or other disposal. Also, since the lands would be identified for immediate disposal, the United States' liabilities associated with operation and maintenance of the airstrip would be minimized.

Indirect Effects

Planning Area
Although disposal and realty use authorization opportunities and flexibility would be maximized in this alternative, special resource values could still constrain and prohibit lands and realty activities.

4.17.4 Summary of Effects

Land tenure management goals would be achieved under all alternatives except Alternative B where disposal objectives by exchange, sale, or other method would not be achieved. Land exchange opportunities would be greatest in the Proposed RMP and Alternative and E where a larger amount of land would be identified for exchange in Zones 2 and 3 and where the greatest flexibility to exchange Zone 1 lands exists. Land sale opportunities would also be greatest in the Proposed RMP and Alternative E. Although land sales and exchanges would be possible under Alternatives A and C, opportunities for these disposals would be severely diminished as compared to the Proposed RMP and Alternative E due to reduced acreage available for disposal and the inflexibility of these alternatives.

The opportunity for acquisition by any method would be greatest under the Proposed RMP where adequate lands would be available to exchange for lands with important public values. The Proposed RMP also provides direction and focus so that acquisition efforts would not be wasted in areas with low resource or public values. Although Alternative B may appear to provide excellent opportunities for acquisition, it may actually do so less than the other alternatives because the ability to utilize exchange as an acquisition method would be prohibited. Alternative B also lacks any acquisition priority or focus.

Alternative E has the greatest potential for loss of significant public resource values since disposals would be emphasized and acquisitions would be geared toward commodity production. Alternative B provides the least potential to lose resource values since no disposal would be authorized.

Alternative B would have the greatest adverse effect to the county tax revenues because all acquisition would be by purchase with no corresponding disposals to place exempt public lands on the tax rolls. The Proposed RMP and Alternatives A and E would have wide ranging effects, depending upon the types and amount of land tenure adjustment being undertaken.

Realty use authorization management goals would be achieved under all alternatives except Alternative B where public and private needs for realty use authorizations would not be met due to severe restrictions on this type of activity in the entire Planning Area. Alternatives A and E would be similar and provide the most opportunity and flexibility for authorization of ROW and realty land use activity. They also have the greatest potential for effects from land uses on

sensitive lands and resource values. Alternative C designates a major portion of the Planning Area as avoidance/exclusion zones with restrictions in other areas. This alternative provides the most constraints on realty use authorizations over all other alternatives except B, which prohibits outright most realty land use activity. Although Alternative C would be limited, critical public and private needs would generally be met. The Proposed RMP provides balance between public and private land uses and protection of resources.

Access acquisition management goals and objectives would be achieved under all alternatives, but with emphasis on different values. Alternative A would continue the present situation as it currently exists in the MFP with little emphasis on proactive access acquisition. Alternatives B and C provide emphasis and direction for the access acquisition program toward protection of natural values at the expense of public access and values. Road construction would not be an option to securing legal rights under these alternatives. The Proposed RMP would provide for acquiring access to areas containing high public resource values including sensitive resources and natural values, and includes specific direction in relation to road construction and land tenure activities as they relate to access. Alternative E emphasizes access for commodity-producing activities, but public access opportunities may be foregone.

The stated management objective of eliminating unauthorized use would be achieved under all alternatives. However, Alternative B would not meet the overall management goal to provide lands, interests in land, and use authorizations for public and private needs. The Proposed RMP and Alternatives A and E provide management flexibility to resolve sometimes difficult unauthorized use cases. Alternatives B and C have little, if any, such flexibility and would limit the ability to provide reasonable solutions to difficult situations. Alternatives A and E have the most potential to affect sensitive resource values but would provide the ability to maintain good working relationships and public perceptions, as well as reasonable solutions for trespass resolution.

4.17.5 Cumulative Effects

Based on the historical and current trend of the Burns District land tenure program (1980 to present), in the reasonably foreseeable future there would be less than one exchange transaction per year, three public land sale cases per year, and one land purchase every two years under the Proposed RMP and Alternatives A, C, and E. There would be even fewer transactions with the implementation of Alternative B. Most, if not all, of this land tenure activity for the District would be in Harney County, continuing the historic/current trend and effect on the county's tax base.

New ROWs granted in the next 20 years would affect about 1,000 acres since most county roads and state and federal highways, which make up more than half of the existing acreage affected by ROWs, have already been authorized by newer FLPMA grants. New, on-the-ground effects from ROW and realty use activities would be limited to about half of that number, or approximately 500 acres, in the next 20 years since many new grants would authorize existing uses or replace older grants.

Cumulative effects to Lands and Realty could result from management actions for special area designations, special status species, cultural and historical sites, fish and wildlife habitat, wetland/riparian habitats, water and fisheries issues, and other resource values. Management actions specifically under Alternatives B and C could result in mitigation for or relocating of ROW or land use authorizations, or they may prohibit the activity altogether. Other resource management actions such as under the Proposed RMP and Alternatives A and E that would improve the quality and productivity of the public lands, particularly for commodity production, may have a cumulative effect on land tenure because they may increase the market value of public lands and create demand for realty use authorizations and legal access to public lands.

Generally, with the exception of Alternative B, the cumulative effects associated with the location of realty use authorizations would be similar for all the alternatives. The Proposed RMP and Alternatives A, C, and E do not prevent the location of realty use authorizations except for exclusion zones, but restrict the location of some kinds of realty use authorizations in certain areas to protect resource values. Excluding or avoiding certain areas for the location of realty use authorizations may lessen the effect to a particular resource considered of public value, but would not lessen the physical alteration of the landscape necessary to accommodate the use at another location. The cumulative effect associated with realty use authorizations would be a function of demand and the number of acres occupied by the ROWs. Implementation of the Proposed RMP and Alternatives A, C, and E would not affect the demand for or number of ROWs, but only relocate the physical effect of those ROWs authorized. The more ROWs granted by the land management agencies (federal and state), as well as private easements, the more cumulative effect to the landscape. Alternative B would presumably not allow the location of new ROWs anywhere in the Planning Area on public land. This would cause some types of land uses, where feasible, to be relocated to nonpublic lands. Therefore, cumulative effects would still result from Alternative B, but not on public land and probably not to the level of the other alternatives.

Cumulative effects from land tenure, land use authorizations, ROWs and unauthorized use of the lands would include effects to land, aesthetics, access, physical alteration of the landscape, and resource degradation from unauthorized use. Eliminating unauthorized use would minimize cumulative effects to sensitive resources, deter future unauthorized use, obtain a fair return for use of the public land, and improve public perception.

4.18 Transportation and Roads

4.18.1 Goal and Objective

4.18.1.1 Goal - Provide travel routes to and through BLM managed lands as appropriate to meet resource objectives while providing for private and public access needs.

Objective. Manage roads and ways within the CMPA consistent with the Route Management Categories and Maintenance Levels identified for each alternative.

4.18.2 Assumptions

The AMU would continue under present transportation/maintenance direction. A TP for the AMU would be completed by December 2008.

All road or route designations and maintenance within the CMPA must adhere to the Steens Act, specifically Section 112. A TP for the CMPA would be completed by December 2005.

The Steens Act closed approximately 104 miles of motorized routes in the Steens Mountain Wilderness. These routes would remain closed across all RMP alternatives, thereby increasing use of other motorized routes within the CMPA.

BMPs would be utilized for construction, maintenance, and general management of the transportation system (Appendix M). These BMPs would be consistent across all alternatives.

Road closure proposals not currently identified in this planning document would undergo additional environmental review with associated public input.

4.18.2.1 Effects Common to All Alternatives

Indirect Effects

Water Resources. Water resources management calls for the use of BMPs and proper floodplain management/function to protect water quality. Management of these components would be the same for all alternatives. Such activities may limit road construction and maintenance techniques. They may also promote road stability and decrease maintenance efforts and costs. Soils management calls for BMPs to be implemented under all alternatives except Alternative B. The use of BMPs for soils would have the same effects as those discussed under water resource effects.

Fish and Wildlife. Activities that may be conducted for fish and wildlife management could affect transportation and roads under any of the alternatives. These activities may include altering or closing road crossings and habitat restoration, both of which may temporarily or permanently affect public access and road maintenance. Monitoring would help determine the need for future road closures or alterations.

Special Status Species. Protection of habitat for special status animal and plant species may affect the location and use of roads and have consequences to access.

Recreation. The amount and season of public recreation use and access demands would affect road condition, road maintenance, and access. The addition of public access easements across private lands would increase access to public lands, and may reduce conflicts with private land owners and damage to private lands.

Wildland Fire Management. Road use and public safety concerns during wildland fire suppression activities may cause temporary closure of some routes. Routes heavily used by fire equipment may be temporarily damaged; however, fire rehabilitation efforts and precipitation would correct damaged roadbeds. Roads with access easements on private lands may improve if subject to a BLM maintenance agreement.

Vegetation. Prescribed fires for woodland management may cause temporary closure of routes; heavy use of routes could cause short-term damage.

4.18.2.2 Alternative A

Direct Effects

Continuation of the current road use and maintenance levels and seasonal restrictions for the existing road system would have no new effects on maintenance or degree of access.

Indirect Effects

Grazing Management. Grazing permittees periodically perform maintenance on BLM roads to facilitate their livestock management activities. This maintenance would normally be authorized under cooperative agreement and generally improves road conditions and access to public lands.

Off-Highway Vehicles. The effects would be the same as Alternative A *Direct Effects.*

4.18.2.3 Alternative B

Direct Effects

Under this alternative, the priorities of road closure and maintenance would be consistent with maximizing natural processes. Road closures and decreased maintenance would reduce motorized access to public lands. Approximately 157 miles of routes within the CMPA are proposed to be closed under this alternative. Decreased road maintenance would result in lower maintenance costs.

Indirect Effects

Grazing Management. In the absence of grazing, no maintenance would be done by the livestock operators; therefore, BLM maintenance costs may increase on some of the secondary access roads. Some additional route closures would be considered, since they would no longer be needed for administration of the grazing program.

Off-Highway Vehicles. Designating 291,173 acres in the CMPA as closed to OHVs and mechanized vehicles would close 157 miles of motorized routes. The following roads would be closed where they are bounded on both sides by the Steens Mountain Wilderness: 18 miles of the Steens Loop Road from the Kiger Overlook to west of Blitzen Crossing, Fish Creek, Cold Springs, Bone Creek, Newton Cabin, Indian Creek, Three Springs, and Big Alvord. These closures would have the same effects as Alternative B *Direct Effects.* Seasonally closing the entire CMPA would reduce route damage from vehicle use in the CMPA when the ground is not frozen.

4.18.2.4 Alternative C

Direct Effects

Under this alternative, the transportation system would be managed to meet resource goals and objectives consistent with emphasizing the protection of natural values. Twenty-six miles of motorized routes would be closed, reducing motorized access to public lands. Road closures and decreased maintenance would result in decreased costs.

Indirect Effects

Grazing Management. With grazing allocations similar to current levels, shared maintenance of roads would be similar to Alternative A. Most routes left open for livestock administration would also be available to the public.

Off-Highway Vehicles. Designating 171,307 acres in the CMPA as closed to OHVs and mechanized vehicles would close 26 miles of motorized routes. The routes that would be closed include the Rooster Comb portion of the Steens Loop Road (approximately three miles), Cold Springs Road west of Nye Cabin to the Riddle Brothers Ranch, Fish Creek Road where bounded on both sides by wilderness, and a 1.2 mile portion of Bone Creek Road west of the Carlson Creek Road intersection. These closures would have the same effects as Alternative C *Direct Effects.* Seasonal closure of the core of the CMPA would reduce route damage from vehicle use in that area when the ground is not frozen.

4.18.2.5 Proposed RMP

Direct Effects

This alternative would be based on meeting resource goals and objectives, while balancing cultural, ecological, and social and economic values. Six miles of routes would be closed, reducing access to public lands. Expanded winter access for motorized uses and motorized access to dispersed campsites would also increase public access.

Indirect Effects

Grazing Management. Grazing effects would be similar to Alternative C.

Off-Highway Vehicles. Closing six miles of ways in the CMPA would have the same effects as, the Proposed RMP, *Direct Effects.* Seasonal closure of the core of the CMPA would reduce route damage from vehicle use in that area when the ground is not frozen.

4.18.2.6 Alternative E

Direct Effects

This alternative emphasizes commodity production and public uses of public lands. No route closures would be proposed for this alternative. Increased access and road maintenance combined with less restrictive management could increase use of the road system as well as maintenance costs. Expanded winter access and motorized access to dispersed campsites would also increase use of the road system. Increased access, road maintenance, and commercial and recreation activities may cause effects to other resource programs.

Indirect Effects

Grazing Management. Cooperative agreements to allow grazing permittees to maintain BLM roads could increase under this alternative, which would improve the condition of affected roads. As public land grazing would be expanded, increased road use by grazing operators during wet periods would cause additional damage to routes.

Off-Highway Vehicles. Increased vehicle traffic on the North and South Steens Loop Roads to the 5,600-foot level associated with winter recreation and spring activities could cause additional damage to the Steens Loop Road. Also, vehicle travel on routes from the Steens Loop Road below the 5,600-foot level and elsewhere in the CMPA would damage routes when the ground is not frozen.

4.18.3 Summary of Effects

Alternative A would be similar to the current level of access and maintenance.

Alternative B would impose the greatest limits on access and would result in the lowest maintenance costs.

Alternative C would have effects similar to Alternative B, but with fewer road closures and restrictions, resulting in more access than under Alternative B, but less than all other alternatives.

The Proposed RMP, would result in road access similar to Alternative C, except that camping and day use opportunities would be expanded relative to additional access routes to dispersed campsites and the 100-foot parking allowance.

Alternative E would impose the fewest restrictions on access and require the greatest amount of maintenance. Additional portions of the South Steens Loop Road would be open to motorized winter recreation; there would be no route closures under this alternative.

4.18.4 Cumulative Effects

Population growth of the Bend and Portland areas as well as increased interest in OHV and mechanized vehicle use, recreation, and tourism, could result in increased motorized use of the Planning Area in the reasonably foreseeable future. Increased visitation and motorized use within the Planning Area would have cumulative effects on transportation

including higher maintenance costs, increased route closure, monitoring and mitigation actions, and more traffic rule enforcement.

The closure of routes in Alternatives B and C would cause increased traffic in other portions of the CMPA and result in higher maintenance costs associated with those routes. Routes across private lands currently available to the public may be closed by private landowners as a result of damage to private lands. Closing the 18-mile segment of the Steens Loop Road in Alternative B would decrease visitor use to that area and to Harney County which may affect the associated economic benefits. In addition, allowing 100-foot parking areas adjacent to open roads could add short travel routes to currently undisturbed areas. Increased use under Alternative E, and possibly, the Proposed RMP would affect road conditions and necessitate additional maintenance and associated costs.

Protection of resources dictates increased management, which inevitably requires stricter controls on access and user numbers, thus minimizing some cumulative effects. The implementation of BMPs for transportation actions should also minimize cumulative effects within the Planning Area under all of the alternatives. In addition, transportation within the CMPA must abide by the Steens Act, further minimizing any cumulative effects in that area.

4.19 Off-Highway Vehicles

4.19.1 Goal and Objective

Goal - Manage motorized (OHV) and mechanized (nonmotorized) vehicle use to protect resource values, promote public safety, provide OHV and mechanized vehicle use opportunities where appropriate and allowable, and minimize conflicts between various users.

Objective. Manage OHV and mechanized vehicle use in conformance with OHV designations.

4.19.2 Assumptions

All OHV designations within the CMPA must abide by the mandates of the Steens Act, specifically Section 112.

All WSAs in the Planning Area would be designated as closed, limited to existing (at the time of the WSA inventory) roads and ways, or limited to designated roads and ways for OHV and mechanized vehicle use, except for the Alvord Desert playa portion of the Alvord Desert WSA. The Steens Mountain Wilderness is designated as closed to all motorized and mechanized vehicle use through all alternatives.

The Alvord Desert playa could remain open to OHV and mechanized vehicle use. It is recognized that OHV and mechanized vehicle use occurred on the playa prior to the FLPMA. OHV and mechanized vehicle use of the Alvord Desert playa does not cause permanent impairment of the wilderness values and does not preclude Congress from eventually designating the area as part of the national wilderness system. The BLM has allowed this use to continue based on the determination that managed OHV and mechanized vehicle use would not preclude future wilderness designation. Should the Alvord Desert playa be designated as wilderness, OHV and mechanized vehicle use would not be allowed on the playa.

The use of motorized or mechanized vehicles is prohibited off roads on public lands in the CMPA.

The limitations to OHV and mechanized vehicle use proposed under the alternatives do not apply to official use, any fire, military, emergency or law enforcement vehicle when used for emergency purposes, any combat or combat support vehicle when used for national defense purposes, and any vehicle whose use is expressly authorized under a permit, lease, license, or contract.

All roads in the AMU “limited” designation areas would be inventoried and a TP prepared after the RMP is completed.

4.19.3 Analysis of Alternatives

4.19.3.1 Effects Common to All Alternatives

Direct Effects

CMPA
The current OHV designations, the result of the Steens Act, closed the Steens Mountain Wilderness to motorized and mechanized vehicle use. The Steens Act also prohibits cross-country travel by motorized and mechanized vehicles. These designations resulted in the displacement of OHV and mechanized vehicle users to roads outside the Steens Mountain Wilderness and increased use on those roads. This cross-country travel prohibition (and Wilderness designation) also displaced many snowmobilers to areas outside of the Planning Area. At the same time, those areas that had been open were designated as "limited to designated" roads and ways, further restricting and concentrating OHV and mechanized vehicle use.

Indirect Effects

Planning Area
Water Resources. Water resources management calls for the use of BMPs and proper floodplain management and function to protect water quality. Water resources management may limit or restrict OHV and mechanized vehicle use where water quality could or would be impaired by runoff from roads and ways.

Fish and Wildlife. Actions conducted for fish and wildlife management could affect OHV and mechanized vehicle use. These actions may include habitat restoration and relocating or closing roads or ways, which may temporarily or permanently affect routes available for OHV and mechanized vehicle use.

Special Status Species. Protection of critical habitat for special status animal and plant species may permanently or seasonally affect the location and use of roads and ways, thereby affecting OHV and mechanized vehicle use.

Cultural Resources, Paleontological Resources and Native American Traditional Practices. Protection of important cultural or paleontological sites and the preservation of Native American Traditional Practices may close or relocate roads, thereby affecting OHV and mechanized vehicle use.

Visual Resources. VRM class objectives would be considered in the location and design of roads, which would not affect OHV and mechanized vehicle use. VRM class objectives would also guide the rehabilitation and restoration of landscapes affected by OHV and mechanized vehicle use.

Energy and Minerals. OHV and mechanized vehicle use would not be affected by locatable, leasable, and salable energy and mineral exploration and development in the following areas that are closed by Congressional action: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, and Steens Mountain Wilderness. OHV and mechanized vehicle users would be displaced to other nearby areas by the presence of active mineral exploration and development. Conversely, minerals operations create sites that are attractive to OHV and mechanized vehicle users, resulting in areas of concentrated use. Only land with high mineral resource potential is likely to be subject to mineral exploration. Further, only a portion of any area with high mineral potential is likely to be economically mined, and proposed for development. In leasing activities, there would be no surface disturbance and no effects to OHV and mechanized vehicle use in areas under NSO leasing stipulations and reduced effects to OHV and mechanized vehicle use in areas under seasonal or other special leasing stipulations. Locatable minerals activities in areas designated closed to OHV and mechanized vehicle use would be under a plan of operations and subject to site specific environmental analysis and a reclamation bond. Leasable minerals activities and salable minerals activities would be subject site specific environmental analysis that would address OHV and mechanized vehicle use.

The potential effects to OHV and mechanized vehicle use from mineral exploration and development would be greatest under Alternatives A and E (28 percent of the Planning Area open to surface disturbance by energy and mineral exploration and development). There would be no effects under Alternative B (the entire Planning Area closed to energy and mineral exploration and development). Alternative C (13 percent of the Planning Area open to surface disturbance by energy and mineral exploration and development) and the Proposed RMP (27 percent of the Planning Area open) would be intermediate in their effects, with Alternative C having fewer effects.

Recreation. Recreation management actions could affect OHV and mechanized vehicle use and management. Promoting use and visitation could increase OHV and mechanized vehicle use and could affect road, way, and open area conditions. Recreation use restrictions could potentially lead to a decrease in OHV and mechanized vehicle use or to increased use and degradation of those roads and ways available for use.

Transportation and Roads. Road closures and maintenance were considered in the current OHV and mechanized vehicle designations. Therefore, transportation management actions would not result in any new or additional effects to OHV and mechanized vehicle use.

Wilderness Study Areas. WSA management is the same in all alternatives. WSAs would be designated as closed or limited to either existing or designated roads and ways. Should Congress designate a WSA as wilderness, the area would be designated as closed to motorized and mechanized vehicle use. Areas released from WSA status would be evaluated and an appropriate OHV and mechanized vehicle designation proposed. Maintenance of an existing OHV and mechanized vehicle designation or change to a new designation would be based on laws, regulations, and policies in place at that time. There could be fewer restrictions on OHV and mechanized vehicle use in released WSAs, potentially increasing OHV and mechanized vehicle use opportunities.

4.19.3.2 Alternative A

Direct Effects

Planning Area
Maintaining the existing OHV designations and seasonal closure on the Steens and surrounding lands would not affect current OHV and mechanized vehicle use.

AMU
The Pueblo and Trout Creek Mountains would not formally be closed seasonally. OHV and mechanized vehicle use would not be affected.

4.19.3.3 Alternative B

Direct Effects

Planning Area
The Planning Area would be designated as limited to designated roads or closed. No areas would be designated as open or limited to existing roads. No opportunities for OHV and mechanized vehicle play (open areas) would be available, organized events would not be allowed, and the number of roads available for use would be reduced. Closing WSAs, roads between WSAs, and WSA cherrystem roads and ways would further reduce the opportunities for OHV and mechanized vehicle use. OHV and mechanized vehicle use would be concentrated on those remaining routes that would be available for use, resulting in congestion and reduced quality of recreation opportunities. OHV and mechanized vehicle use could also be displaced to areas and routes outside of the Planning Area.

CMPA
Closing the Steens Loop Road would eliminate access to many roads used by OHVs and mechanized vehicles. Closing these and other roads in the CMPA would further reduce the routes available for use. Seasonally closing the entire CMPA would eliminate all motorized and mechanized use during the winter and spring. This would displace users (especially snowmobiles) to lands outside the Planning Area and to areas adjacent to the CMPA where more resource damage may occur.

AMU
Closing the Alvord Desert playa would displace OHVs and mechanized vehicles to suitable areas in adjacent states, thereby increasing use in those areas. Seasonally closing the Pueblo and Trout Creek Mountains would displace those OHV and mechanized vehicle users to other areas. Since winter and spring use in these areas is very light, the effects of these closures would be small.

4.19.3.4 Alternative C

Direct Effects

Planning Area
The Planning Area would be designated as limited to designated roads and ways or closed. No areas would be designated as open or limited to existing roads and ways. No opportunities for OHV and mechanized vehicle play (open areas) would be available, but most roads and ways would be available for use. Designation of the four parcels found to have wilderness characteristics as limited to designated roads would protect the naturalness and opportunities of solitude in the parcels.

CMPA
Closing the Rooster Comb to motorized vehicles only would close the Steens Loop Road to through traffic. Closing other roads in the CMPA would reduce the routes available for OHV and mechanized vehicle use. Seasonally closing the core of the CMPA would only affect those OHV and mechanized vehicle users who use the Moon Hill Road in the winter and spring. Nonmotorized winter recreationists would be permitted to drive to the snow line. This could displace users (especially snowmobiles) to lands northeast of the closure, where more resource damage may occur, and to lands outside the Planning Area.

AMU
Closing the Alvord Desert playa would displace OHVs and mechanized vehicles to suitable areas in adjacent states, thereby increasing use in those areas. Seasonally closing the Pueblo and Trout Creek Mountains would displace those OHV and mechanized vehicle users to other areas. Because winter and spring use in these areas is very light, the effects of these closures would be small.

4.19.3.5 Proposed RMP

Direct Effects

Planning Area
Most of the Planning Area would be designated as limited to designated roads and ways, maintaining the number of routes available for OHV and mechanized vehicle use. One area would be designated as open, thus providing an opportunity for OHV and mechanized vehicle play. Opportunities for OHV and mechanized vehicle use would generally be available.

CMPA
Closing six miles of roads in the CMPA would not affect OHV and mechanized vehicle use, because these are mostly duplicate roads. Seasonally closing the core of the CMPA would only affect those OHV and mechanized vehicle users who use the Moon Hill Road in the winter and spring. This could displace some users (especially snowmobiles) to lands northeast of the closure, where more resource damage may occur, and to lands outside the Planning Area. Winter recreation users would be permitted to drive to the snow line on the North Steens Loop Road. Seeking cooperative agreements with OHV and mechanized vehicle clubs may decrease resource degradation and user conflicts.

AMU
Seasonally closing the Pueblo and Trout Creek Mountains would displace OHV and mechanized vehicle users to other areas. Since winter and spring use in these areas is very light, the effects of these closures would be small.

4.19.3.6 Alternative E

Direct Effects

Planning Area
Most of the Planning Area would be designated as open or limited to existing or designated roads and ways. Much of the AMU would be designated as open to OHV and mechanized vehicle use, thus providing extensive opportunities for OHV and mechanized vehicle play. Most roads and ways would also be available for use. OHV and mechanized vehicle use opportunities would be maximized.

CMPA
No additional roads in the CMPA would be closed; therefore, OHV and mechanized vehicle use would not be further affected. Seasonally closing the upper Steens Mountain area would also not affect motorized or mechanized use during the winter and spring, because the Steens Loop Road would be open to the snow line when road conditions are suitable.

AMU
Designating the AMU WSAs as limited to existing roads and ways would maintain the number of routes available for OHV and mechanized vehicle use. The remainder of the AMU, except Mickey Hot Springs and two other parcels, would be designated as open for OHV and mechanized vehicle use, thereby improving OHV and mechanized vehicle opportunities. The Pueblo and Trout Creek Mountains would not formally be closed seasonally.

4.19.4 Summary of Effects

Alternatives A and E would result in the greatest opportunity for use and the greatest potential to cause resource degradation. Alternative B would be the most restrictive and would decrease OHV and mechanized vehicle use throughout the Planning Area as users are displaced to other locations; however, increased use of the available roads could also occur and could lead to user conflicts. The Proposed RMP and Alternative C would restrict OHV and mechanized vehicle use to designated roads and could reduce the number of roads available for use. However, crowding and user conflicts are not anticipated. The Alvord Desert playa would be open to OHVs and mechanized vehicles in the Proposed RMP and Alternatives A and E.

4.19.5 Cumulative Effects

The population growth of the Bend and Portland areas as well as increased interest in OHV and mechanized vehicle use could result in increased motorized and mechanized recreation in the Planning Area in the reasonably foreseeable future. In addition, the BLM's National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands, and the USFS Roadless Areas Initiative would affect motorized recreation uses in regard to both present and future actions. The BLM's National Mountain Bicycling Strategic Action Plan would affect mountain biking.

Management actions relating to the protection of potential or existing threatened, endangered, and sensitive plant and animal species, especially under the Proposed RMP and Alternatives B and C have a high potential for affecting OHV and mechanized vehicle use. Actions under the Proposed RMP and Alternatives B and C that restrict access for OHV and mechanized vehicle users would result in users looking elsewhere for recreation opportunities. This could lead to increased use of the other areas and may result in increased user conflicts and degradation of resources. Recreation access or restrictions for OHV and mechanized vehicle use on adjacent lands could also have similar cumulative effects on OHV and mechanized vehicle use in the Planning Area.

Protection of resources dictates increased management, which inevitably requires stricter controls on access, thus minimizing any cumulative effects. In addition, OHV and mechanized vehicle use within the CMPA must abide by Section 112(b) of the Steens Act, further minimizing any cumulative effects in that area.

4.20 Recreation

4.20.1 Goal and Objectives

4.20.1.1 Goal - Provide developed and undeveloped recreation opportunities, while protecting resources, to manage the increasing demand for resource dependent recreation activities.

Objective 1. Establish and manage intensive use areas where the presence of high quality natural resources and the current or potential demand warrants intensive management practices to protect areas for their scientific, educational, or recreational values while accommodating anticipated increases in use for recreation activities in specific areas.

Objective 2. Manage recreation facilities to protect natural resources and to meet user needs.

Objective 3. Outside of the intensive use areas and developed recreation sites, manage the remainder of the Planning Area for dispersed recreation.

Objective 4. Manage visitor use in the Planning Area to protect natural resources and to provide a variety of recreation opportunities.

Objective 5. Provide information and educational opportunities to public land visitors.

Objective 6. Manage commercial, competitive, educational, and organized group recreation activities.

Objective 7. Manage BCBs to protect the recognized values.

Objective 8. Manage the High Desert National Recreation Trail to protect the recognized values and setting.

4.20.2 Assumptions

Public lands in a resource area not designated as SRMAs become an ERMA.

Throughout the Planning Area, occupancy and use for recreational camping is limited to 14 days in one location.

Management and maintenance of existing developed recreation sites would continue under all alternatives.

Maintenance of and repairs to existing facilities and design of any new facilities would incorporate Americans with Disabilities Act standards.

The current access management to the Riddle Brothers Ranch would be continued.

4.20.3 Analysis of Alternatives

4.20.3.1 Effects Common to All Alternatives

Direct Effects

Planning Area
Continuing current management would not affect recreation. Incorporation of Americans with Disabilities Act standards into recreation facility maintenance and design would improve opportunities for those population segments.

Indirect Effects

Planning Area
Water Resources, Riparian and Wetlands. Water resources management and riparian vegetation management could restrict access or the use of certain areas where resources have become degraded/impaired or to protect water quality. This would limit recreational use of such areas. Activities, which may be conducted for fish and wildlife management, could affect recreation use under any of the alternatives. These activities may include altering or closing roads, trails or campsites, and habitat restoration, all of which may temporarily or permanently affect recreational use or access. In addition, if fish or wildlife habitat is degraded and a decline in any fish or wildlife species occurs, opportunities for wildlife viewing, hunting, and fishing would be reduced.

Special Status Species. Protection of critical habitat for special status animal and plant species may affect the use of roads, trails, campsites, and facilities and could reduce the recreational use of some areas. The protection of special status species is emphasized in Alternatives B and C; therefore, the potential to reduce recreation opportunities would be greatest under these alternatives.

Energy and Minerals. Minerals activities in areas open to mineral exploration and development activities would directly or indirectly displace recreationists from areas where operations are active. Unreclaimed sites would attract OHV and mechanized vehicle use because of the varied terrain and play opportunities. Recreation would not be affected by locatable, leasable, and salable energy and mineral exploration and development in the 72 percent of the Planning Area that is closed by Congressional action or is subject to the WSA IMP, including the nonimpairment criteria: the Mineral Withdrawal Area (except for Steens Act salable minerals sources), designated WSRs, Steens Mountain Wilderness, and WSAs.

Only land with high mineral resource potential is likely to be subject to mineral exploration. Further, only a portion of that area with high mineral potential is likely to be economically mined or proposed for development. In leasing

activities, there would be no surface disturbance and no effects to recreation under NSO leasing stipulations and reduced effects to recreation under seasonal or other special leasing stipulations.

Cultural Resources, Paleontological Resources and Native American Traditional Practices. Protection of significant cultural or paleontological sites and the preservation of Native American Traditional Practices may affect the use of roads, trails, and campsites and may reduce the areas available for recreation. The protection of important cultural or paleontological sites and the preservation of Native American Traditional Practices are emphasized in Alternatives B and C; therefore, the potential to reduce recreation opportunities would be greatest under these alternatives.

Visual Resources. Visual resources mitigation would be incorporated into the planning, siting, and design of all recreation developments, facilities, and projects. VRM class objectives would be met for all recreation management actions, so that visual resources would not be affected.

4.20.3.2 Alternative A

Direct Effects

Planning Area
Current management would continue and minor measures would be implemented to increase recreation opportunities, tourism, or visitation. Current management would not have any new or additional effects to recreation.

CMPA
Maintaining the Mann Lake Recreation Site in its present condition would allow the current resource damage and site problems to continue and would not address the increased use that is anticipated with the paving of the East Steens Road. This increased use could displace current users who prefer the primitive setting. There could also be a change in the type of Mann Lake user as road improvements encourage different users and vehicles, possibly requiring a change in management direction. Maintaining the existing horse trailhead facilities in the South Steens Campground area could have a number of effects to recreation. The existing Little Blitzen parking area would need to be expanded to accommodate existing horse use or day horse users would need to park along the South Steens Loop Road. Parking horse trailers and riding on the South Steens Loop Road pose serious safety concerns for both horses and their riders. Parking horse trailers in the South Steens Campground equestrian side would congest the campground and could occupy campsites in which others may want to camp. Not installing a toilet on the North Steens Loop Road in the Fish Lake area would increase vehicle traffic through Fish Lake Campground and would not help address sanitation concerns on the private lands east of Fish Lake. Not developing a group camping area would require groups to stay in the campgrounds, thereby causing crowding and reducing the number of sites available to the general public. In many cases, group use affects other campers and detracts from their recreational experiences; therefore, separating groups from other campers is preferable. Maintaining Lily Lake as a dispersed recreation site would allow the existing uses and concerns to continue and would reduce educational opportunities. These concerns include sanitation, cutting of aspens for firewood, and protection of Lily Lake. Not providing trail access to the Fir Grove would reduce hiking and educational opportunities.

Trails would not be developed outside the Steens Mountain Wilderness, thereby limiting hiking to cross-country travel and roads, and nonmotorized vehicles to designated roads.

Camping locations would not be restricted. Allowing camping and overnight use at the overlooks would deter many visitors from spending time there because they would feel that they are intruding on someone else's space. Visitors to the Steens Loop Road could be constrained by the presence of camps adjacent to the road. Camping in these areas could also increase the amount of litter and would result in rock rings and ashes at the overlooks and other locations. Current winter recreation opportunities would not be affected. However, cooperative management and snowmobiling opportunities would not be improved through developing an agreement with private land owners. By allowing nonmotorized boating on the mainstem Blitzen River only when the Black Canyon gate on the South Steens Loop Road is open, river use would be limited to those few times when flows are adequate and the gate is open. Not restricting visitor use at the overlooks, moving the overlook interpretive signs to the parking lots, and not requiring permits to visit the CMPA would not affect recreation.

SRPs would continue to be issued on a case-by-case basis. The SRP program would be managed to protect sensitive resources. The number of new commercial, competitive, and organized group SRPs would not be affected.

Vehicle pullouts along the Steens Loop Road would not be delineated or constructed. Resource damage would continue to occur at heavily used locations. Resource damage could occur in new areas because vehicles could be parked anywhere along the Steens Loop Road.

AMU
Heavily used dispersed campsites would continue be affected by vegetation loss, erosion, and sanitation concerns. Developing a parking area near the mouth of Wildhorse Canyon would increase access to east side of the Steens, but such use could affect naturalness and opportunities for solitude and primitive and unconfined recreation in the Steens Mountain Wilderness. Camping in ACECs/RNAs could affect the relevant and important values found in the ACECs, especially if the habitats are disturbed. Camping at Mickey Hot Springs presents safety concerns because of the geothermal features. The opportunity to develop mountain bike trails, if public interest develops, would be lost. The issuance of SRPs would not be affected.

Indirect Effects

Off-Highway Vehicles.

Planning Area
The Alternative A OHV designations would maintain the current OHV and mechanized vehicle use opportunities. Cross-country travel would be allowed on the Alvord Desert playa and in many areas outside the CMPA. There would be very little concentration of use and very few user conflicts. OHV and mechanized vehicle users would not be displaced to areas outside the Planning Area. Opportunities for nonmotorized or mechanized recreation would be maintained. Those recreationists that rely on OHVs or mechanized vehicles (e.g., some hunters) would visit the Planning Area.

CMPA
Motorized recreation access would not be affected in the CMPA. The general public would be able to drive the entire Steens Loop Road and open side roads and visit all the overlooks. Access to the Big Indian and Little Blitzen trailheads would not be restricted. Commercial SRP holders would not be affected. Closing the core of the CMPA during the winter would continue to limit general public access.

AMU
The Alvord Desert playa would remain available to both OHV and mechanized vehicle use, thereby maintaining those recreation opportunities. No seasonal closures would be implemented. Therefore, winter and spring vehicle use in the Pueblo and Trout Creek Mountains would not be affected.

Energy and Minerals. See Effects Common to All Alternatives. Recreation on 28 percent of the Planning Area could be affected by surface disturbance from locatable, leasable, and salable mineral exploration and development. Recreation would most likely be affected on the two percent of the Planning Area that has high potential for locatable minerals and that would be open. Recreation would most likely be affected on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open. Salable minerals activity could affect recreation anywhere on the 28 percent of the Planning Area that is open.

4.20.3.3 Alternative B

Direct Effects

Planning Area
The emphasis on natural processes and de-emphasis of management and facilities development would affect future developed recreation opportunities and use. Dispersed recreation would also be affected; however, it may be either increased or decreased depending on the effects of group size limits, campsite closures, and the availability of naturalness and solitude opportunities. Eliminating the BCBs would limit tourism and visitation based on these designations. In addition, removing the High Desert Trail from maps and discontinuing management under the MOU would reduce use of this trail corridor.

CMPA
Maintaining the Mann Lake Recreation Site in its present condition would allow the current resource damage and site problems to continue and would not address the increased use that is anticipated with the paving of the East Steens Road. This increased use could displace current users who prefer the primitive setting. There could also be a change in the type

of Mann Lake user as road improvements encourage different users and vehicles, possibly requiring a change in management direction. Maintaining the existing horse trailhead facilities in the South Steens Campground area could have a number of effects on recreation. The existing Little Blitzen parking area would need to be expanded to accommodate existing horse use or day horse users would need to park along the South Steens Loop Road. Parking horse trailers and riding on the South Steens Loop Road pose serious safety concerns for both horses and their riders. Parking horse trailers in the South Steens Campground equestrian side would congest the campground and could occupy campsites in which others may want to camp. Not installing a toilet on the North Steens Loop Road in the Fish Lake area would increase vehicle traffic through Fish Lake Campground and would not help address sanitation concerns on the private lands east of Fish Lake. Not developing a group camping area would require groups to stay in the campgrounds, thereby causing crowding and reducing the number of sites available to the general public. In many cases, group use affects other campers and detracts from their recreational experiences; therefore, separating groups from other campers is preferable. Designating Lily Lake as a day use area would help protect the aspens and the lake. Not providing trail access to the Fir Grove would reduce hiking and educational opportunities.

Trails would not be developed outside the Steens Mountain Wilderness, thereby limiting hiking to cross-country travel and roads, and nonmotorized vehicles to designated roads.

Closing the listed areas to camping and restricting camping to developed campgrounds would limit overnight use and increase day use. Visitors to the Steens Loop Road would not be constrained by the presence of camps in the overlooks and adjacent to the road. The trash, rock rings, and ashes associating with camping in these areas would be eliminated. People wishing to camp in the closed areas would be displaced to the campgrounds or locations outside the CMPA, thereby affecting current recreation use patterns and causing heavier campground use and increased crowding. The Steens Loop Road from the Kiger Gorge Overlook to west of Blitzen Crossing would be closed to motorized and mechanized vehicles so there would be no need to restrict parking or stopping on the Rooster Comb or intensively manage use at the East Rim and Wildhorse Overlooks. South Steens Campground would only be accessible to hikers and horseback riders. Winter recreation opportunities would be reduced due to the elimination of snowmobile use. Cooperative management and snowmobiling opportunities would not be improved through developing an agreement with private land owners. Nonmotorized winter recreation would not be affected. Nonmotorized boating on the mainstem Blitzen River would not be allowed, thereby eliminating this opportunity. Visitor use at Kiger Overlook would increase and would require intensive management. Restricting visitors to designated trails at the Kiger Overlook would constrain their activities and sense of exploration. Moving the overlook interpretive signs to the parking lots would not affect recreation. Requiring permits for all CMPA users would deter some users, especially if a fee is charged. This policy would result in decreased use of the area, as would closing a major section of the Steens Loop Road.

Only the existing, long-term SRPs would be retained. No new SRPs would be issued for any activity. This could result in increased business for the existing permittees, but their activities would also be constrained by the road closures and use restrictions. Many commercial tours and organized groups would not visit the area because they would not be issued a permit.

Vehicle pullouts along the Steens Loop Road would not be delineated or constructed. Resource damage would occur at heavily used locations and new areas between Jackman Park and Kiger Overlook because most of the Steens Loop Road would be closed.

AMU

Heavily used dispersed campsites would continue to be affected by vegetation loss and erosion, but requiring dispersed users to pack out all solid human waste would abate the sanitation concerns. Not developing a staging area adjacent to the Penland Road would decrease access to the east side of the Steens. Naturalness and opportunities for solitude and primitive and unconfined recreation in the Steens Mountain Wilderness would be maintained. Closing Mickey Hot Springs to camping would alleviate the safety concerns associated with the geothermal features. The opportunity to develop mountain bike trails, if public interest develops, would be lost. No SRPs would be issued, which would eliminate all existing and future opportunities for commercial, competitive, and organized group recreation.

Indirect Effects

Social and Economic Values. Recreation and tourism would be allowed but not promoted.

Transportation and Roads. Road closures and limited maintenance would reduce motorized access to public lands and would limit motorized access to dispersed recreation sites, thus reducing those recreation opportunities.

Off-Highway Vehicles.

Planning Area
The Alternative B OHV designations would minimize OHV and mechanized vehicle use opportunities with over half of the Planning Area designated as closed and the remainder designated as limited to designated roads. This could concentrate use on the remaining designated roads and increase user conflicts. Many OHV and mechanized vehicle users would be displaced to areas outside the Planning Area. Recreation access by vehicles would be minimized, but opportunities for nonmotorized and nonmechanized recreation and access would increase. Those recreationists that rely on OHVs or mechanized vehicles (e.g., some hunters) would not visit the Planning Area. Use would increase at those sites and in those areas accessible by vehicle.

CMPA
Motorized and mechanized recreation access would be curtailed in the core of the CMPA because of the closure of most of the Steens Loop Road and the side roads into and through the Steens Mountain Wilderness and WSAs. The general public would not be able to drive the Steens Loop Road or drive to the East Rim or Wildhorse Overlooks. All access to Big Indian, Little Blitzen, Riddle Ranch, and South Steens Campground would be by foot or horse. Access to the existing Big Indian and Little Blitzen trailheads would be restricted. Use would increase at those sites and in those areas accessible by vehicle. Commercial SRP holders that currently offer motorized or mechanized tours and activities would be unable to provide them in all areas. Demand for hiking and horse trails and horse facilities could increase. Closing the entire CMPA during the winter would restrict public access and recreation opportunities, especially to those areas that are usually accessible during the winter and where other resources could be affected.

AMU
Closure of the Alvord Desert playa would displace OHV and mechanized vehicle users to other similar areas (dry lake beds) in neighboring states, further affecting those areas. Seasonal closures would generally not affect OHV and mechanized vehicle use, other than delaying use of those roads until they are dry enough to use without damaging other resources.

Energy and Minerals. There would be no effects to recreation because the entire Planning Area would be withdrawn from locatable, leasable, and salable energy and mineral exploration and development.

4.20.3.4 Alternative C

Direct Effects

Planning Area
The CMPA, Pueblo Mountains, and Trout Creek Mountains would be intensively managed for recreation. Sites where recreation use affects resource values would be rehabilitated or closed. Both developed and dispersed recreation would be affected by increasing some opportunities and limiting others. Existing developed sites, campgrounds, and facilities would be maintained. Group size limits would be implemented to protect natural and cultural values. All of these actions would continue or limit the existing opportunities under Alternative A. The effects from managing BCBs and the High Desert Trail would be the same as Alternative A.

CMPA
Maintaining the Mann Lake Recreation Site in its present condition would allow the current resource damage and site problems to continue and would not address the increased use that is anticipated with the paving of the East Steens Road. This increased use could displace current users who prefer the primitive setting. There could also be a change in the type of Mann Lake user as road improvements encourage different users and vehicles, possibly requiring a change in management direction. Maintaining the existing horse trailhead facilities in the South Steens Campground area could have a number of effects on recreation. The existing Little Blitzen parking area would need to be expanded to accommodate existing horse use, or day horse users would park along the South Steens Loop Road. Parking horse trailers and riding on the South Steens Loop Road pose serious safety concerns for both horses and their riders. Parking horse trailers in the South Steens Campground equestrian side would congest the campground and could occupy campsites in which others may want to camp. Installing a toilet on the North Steens Loop Road in the Fish Lake area would provide needed facilities, while reducing vehicle traffic through Fish Lake Campground, and could help address sanitation concerns on the private lands east of Fish Lake. Developing a group camping area within an existing campground could lead to crowding and would reduce the number of sites available to the general public. Physical separation of groups from other campers may not be feasible, so other campers may be affected by the presence and activities of groups.

Designating Lily Lake as a day use area and installing interpretive signs would protect the aspens and the lake and would provide an educational opportunity. Minimally maintaining the route to the Fir Grove would provide a safe route for the public to use.

Hiking and nonmotorized trails would be developed outside the Steens Mountain Wilderness only where necessary to protect natural values. Only short reroutes to specifically address identified problems are anticipated; therefore, recreation opportunities would not be increased or improved.

Closing the listed areas to camping and restricting camping to developed campgrounds and designated dispersed sites outside the Steens Mountain Wilderness would constrain visitors' choices. However, there would be an adequate number of identified dispersed camping locations to accommodate most campers. Visitors to the Steens Loop Road would not be constrained by the presence of camps adjacent to the road and in the overlooks. The trash, rock rings, and ashes associated with camping in these areas would be eliminated. People wishing to camp in the closed areas would be displaced to the campgrounds or designated dispersed sites, thereby affecting current recreation use patterns and causing heavier campground and dispersed site use and crowding. The Rooster Comb would be closed to motorized vehicles, so there would be no need to restrict parking or stopping. Winter recreation opportunities would be reduced through the elimination of snowmobile use in association with the North Steens Loop Road. However, snowmobile use would be allowed on designated roads elsewhere in the CMPA. Cooperative management and snowmobiling opportunities would not be improved through developing an agreement with private land owners. Nonmotorized winter recreation would benefit from development of a staging area along the North Steens Loop Road. By allowing nonmotorized boating on the mainstem Blitzen River only when the Black Canyon gate on the South Steens Loop Road is open and only when ORVs would not be affected, river use would be limited to those few times when flows are adequate and the gate is open. Restricting visitors to designated trails at the overlooks would constrain their activities and sense of adventure. Moving the overlook interpretive signs to the parking lots would not affect recreation. Requiring permits for all Steens Loop Road users has the potential to deter some users, especially if a fee is charged. This could result in decreased use of the Steens Loop Road.

Commercial, competitive, and organized group opportunities and activities would be maintained through the issuance of SRPs. The SRP program would be managed intensively to protect cultural and natural resource values. An allocation system would be developed and implemented to reduce resource impacts, improve visitor experiences, and support existing commercial recreation operations.

Vehicle pullouts along the Steens Loop Road would not be delineated or constructed. Resource damage would continue to occur at heavily used locations. Resource damage could occur in new areas because vehicles could be parked anywhere along the Steens Loop Road.

AMU
Heavily used dispersed campsites would continue be affected by vegetation loss, erosion, and sanitation concerns, except at Pike Creek and Frog Spring. Encouraging dispersed users to pack out all solid human waste would reduce site specific sanitation concerns, if users comply with the recommendation. Developing a staging area adjacent to the Penland Road would increase access to the east side of the Steens, but use there could affect naturalness and opportunities for solitude and primitive and unconfined recreation in the Steens Mountain Wilderness. Closing the ACECs/RNAs to camping would protect the relevant and important values found in the ACECs and would reduce safety concerns at Mickey Hot Springs. The opportunity to develop mountain bike trails, if public interest develops, would be lost. SRPs would be issued for all areas, except the Alvord Desert playa. However, an allocation system would be developed and implemented, if needed, to protect cultural and natural resources.

Indirect Effects

Social and Economic Values. SRPs and some forms of recreation could be limited, thus reducing recreation opportunities.

Transportation and Roads. Road closures and limited maintenance would have the same effects as Alternative B.

Off-Highway Vehicles.

Planning Area
The Alternative C OHV designations would reduce OHV and mechanized vehicle use opportunities, by limiting all use, outside of closed areas, to designated roads and ways. This could concentrate use on the designated roads and ways and

increase user conflicts. Some OHV and mechanized vehicle users could be displaced to areas outside the Planning Area. Opportunities for nonmotorized and nonmechanized recreation and access could be increased. Those recreationists that rely on OHVs or mechanized vehicles (e.g., some hunters) may not visit the Planning Area.

CMPA
Motorized recreation access would be reduced in the core of the CMPA because of the closure of the Rooster Comb and some of the side roads into and through the Steens Mountain Wilderness. The general public would not be able to drive the entire Steens Loop Road, but would be able to drive to the East Rim and Wildhorse Overlooks, Riddle Ranch, and South Steens Campground. Access to the Big Indian and Little Blitzen trailheads would not be restricted. Longer driving times could affect those visitors camping at South Steens Campground. However, the Rooster Comb and all designated side roads would be available to mechanized (i.e., mountain bikes) vehicles. Commercial SRP holders that currently offer motorized tours and activities would be unable to provide them in all areas. Closing the core of the CMPA during the winter would limit public access and recreation opportunities, but not appreciably more than the current seasonal closure.

AMU
Closure of the Alvord Desert playa would displace OHV and mechanized vehicle users to other similar areas (dry lake beds) in neighboring states, further affecting those areas. Seasonal closures in the Pueblo and Trout Creek Mountains would generally not affect OHV and mechanized vehicle use, other than delaying use of those roads until they are dry enough to use without damaging other resources.

Energy and Minerals. See Effects Common to All Alternatives. In addition, existing BLM recreation and administrative sites and potential approved BLM recreation sites would be closed to locatable, leasable, and salable energy and mineral exploration and development. Recreation on 13 percent of the Planning Area could be affected by surface disturbance from locatable, leasable, and salable energy and mineral exploration and development. Recreation would most likely be affected on the less than 0.5 percent of the Planning Area that has high potential for locatable minerals and that would be open. Recreation would most likely be affected on the 43 acres in the Planning Area that have high potential for leasable minerals and that would be open; these acres would be open under standard leasing stipulations. Salable minerals activity could affect recreation anywhere on the 13 percent of the Planning Area that is open.

4.20.3.5 Proposed RMP

Direct Effects

Planning Area
The CMPA, the Pueblo Mountains, and Trout Creek Mountains would be managed intensively for recreation. The emphasis on recreation opportunities and facility expansion would increase the availability of developed recreation. Dispersed recreation would also be affected; however, it may either increase or decrease depending on whether increased recreation and tourism promotes dispersed use or whether effects to naturalness and solitude would deter dispersed recreation. Management of existing and creation of new BCBs would promote tourism and recreation. The effects of managing High Desert Trail would be the same as Alternative A.

CMPA
Implementation of a variety of projects and actions would be delayed until a comprehensive recreation plan for the CMPA is completed. This would allow a recreation overview for the CMPA to be developed; however, additional project- or action-specific Recreation Project Plans may also be required.

Through prohibiting camping and overnight use at the overlooks, visitors to the overlooks would not be constrained by the presence of camps. This could also decrease the amount of litter and would eliminate rock rings and ashes at the overlooks. Restricting parking and stopping on the Rooster Comb would increase public safety and decrease driving hazards on this narrow, winding stretch of the South Steens Loop Road. Providing safe pullouts or parking areas at either end of the narrow stretch would safely accommodate public viewing of Big Indian. Encouraging visitors to stay on designated trails at the overlooks and moving the overlook interpretive signs to the parking lots would not affect recreation.

Commercial, competitive, and organized group opportunities and activities outside of the Steens Mountain Wilderness would be promoted through the issuance of SRPs. However, increased permitted use could lead to crowding at popular sites and areas unless the program is managed intensively. If needed, an allocation system would be developed and

implemented to reduce resource impacts, improve visitor experiences, and support existing commercial recreation operations.

AMU
Implementation of a variety of projects would be delayed until Recreation Project Plans are completed and EAs are written. Possible project plans could be written for the Frog Springs area, Pike Creek, the Penland Road, other dispersed campsites, and mountain bike trails. Closing the RNAs and Mickey Hot Springs to camping would protect the relevant and important values found in the ACECs and would reduce safety concerns at Mickey Hot Springs. SRPs would be issued for all areas. However, an allocation system would be developed and implemented, if needed, to protect cultural and natural resources.

Indirect Effects

Social and Economic Values. Recreation would be promoted and developed in an attempt to balance social, economic, cultural, and ecological components; recreation opportunities would be expanded, and both developed and dispersed recreation may increase.

Transportation and Roads. Access to dispersed campsites would be expanded, increasing opportunities for recreation.

Off-Highway Vehicles.

Planning Area
The Proposed RMP OHV designations would maintain OHV and mechanized vehicle use opportunities similar to the Alternative C OHV designations. Cross-country travel would be allowed only on the Alvord Desert playa. There would be little concentration of use and few user conflicts. OHV and mechanized vehicle users would not be displaced to areas outside the Planning Area. Opportunities for nonmotorized or mechanized recreation could be maintained. Those recreationists that rely on OHVs or mechanized vehicles (e.g., some hunters) would probably visit the Planning Area.

CMPA
Motorized recreation access would not be affected in the CMPA. The general public would be able to drive the entire Steens Loop Road and side roads and visit all the overlooks. Access to the Big Indian and Little Blitzen trailheads would not be restricted. Commercial SRP holders would not be affected. Closing the core of the CMPA during the winter would restrict public access and recreation opportunities, but not appreciably more than the current seasonal closure.

AMU
The Alvord Desert playa would remain available to both OHV and mechanized vehicle users, thereby maintaining those recreation opportunities. Seasonal closures would generally not affect OHV and mechanized vehicle use, other than delaying use of those roads until they are dry enough to use without damaging other resources.

Energy and Minerals. See Effects Common to All Alternatives. In addition, existing BLM recreation and administrative sites and potential approved BLM recreation sites would be closed to locatable and salable mineral exploration and development. Recreation on 27 percent of the Planning Area could be affected by surface disturbance by locatable, leasable, and salable mineral exploration and development. Recreation would most likely be affected on the 1.5 percent of the Planning Area that has high potential for locatable minerals and that would be open. Recreation would most likely be affected on the 332 acres in the Planning Area that have high potential for leasable geothermal resources and that would be open; 281of those acres would be open for leasing with seasonal or other special stipulations and the remainder would be open under standard leasing stipulations. Salable minerals activity could affect recreation anywhere on the 27 percent of the Planning Area that is open.

4.20.3.6 Alternative E

Direct Effects

Planning Area
The CMPA, Pueblo Mountains, and Trout Creek Mountains would be managed intensively for recreation. The emphasis on developing tourism, recreation opportunities, and new facilities would affect both developed and dispersed recreation. Developed recreation would be promoted and increased, while dispersed recreation may either increase or decrease, depending on whether new facilities and opportunities encourage dispersed use or whether effects to naturalness and

solitude deter dispersed recreation. Management of existing and development of new BCBs would promote tourism and recreation. The effects of managing High Desert Trail would be the same as Alternative A.

CMPA
Upgrading the Mann Lake Recreation Site would increase camping opportunities for those who prefer more developed camping. Conversely, those who like a more primitive setting could be displaced to other areas near Mann Lake. Developing a horse trailhead facility in the South Steens Campground area could have a number of effects on recreation. The existing Little Blitzen parking area would not need to be expanded nor would day horse users need to park along the South Steens Loop Road or in the equestrian side of South Steens Campground. Designing connecting trails would reduce safety concerns and limit resource damage. However, this facility has the potential to attract additional horse users to the area. Installing toilets at the three main overlooks would provide needed facilities and would protect human health. Developing a group camping area on private land would help accommodate existing group use, provide a needed facility, help maintain the atmosphere in the existing campgrounds, and foster cooperative management. Installation of a toilet at Lily Lake would increase both day and overnight use at the site. Marking and minimally maintaining the route to the Fir Grove and providing parking and information would improve hiking and educational opportunities. This short hike would provide an alternative activity that could attract users away from other heavily used trails.

Developing hiking and nonmotorized trails would provide additional hiking and mountain biking opportunities.

Camping locations would not be restricted. Allowing camping and overnight use at the overlooks would deter many visitors from spending time there because they would feel that they are intruding on someone else's space. This could also increase the amount of litter and would result in rock rings and ashes at the overlooks. Restricting parking or stopping on the Rooster Comb would increase public safety and decrease driving hazards on this narrow, winding stretch of the Steens Loop Road. Winter recreation opportunities would be increased through the development of a staging area, cross-country ski trails, and a nonmotorized play area. These facilities, coupled with unrestricted motorized access, would increase use of North Steens Loop Road during the winter. Allowing snowmobile use on all designated roads, including the South Steens Loop Road, would further increase motorized winter recreation opportunities, but could affect the experiences of nonmotorized winter recreationists. With the South Steens Loop Road open to South Steens Campground during the winter and spring, opportunities for floating the Donner und Blitzen River would increase. Not restricting visitor use at the overlooks, moving the overlook interpretive signs to the parking lots, and not requiring permits to visit the CMPA would not affect recreation.

Commercial, competitive, and organized group opportunities and activities would be increased through the issuance of SRPs. However, increased permitted use could lead to crowding at popular sites and areas unless the program is intensively managed.

Vehicle pullouts along the Steens Loop Road would encourage motorists to stop and enjoy the area. Regularly spaced pullouts could spread out use, but could also concentrate use at areas that may not be suitable for heavy visitor use.

AMU
Development of a campground in the Frog Springs area would reduce dispersed camping and its effects, but could result in heavier use of the area. Similarly, installation of toilets at Pike Creek and other dispersed campsites would reduce sanitation concerns, but could also result in heavier use of the sites. Encouraging dispersed users to pack out all solid human waste would reduce site specific sanitation concerns, if users comply with the recommendation. Developing a staging area adjacent to the Penland Road would increase access to the east side of the Steens, but use there could affect naturalness and opportunities for solitude and primitive and unconfined recreation in the Steens Mountain Wilderness. Closing Mickey Hot Springs to camping would reduce safety concerns. The opportunity to develop mountain bike trails, if public interest develops, would be available. SRPs would be issued. Emphasis on commercial, competitive, and organized group use opportunities would lead to increased use and effects.

Indirect Effects

Social and Economic Values. Recreation and tourism opportunities would be emphasized and would increase developed and dispersed recreation opportunities. However, dispersed recreation may decrease as a result of decreased naturalness and solitude.

Transportation and Roads. No route closures are proposed. Access would be increased, including winter motorized access and access to dispersed campsites. The greatest amount of motorized access for recreational use would be allowed.

Off-Highway Vehicles.

Planning Area
The Alternative E OHV designations would maintain OHV and mechanized vehicle use opportunities similar to the Alternative A OHV designations. Cross-country travel would be allowed on the Alvord Desert playa and in many areas outside the CMPA. There would be very little concentration of use and very few user conflicts. OHV and mechanized vehicle users would not be displaced to areas outside the Planning Area. Opportunities for nonmotorized and nonmechanized recreation would be decreased. Recreationists that rely on OHVs or mechanized vehicles (e.g., some hunters) would visit the Planning Area.

CMPA
Motorized recreation use would not be affected in the CMPA. The general public would be able to drive the entire Steens Loop Road and side roads and visit all the overlooks. Access to the Big Indian and Little Blitzen trailheads would not be restricted. Commercial SRP holders would not be affected by road closures. Closing the upper Steens Mountain area during the winter would restrict public access, but allowing unrestricted access to the 5,600-foot level on the North Steens Loop Road and to South Steens Campground on the South Steens Loop Road would expand winter recreation opportunities throughout the core of the CMPA.

AMU
The Alvord Desert playa would remain available to both OHV and mechanized vehicle users, thereby maintaining those recreation opportunities. No seasonal closures would be implemented. Winter and spring vehicle use in the Pueblo and Trout Creek Mountains would not be affected.

Energy and Minerals. Minerals management would be conducted the same as in Alternative A; therefore, the effects to recreation would be the same as Alternative A.

4.20.4 Summary of Effects

Alternative A would continue the current level of management and facilities. Current and future needs for recreation facilities and resource protection would not be addressed. Alternative B would place the most restrictions on recreationists and would also not address the current and future needs for recreation facilities. Resource protection at dispersed sites would be emphasized. Alternative C also emphasizes resource protection at dispersed sites, while addressing the current needs for recreation facilities and resource protection. Proposed RMP would address overall recreation management for the Planning Area and several site specific safety or resource concerns in the CMPA. Analysis of CMPA recreation activities and facilities would be deferred to a comprehensive recreation plan to be developed after the RMP is completed. AMU recreation facilities and activities would be analyzed in site specific Recreation Project Plans. Alternative E would encourage tourism and increased recreation use through new and upgraded facilities, expanded activities, and increased signing and educational activities.

4.20.5 Cumulative Effects

Historically, the Planning Area was viewed as remote and the majority of recreation was of a dispersed nature. The current trend is toward increased recreation and greater demand for developed recreation opportunities. It is likely that the population growth of the Bend and Portland areas, as well as the publicity the Steens Mountain Area is receiving, could result in increased recreation use in the Planning Area in the reasonably foreseeable future. In addition, the "BLM's Recreation 2000 Plan and Update" would affect recreation use and development in regard to both present and future actions.

Actions under Alternatives B and C, that restrict access or limit party size, could cause recreation users to look elsewhere for recreation opportunities. This could lead to increased use of other areas and may result in cumulative effects to those areas such as increased degradation of resources and user conflicts. However, actions under Alternatives B and C would also improve ecological conditions overall and could result in a long-term improvement of the quality of most recreation experiences. The Proposed RMP, which would address recreation through a CMPA comprehensive recreation plan and a number of Recreation Project Plans, would provide for resource protection and set limits on use, thus minimizing cumulative effects to recreation. Alternative E, which promotes recreation and tourism, may result in cumulative effects to natural resources within the Planning Area and result in the long-term degradation of the quality of most recreation experiences. Management actions relating to other resources on USFWS, state, and private lands within and adjacent to the Planning Area could also result in cumulative effects to recreation.

4.21 Areas of Critical Environmental Concern

4.21.1 Goal and Objectives

4.21.1.1 Goal - Retain existing and designate new ACECs where relevance and importance criteria are met and special management is required to protect the identified values.

Objective 1. Retain and manage existing ACECs if they meet relevance and importance criteria and require special management or protection.

Objective 2. Designate and manage new ACECs that meet relevance and importance criteria and need special management or protection.

4.21.2 Assumptions

All ACEC alternatives would avoid disturbances to all special status plant and animal populations in all ACECs where they occur. In addition, general inventories, monitoring and research would continue for special status plants, and conservation agreements would be written for all BLM sensitive plant species.

Under the Proposed RMP and Alternatives A, C, and E, wildland fires in all ACECs would be managed according to appropriate management response; however, some ACECs would be analyzed for possible wildland fire use. Use of heavy equipment in ACECs, WSAs, and RNAs would be avoided and would require line officer approval. Use of retardant would be allowed within these areas for initial attack. Retardant use during extended attack would be considered as a part of the wildland fire situation analysis, considering the resource values at risk. If used, heavy equipment would be restricted to existing roads and ways. Prescribed fire would be used in ACECs where it can be shown to preserve the desired characteristics of the ACEC and to meet management objectives.

Under all ACEC alternatives, noxious weeds would be aggressively controlled using integrated weed management methods such as biological control, site specific spraying, and grubbing by hand, consistent with protection and promotion of relevant and important values. Any weed control measures proposed in WSAs within ACECs would be consistent with WSA IMP direction. Weed control measures proposed within wilderness or WSRs would be consistent with legislation covering those areas.

All management actions for those portions of the ACECs within a WSA would be governed by the WSA IMP until such time as Congress makes a determination regarding wilderness designation for the area. Any WSAs, or portions thereof, designated as an ACEC and later released from WSA status would be managed according to the applicable management direction for that ACEC. Under some alternatives, the proposed ACEC management within WSAs may be more restrictive than the WSA IMP, such as closing an area to livestock grazing or limiting vehicle use to designated roads and ways rather than existing roads and ways. Nine proposed or existing ACECs overlap with existing WSAs.

Most of the ACECs in the Planning Area are within the Mineral Withdrawal Area and are withdrawn from locatable, leasable, and salable energy and mineral exploration and development with the exception of Long Draw RNA/ACEC, Pueblo Foothills RNA/ACEC, East Fork Trout Creek proposed RNA/ACEC, and Tum Tum Lake RNA/ACEC. Three of those four RNAs/ACECs are in WSAs and although they are open to mining claim location, they are subject to the WSA IMP, including the nonimpairment criteria for locatable minerals. In those three ACECs in WSAs, the WSA IMP specifies No Leasing for leasable minerals and Closed for salable minerals. Only Tum Tum Lake RNA/ACEC would be open to surface disturbance by locatable and leasable mineral exploration and development.

All management actions for ACECs located within wilderness or WSRs would be governed by the Wilderness Act or the WSR Act as amended.

Wild horses would continue to be gathered on a schedule which would prevent overstocking of the range, and help to protect the key elements of existing and potential ACECs.

Nondestructive research is encouraged in all of the proposed and existing ACECs and is not limited only to those areas that have RNAs. Any research would need to be authorized by the BLM in writing and where necessary, permitted. It is assumed that the resultant data and information gathered would be shared with the BLM to help guide management of these areas.

Recreational activities are not encouraged within ACECs unless the ACEC was designated with recreational use in mind. Commercial use, or use requiring a special permit, which occurs or is proposed to occur within an ACEC, would be evaluated on a case-by-case basis and would be permitted, modified, or prohibited as needed to protect the ACEC values. Camping would be prohibited in RNA/ACECs but allowed in ACECs.

According to 43 CFR 3809.11, an approved plan of operations would be required prior to commencing any operation, except casual use, involving locatable minerals in a designated ACEC, regardless of the size of disturbance.

4.21.3 Analysis of Alternatives

Alvord Desert ACEC

Alternative A

The ACEC designation and current management would continue. The size of the ACEC would remain at 17,933 acres. Since a small portion of the playa is in the ACEC, recreation in the form of OHV and mechanized vehicle use could damage unique vegetation communities in the portions of the ACEC adjacent to the Alvord Desert. Livestock grazing during the winter would continue, which could be a beneficial effect to some herbaceous plants by removing the previous year's growth. Year long grazing by wild horses could affect the vigor of herbaceous vegetation, especially in areas where horses tend to concentrate.

Alternative B

The ACEC designation would be revoked; however, the area would remain a WSA with a focus on maximizing natural processes and limiting access and use. The effects of removing OHV and mechanized vehicle use from the Alvord Desert playa would be increased protection of the relevant and important values, as well as resources such as vegetation, soils, water resources, and wildlife. The area would continue to be managed under the WSA IMP until Congress designates the area as wilderness or releases it from WSA status.

Alternative C

The ACEC designation would continue and the size would be increased to 21,615 acres, for increased protection of the special values. The effects of removing OHV and mechanized vehicle use from the Alvord Desert playa would be increased protection of the relevant and important values and resources such as vegetation, soils, water resources, and wildlife. The effects of livestock grazing and wild horses would be the same as Alternative A.

Proposed RMP

The ACEC designation would continue, and the size would be increased to 21,615 acres, for increased protection of the special values. The effects of livestock grazing and wild horses in the ACEC, and OHV and mechanized vehicle use from the adjacent Alvord Desert playa would be the same as in Alternative A.

Alternative E

The ACEC designation would be revoked; however, the area would still be managed as a WSA under the WSA IMP with emphasis on maximizing commodity production.

Alvord Peak ACEC

Alternatives A and C

The ACEC designation and current management would continue and the size of the ACEC would remain at 14,040 acres. Livestock grazing would continue within the ACEC which could affect the condition of herbaceous vegetation on the more accessible areas. A possible increase in recreation use within the ACEC would not affect the relevant and important values. These alternatives would not result in any new or additional effects to natural resources or resource uses.

Proposed RMP and Alternatives B and E

The ACEC designation would be revoked. Since the ACEC is located entirely within the Steens Mountain Wilderness, it would be subject to management under the Steens Act and the Wilderness Act with all of the limits and resource protection provided by such. Wildlife management conducted by the ODFW to protect the bighorn sheep in this area would continue.

Borax Lake ACEC

Alternative A

The ACEC designation and current management would continue, and the size of the ACEC would remain at 520 acres. Authorized livestock grazing inside of the fenced exclosure could affect portions of the critical habitat for the Borax Lake chub. Grazing outside the exclosure in the Tule Springs Allotment should not result in damage to the critical habitat. Other management actions proposed for this ACEC would not result in any new or additional effects to the critical habitat for the federally endangered Borax Lake Chub.

Alternative B

The ACEC designation would be revoked and special protection for the Borax Lake Chub would be provided only through the management emphasis on maximizing natural processes and discouraging use. Since the area is within the mineral withdrawal area, and grazing would not be allowed either inside or outside the fenced part of the ACEC, there would be no effects to the critical habitat for the Borax Lake Chub.

Alternative C

The ACEC designation and management would continue. This alternative would provide the greatest protection for the critical habitat of the Borax Lake Chub by increasing the size of the ACEC to 600 acres, closing the roads to OHV and mechanized vehicle use, closing the area to new ROWs or realty use authorizations, and closing the fenced area to livestock grazing. Those changes would reduce or eliminate ground disturbing activities caused by vehicles or livestock. Livestock grazing outside the fenced area should be very light and would not result in damage to the critical habitat.

Proposed RMP

The ACEC designation would continue and the size of the ACEC would be increased to 600 acres. Activities proposed under this alternative would be similar to Alternative C except that ROWs and realty use authorizations would be based on avoidance rather than exclusion, and the BLM would pursue acquisition of private inholdings. The use of the Borax Lake area by OHV and mechanized vehicle users and sightseers would be limited to designated routes. The acquisition of the private lands within the ACEC would allow the BLM to better manage the area as a whole. It would create an additional workload for management of the Borax Lake Chub's major critical habitat, which is the lake itself. The effects from the management actions would be similar to Alternative C.

Alternative E

The ACEC designation would be revoked and special protection for the critical habitat of the Borax Lake Chub would no longer be provided. Use of the Borax Lake area by OHV and mechanized vehicle users and sightseers would be limited to designated routes. The area would continue to have protection from mineral and leasing actions. Grazing would be controlled by a workable AMP. The effects of the management actions would be the same as under Alternative A.

East Kiger Plateau RNA/ACEC

Proposed RMP and Alternatives A and C

The RNA/ACEC designation and current management would continue, and the size of the RNA/ACEC would remain at 1,216 acres. Recreational activities such as hunting, hiking, or backpacking, may increase since the Steens Mountain Wilderness was designated, thereby increasing the visitation to this remote area. Increased visitation could affect the relevant and important values associated with the RNA/ACEC.

Alternative B and E

The designation would be revoked, leaving the area to be managed as wilderness and WSA. The relevant and important values would be protected by wilderness and WSA status as well as the actual remoteness of the site.

Kiger Mustang ACEC

Alternative A

The current designation and management would continue, and the size of the ACEC would remain at 31,725 acres. Outside the WSA, the area is open for OHV and mechanized vehicle use, which may change the pattern of use by wild horses if OHV and mechanized vehicle use increases. Livestock grazing would continue under the direction of an AMP, which would not affect management of the ACEC. Wild horses would continue to be managed within the HMA and ACEC. Recreation use could increase, which may cause additional disturbance to the wild horses.

Alternatives B and E

The ACEC designation would be revoked and management of this area would be either directed by the WSA IMP or the same as the adjacent areas that have no special designation.

Proposed RMP and Alternative C

The designation of the ACEC would continue, and the size would remain at 31,725 acres. This alternative is similar to Alternative A except that it is more restrictive. There would be no open areas for OHV and mechanized vehicle use that would result in less disruption to wild horses and livestock. The area would remain open to livestock grazing so that wild horses and livestock would still compete for forage resources. Recreation use could increase, which may cause additional disturbance to wild horses.

Little Blitzen RNA/ACEC

Alternative A

The RNA/ACEC designation and current management would continue and the size of the RNA/ACEC would remain at 2,530 acres. Since this area is entirely within the Steens Mountain Wilderness and in close proximity to the Steens Loop Road, recreation use could increase in the more accessible areas. Increased recreation use could affect some of the plant communities and rare plants in the subalpine areas.

Alternatives B and E

The RNA/ACEC designation would be revoked. The area would be managed as wilderness under the Wilderness Act, which would provide specific protection for relevant and important values.

Proposed RMP and Alternative C

The area would continue to be designated as an RNA/ACEC covering 2,255 acres. The RNA/ACEC boundary would stop at the Steens Loop Road, reducing the size of the RNA/ACEC by 275 acres. The effects of recreation use in the RNA/ACEC would be the same as under Alternative A.

Little Wildhorse Lake RNA/ACEC

Proposed RMP and Alternatives A and C

The RNA/ACEC would continue to be designated, and current management would continue. The size of the RNA/ACEC would remain at 241 acres. The area is completely within the Steens Mountain Wilderness, so that designation may draw more visitors to the RNA/ACEC. The relevant and important values could be affected by recreation use if dispersed use increases in and around the lake.

Alternatives B and E

The RNA/ACEC designation would be revoked. The area would be managed as part of the Steens Mountain Wilderness under the Wilderness Act, which provides protection to the relevant and important values. The area could still be affected by an increase in dispersed recreation.

Long Draw RNA/ACEC

Alternative A

The RNA/ACEC designation and current management would continue, and the size of the RNA/ACEC would remain at 441 acres. Since the RNA/ACEC is entirely within the Hawk Mountain and Rincon WSAs, the area would be managed according to the WSA IMP. Livestock grazing would continue under the direction of an AMP. The season of use specified in the AMP is beneficial to the relevant and important values associated with this RNA/ACEC. The area is open to claim staking for locatable minerals, but any exploration or development would be limited by the WSA IMP, including the nonimpairment criteria.

Alternatives B and E

The RNA/ACEC designation would be revoked, and the area would be managed under the WSA IMP. Grazing would have no effect on relevant and important values in Alternative B, but could have an effect in Alternative E by trampling and removal of vegetation.

Alternative C

The RNA/ACEC would continue to be designated and managed, and the size would be 441 acres. The effects from this alternative would be similar to Alternative A. The result of the stricter management actions would be increased protection of the special plant community and the other natural resources within the RNA/ACEC.

Proposed RMP

The size of the RNA/ACEC and the effects of management actions would be the same as Alternative A.

Mickey Basin RNA/ACEC

Alternative A

Current designation and management would continue, and the size of the RNA/ACEC would remain at 560 acres. Since the RNA/ACEC is entirely within the East Alvord WSA, the area is managed according to the WSA IMP. Livestock grazing during the fall and winter would continue outside and potentially inside the existing exclosure. Grazing during the dormant season could have a beneficial effect on the winterfat plants and the associated herbaceous plants growing in the RNA/ACEC unless the grazing use is concentrated. Year long wild horse use would continue in the HMA, possibly causing some injury to winterfat plants if the horses are concentrated.

Alternatives B and E

The RNA/ACEC designation would be revoked under these alternatives, and the area would be managed under the WSA IMP. Although the area would remain under restrictive management protocol, the management would not provide specific protection to the winterfat plant community.

Proposed RMP and Alternative C

The effects from this alternative would be similar to Alternative A except that the fenced portion of the RNA/ACEC would be excluded from grazing. The winterfat within the fenced area would be protected from grazing by livestock and wild horses, but that portion of the ACEC outside the fence could be damaged if the use was concentrated.

Pickett Rim ACEC

Alternative A

Current designation and management would continue, and the size of the ACEC would remain at 3,941 acres. The area is open to exploration and extraction of leasable, locatable, and salable minerals, which could affect nesting raptors if plans of operations are carried out. Livestock grazing in the ACEC would have little or no effect on the relevant and important values.

Proposed RMP and Alternatives B and E

The RNA/ACEC designation would be revoked under these alternatives. Under Alternative B, the designation of the ACEC would not be necessary due to protection provided by the removal of commodity production. Under Alternative E, the designation would not be made because it could interfere with additional commodity production. Under the Proposed RMP, the designation would be revoked because the area does not currently meet the relevant and importance criteria due to the lack of nesting raptors. Management of the Pickett Rim area would be the same as that prescribed for the adjacent area outside the ACEC. If there are still some raptor nesting areas on Pickett Rim, they would still receive protection from potential activities on public land.

Alternative C

The existing ACEC designation and boundaries would be retained. All mineral exploration and extraction activities would be prohibited, resulting in reduced options for development and increased protection for the birds of prey and their habitat. The effects of grazing would be the same as Alternative A.

Pueblo Foothills RNA/ACEC

Alternative A

Current designation and management would continue, and the size of the RNA/ACEC would remain at 2,503 acres. Since the RNA/ACEC is entirely within the Pueblo Mountain WSA, the area would be managed according to the WSA IMP. Livestock grazing would continue, which could affect relevant and important values in the more accessible areas. The area is open to claim staking for locatable minerals, but any exploration or development would be limited by the WSA IMP, including the nonimpairment criteria. If the area is released from WSA status and subjected to disturbance under a plan of operations, much of the key vegetation associated with this RNA/ACEC could be affected. Recreation use in the form of hunting and camping could affect vegetation in the more easily accessible areas.

Alternatives B and E

The RNA/ACEC designation would be revoked under these alternatives. The area would be managed according to the WSA IMP.

Alternative C

The RNA/ACEC would remain designated, but would be reduced in size by 79 acres to a total of 2,255 acres. The effects of livestock grazing and recreation use in the RNA/ACEC would be similar to Alternative A. The elimination of most of the commodity uses would provide for increased protection of the special plant communities, special status plants, and other natural resources.

Proposed RMP

The RNA/ACEC would remain designated, but would be reduced in size by 79 acres and total 2,255 acres. The effects of livestock grazing, limited exploration for locatable minerals, and recreation use would be the same as in Alternative A. The protection afforded the RNA/ACEC under this alternative would be similar to Alternative A, but not as protective as Alternative C.

Rooster Comb RNA/ACEC

Alternative A

The current RNA/ACEC designation and management would continue, and the size of the RNA/ACEC would remain at 716 acres. Since the RNA/ACEC is within the Steens Mountain Wilderness, it would continue to be managed according to the Wilderness Act. Increased recreation use could occur within the RNA/ACEC, especially along the Little Blitzen River and the Steens Loop Road in the Rooster Comb area. Dispersed hiking and camping could affect relevant and important values in some areas by disturbing ground and burning wood for campfires.

Alternatives B and E

The RNA/ACEC designation would be revoked under these alternatives, and the area would be managed under the provisions of the Wilderness Act.

Proposed RMP and Alternative C

The current RNA/ACEC designation would continue, with 33 acres eliminated on the south side of the Steens Loop Road. The remaining 683 acres would be managed in accordance with the Wilderness Act. The effects of increased recreation use on the RNA/ACEC would be the same as under Alternative A.

South Fork Willow Creek RNA/ACEC

Alternative A

The current RNA/ACEC designation and management would continue, and the size of the RNA/ACEC would remain at 231 acres. Since the RNA/ACEC is within the Steens Mountain Wilderness, it would continue to be managed according to the Wilderness Act. The effects of increased recreation use in the area of the East Rim Overlook could cause some trampling of the vegetation, including special status plant species. Most of the RNA/ACEC is inaccessible for recreation.

Alternatives B and E

The RNA/ACEC designation would be revoked under these alternatives, and the area would be managed under the provisions of the Wilderness Act.

Proposed RMP and Alternative C

The current RNA/ACEC designation would continue, with 45 acres eliminated in the area of the East Rim Viewpoint. The remaining 186 acres would be managed in accordance with the provisions of the Wilderness Act. The effects of increased recreation use on this area would be minimal because the East Rim Overlook would be eliminated from the RNA/ACEC.

Steens Mountain ACEC

Alternative A

The designation and current management would continue, and the size of the ACEC would remain at 57,501 acres. The ACEC is contained within a large part of the Steens Mountain Wilderness as well as some areas of WSA and non-WSA. Livestock grazing in the ACEC would continue to be a major activity in the Alvord and Mann Lake foothills, as well as around the head of McCoy Creek. The livestock grazing around the head of McCoy Creek could affect the scenic quality of the subalpine areas, especially near well-traveled areas such as the Steens Loop Road and the Kiger Overlook. Grazing in the Alvord and Mann Lake foothills would be less apparent because of the distance from major roads. Increased recreation use on Steens Mountain may affect ACEC scenic qualities in more traveled areas such as roads and viewpoints. Vegetation manipulation projects planned for the lower foothills on the east side of Steens Mountain could affect the scenic quality of that area as well as the view from the mountain top.

Proposed RMP and Alternatives B and E

The RNA/ACEC designation would be revoked under these alternatives. The area would be managed under the provisions of the Wilderness Act, the WSA IMP, and in accordance with the adjacent lands.

Alternative C

The existing ACEC designation and boundaries would be retained. The effects of management actions would be similar to Alternative A, except that the entire ACEC would be managed as VRM Class I. New ROWs and other realty use authorizations would be excluded except for access needs to nonpublic property.

Tum Tum Lake RNA/ACEC

Alternative A

The designation and current management would continue, and the size of the RNA/ACEC would remain at 2,064 acres. Livestock grazing would continue, which could affect the three special status plants or the other relevant and important values if use is concentrated around the lake. The area would be open to locatable minerals under a plan of operations, open to leasable minerals under standard leasing stipulations, and closed to salable minerals. Effects of energy and minerals activity would be mitigated by site specific measures such as locating the access route away from special status plants and requiring a reclamation bond. Mineral exploration and development are unlikely due to lack of apparent mineralized outcrops, lack of high potential for vein gold-quartz mineral deposits, and low potential for leasable minerals. Extraction of minerals could result in landforms that are not conducive to the restoration of plant community structure and habitat for special status plant species. Recreation effects would be minimal, since use is not expected to increase significantly in this area.

Alternatives B and E

The RNA/ACEC designation would be revoked under these alternatives. The area would be managed consistent with the management prescriptions on adjacent lands.

Alternative C

The RNA/ACEC designation would be retained. A total of 375 acres would be eliminated due to unmanageability and surface disturbance, making the size of the RNA/ACEC 1,689 acres. The area would be closed to livestock grazing, realty use authorizations, and all locatable, leasable, and salable energy and mineral exploration and development activities. Those restrictions along with managing the area as a VRM Class II area would result in the highest level of protection for the unique plant communities, special status plants, and special status fish species.

Proposed RMP

The RNA/ACEC designation would be retained, and the size would be reduced by 375 acres to 1,689 acres. The area would be closed to livestock grazing and salable mineral removal, but would remain open to leasable and locatable mineral exploration and development. A plan of operations would be required for any locatable minerals activity in the RNA/ACEC, however, extensive mining activity could affect the area's relevant and important values. Effects of energy and minerals activity would be mitigated by site specific measures such as locating the access route away from special status plants, and requiring a reclamation bond. Mineral exploration and development are unlikely due to lack of apparent mineralized outcrops, lack of high potential for vein gold-quartz mineral deposits, and low potential for leasable minerals. Extraction of minerals could result in landforms that are not conducive to the restoration of plant community structure and habitat for special status plant species. This alternative would not afford the RNA/ACEC as much protection as Alternative C, but it would provide more protection than Alternative A.

Proposed Big Alvord Creek RNA/ACEC

Alternative A

The RNA/ACEC would not be designated. Since the area is within the Steens Mountain Wilderness, management would continue under the provisions of the Wilderness Act.

Alternatives B and E

The RNA/ACEC would not be designated. Protection would not be necessary under Alternative B because all permitted discretionary uses would be excluded. Under Alternative E, commodity production would override protection for relevant and important values for ACECs.

Proposed RMP and Alternative C

The proposed RNA/ACEC would be designated as the Big Alvord Creek RNA/ACEC and would encompass 1,676 acres. The RNA/ACEC would be entirely within the Steens Mountain Wilderness so the management would be the same as that outlined in Alternative A. The area is so remote that an increase in recreation use in the Planning Area would probably not affect the relevant and important values associated with this RNA/ACEC.

Proposed Catlow Redband Trout ACEC

Alternative A

Current management would continue, and the ACEC would not be designated. The portion of the proposed ACEC within the Steens Mountain Wilderness would be managed under the provisions of the Wilderness Act while 40 acres outside the wilderness would be managed the same as prescribed for other nondesignated lands within the CMPA.

Proposed RMP and Alternatives B and E

The ACEC would not be designated. Protection would not be necessary and Alternative B because all permitted discretionary uses would be excluded. Under Alternative E, commodity production would override protection for relevant and important values for ACECs. Under the Proposed RMP, wilderness designation would protect the relevant and important values.

Alternative C

The proposed ACEC would be designated as the Catlow Redband Trout ACEC covering 6,800 acres. The entire ACEC would be within the Steens Mountain Wilderness except for 40 acres at the mouth of Home Creek. Livestock grazing would continue throughout the ACEC, which could affect riparian areas along Home Creek where redband trout are located. Recreation, primarily in the form of angling in Home Creek, could affect numbers of redband trout depending on the amount of use.

Proposed East Fork Trout Creek RNA/ACEC

Alternative A

Current management would continue, and the RNA/ACEC would not be designated. The site is in the Mahogany Ridge WSA, so management would continue in accordance with the WSA IMP until such time as Congress designates the area as wilderness or releases it from WSA status.

Alternatives B and E

The proposed RNA/ACEC would not be designated. Protection would not be necessary under Alternative B because all permitted discretionary uses would be excluded. Under Alternative E, commodity production would override protection for relevant and important values for ACECs.

Alternative C

The proposed RNA/ACEC would be designated as the East Fork Trout Creek RNA/ACEC, covering 361 acres. Increased recreation use in the RNA/ACEC could affect the relevant and important vegetation by its proximity to a dispersed campsite. Management restrictions applied to other resources would limit disturbance and provide protection for the special plant communities.

Proposed RMP

The proposed RNA/ACEC would be designated as the East Fork Trout Creek RNA/ACEC, covering 361 acres. The area would be open to livestock grazing for a limited time in September, which should not affect the key vegetation types within the RNA/ACEC. The area is open to claim staking for locatable minerals, but any exploration or development would be limited by the WSA IMP, including the nonimpairment criteria.

Proposed Fir Groves ACEC

Alternative A

Current management would continue and the proposed ACEC would not be designated. Existing management prescriptions would apply to the area.

Alternatives B and E

The proposed ACEC would not be designated. Protection would not be necessary under Alternative B because all permitted discretionary uses would be excluded. Under Alternative E, commodity production would override protection for relevant and important values for ACECs.

Alternative C

The proposed ACEC would be designated as the Fir Groves ACEC, covering 477 acres. Management restrictions would be imposed, providing maximum protection for the grand fir stand and associated natural resources.

Proposed RMP

The proposed ACEC would be designated as the Fir Groves ACEC, covering 477 acres. Livestock grazing would be authorized at a similar level as the existing situation, which should not affect the relevant and important values. Management under this alternative would not be as restrictive as Alternative C, but it would still provide protection for the grand fir stand.

Proposed Mickey Hot Springs ACEC

Alternative A

Current management would continue, and the proposed ACEC would not be designated. A portion of the site is in the East Alvord WSA and would be managed in accordance with the WSA IMP until such time as Congress designates the WSA as wilderness or releases it from WSA status. The rest of the area would continue to be managed as prescribed for non-WSA lands in the AMU.

Alternatives B and C

The proposed Mickey Hot Springs ACEC would be designated. The size of the ACEC would be 42 acres, or all of the land within the fenced exclosure. Under these alternatives there would be minimal discretionary uses and human health and safety would be maximized.

Proposed RMP and Alternative E

The ACEC designation and size would be the same as Alternatives B and C. Opportunities for development would still exist but not to the extent that the relevant and important values would be affected.

Proposed Serrano Point RNA/ACEC

Alternative A

Current management would continue, and the proposed RNA/ACEC would not be designated. Existing management prescriptions would apply to the area.

Alternatives B and E

The RNA/ACEC would not be designated. Protection would not be necessary under Alternative B because all permitted discretionary uses would be excluded. Under Alternative E, commodity production would override protection for relevant and important values for ACECs.

Alternative C

The proposed RNA/ACEC would be designated as the Serrano Point RNA/ACEC, covering 679 acres. Most of the discretionary uses would be excluded. The effects would be minimal use and disturbance and maximum protection of the special plant communities and associated resources.

Proposed RMP

The proposed RNA/ACEC would be designated as the Serrano Point RNA/ACEC, covering 679 acres. Livestock grazing would be permitted during the winter at the same level as the existing situation, but no additional effects would be expected. Other opportunities for development would exist but not to the extent that relevant and important values would be affected.

4.21.4 Summary of Effects

Under Alternative A, no new ACECs would be designated and existing ones, totaling 132,112 acres, would be retained. Under Alternatives B and E, all existing ACEC designations would be revoked and one new ACEC, Mickey Hot Springs, would be designated for a total of 42 acres. Management under Alternative B for the areas where ACEC designations were revoked would be the same as that applied across the Planning Area. Under Alternative C, all existing ACECs would be retained and six proposed ACECs would be designated for a total of 143,426 acres. Under the Proposed RMP, 12 of the existing ACECs would be retained while the designation on three of the existing ACECs (Alvord Peak, Pickett Rim and Steens Mountain) would be revoked. Five new ACECs would be designated for a total of 66,870 acres. The various ACEC designations and acreages for each of the Alternatives are listed in Table 2.21.1.

4.21.5 Cumulative Effects

It is likely that recreation and other uses would continue to increase in the Planning Area in the reasonably foreseeable future. Recreation, OHV and mechanized vehicle use, commodity use, and weed and fire management activities could affect the important values within ACECs. The major cumulative effects to ACECs could be the loss of relevant and important values such as special status species, unique plant communities, critical wildlife habitat, and cultural values, or conversion to marginal plant communities.

Cumulative effects would be the greatest under Alternative E, which would revoke all existing ACEC designations while promoting recreation and commodity use and allowing for the greatest amount of access. The Proposed RMP and Alternatives A and C would have fewer cumulative effects on ACECs than Alternative E. Alternative B would have the fewest cumulative effects because it would implement the greatest restrictions on recreation, OHV and mechanized vehicle use, and commodity use throughout the Planning Area. Activities implemented on adjacent USFS, USFWS, state, and private lands could also have cumulative effects on ACECs.

The FLPMA mandates special management attention to protect ACECs and prevent irreparable damage to important values, resources, systems or processes, or to protect life and safety from natural hazards. Adherence to this mandate, minimizes any cumulative effects. In addition, if Congress designates as wilderness those WSAs that overlap ACECs, the values of the ACECs would be improved and would receive increased protection.

4.22 Wilderness

4.22.1 Goals and Objectives

4.22.1.1 Goal 1 - Maintain or improve the wilderness values and the special features of the Steens Mountain Wilderness under a principle of nondegradation and in a manner that would leave these values unimpaired for future use and enjoyment as wilderness, while providing opportunities for public use, enjoyment, and understanding.

Objective. Manage public visitation in the wilderness to provide outstanding opportunities for solitude, primitive and unconfined recreation, naturalness, and other features including ecological, geological, scientific, educational, scenic and historic.

4.22.1.2 Goal 2 - Manage the wilderness in such a manner that the landscape is essentially unaffected by human manipulation and influences, while allowing natural processes to dominate.

Objective. Accomplish necessary projects and activities occurring in wilderness with the minimum tool or requirement needed to achieve a desired result. The chosen tool, equipment, or structure would be the one that least degrades wilderness values temporarily or permanently.

4.22.1.3 Goal 3 - Manage nonconforming uses of the Steens Mountain Wilderness, allowed under the Wilderness Act and the Steens Act, to have the minimum effect on wilderness values.

Objective 1. Manage livestock grazing in wilderness under the stipulations of the Congressional Grazing Guidelines (HR 101-405 Appendix A).

Objective 2. Provide for the level and type of commercial services necessary to enable the public to use, access, enjoy and understand the recreational and other values of wilderness, emphasizing opportunities for primitive and unconfined types of recreation, inspiration, and solitude.

Objective 3. Allow for a level of reasonable access for the use and enjoyment of private inholdings while protecting the wilderness values.

Objective 4. Manage to prevent and exclude motor vehicle and mechanical transport intrusions into the wilderness either on closed roads or off of roads, except where authorized by permitted use or during emergencies.

4.22.2 Assumptions

The Steens Act established the Steens Mountain Wilderness consisting of 170,084 acres of public lands. Subject to valid existing rights, the BLM administers the Steens Mountain Wilderness in accordance with the provisions of the Wilderness Act, BLM Wilderness Regulations (43 CFR 6300), BLM Manuals 8560 and H-8560-1, BLM Manual 8561, House Report 101-405-Appendices A and B, and the Steens Act.

Specific wilderness management provisions are included in Section 202 of the Steens Act and are discussed in Chapter 3.

Section 112(e)(1) of the Steens Act states that "The Secretary would provide reasonable access to nonfederally owned lands or interests in land within the boundaries of the Cooperative Management and Protection Area and the Wilderness Area to provide the owner of the land or interest the reasonable use thereof."

Wilderness boundary setbacks along existing roads are described in Section 3.22 of this document.

Except for the designated No Livestock Grazing Area, grazing of livestock will continue and will be administered in accordance with section 4(d)(4) of the Wilderness Act, the Steens Act, and the guidelines set forth in Appendix A of House Report 101-405 of the 101st Congress.

According to the Steens Act and the Wilderness Act, no locatable mineral exploration and development activities are authorized within the Steens Mountain Wilderness.

Except as specifically stated in the Wilderness Act, the following activities are currently prohibited in wilderness at 43 CFR 6302.20:

- Operate a commercial enterprise;
- Build temporary or permanent roads;
- Build aircraft landing strips, heliports, or helispots;
- Use motorized equipment; or motor vehicles, motorboats, or other forms of mechanical transport;
- Land aircraft, or drop or pick up any material, supplies or person by means of aircraft, including a helicopter, hangglider, hot air balloon, parasail, or parachute;

- Build, install, or erect structures or installations, including transmission lines, motels, vacation homes, sheds, stores, resorts, organization camps, hunting and fishing lodges, electronic installations, and similar structures, other than tents, tarpaulins, temporary corrals, and similar devices for overnight camping;
- Cut trees;
- Enter or use wilderness areas without authorization, where the BLM requires authorization;
- Engage or participate in competitive use, including those activities involving physical endurance of a person or animal, foot races, watercraft races, survival exercises, war games, or other similar exercises; or
- Violate any BLM regulation, authorization, or order.

The Steens Act mandates that a Wilderness Plan be developed for the Steens Mountain Wilderness. A combined Steens Mountain Wilderness and WSRs Management Plan is included in the Proposed RMP/FEIS as Appendix U. All wilderness management actions are analyzed under each alternative in the Proposed RMP/FEIS. Public comments on the Steens Mountain Wilderness and WSRs Management Plan will be accepted for 30 days following the release of the Proposed RMP/FEIS. The BLM would then select the Proposed Wilderness and WSRs Management Plan from the Proposed RMP/FEIS and would develop management protocols for the final Wilderness and WSRs Management Plan. The completion of the Steens RMP ROD would result in the final Steens Mountain Wilderness and WSRs Management Plan. Two years of monitoring data would be used to establish baseline conditions in the wilderness.

4.22.3 Analysis of Alternatives

4.22.3.1 Effects Common to All Alternatives

Indirect Effects

Potential indirect effects from social and economic values, livestock grazing, wildland fire management, realty use authorizations and ROWs, and recreation may occur under all of the alternatives. However, effects would be minimized due to the restrictions mandated by the Wilderness Act.

General indirect effects from the management actions of other resources/uses have been summarized in this introduction. Specific indirect effects are discussed under each alternative.

Visual Resources. Designation of the Steens Mountain Wilderness as VRM Class I would limit any management actions to those that do not alter the characteristic landscape and that do not attract attention.

Social and Economic Values. Social and economic values, which promote use and visitation as emphasized in Alternative E and are included in Proposed RMP and Alternative A, would lead to increased use and would affect trails, campsite conditions, and solitude. This may affect recreational use and enjoyment of some areas. Restrictions on visitation under Alternatives B and C would potentially lead to an overall decline in visitation or to increased use and degradation of fewer areas.

Wild Horses and Burros. Wild horse management includes gathering activities, which may create impacts to the wilderness that would be considered following MRDG and gather specific NEPA analysis. Effects may include aircraft operations and trap sites within wilderness as determined under MRDG.

Lands and Realty. Land use and realty management has minimal potential to affect wilderness because activities such as land acquisition, exchange, and disposal; use authorizations and withdrawals; and construction or location of roads for legal access would be constrained by the Wilderness Act. All of the alternatives for land use and realty specify that the Steens Mountain Wilderness would be Zone 1A, which calls for retention of the lands within the Steens Mountain Wilderness. Therefore, any potential effects from lands and realty would be similar across all of the alternatives.

4.22.3.2 Alternative A

Direct Effects

The entire wilderness would be managed as a single unit without Management Areas. Management under this alternative would not restrict party size, dogs, human waste disposal, camping, or recreational stock use. These activities and uses would affect the condition of the trails, campsites and surrounding areas, and affect wilderness values such as naturalness and opportunities for solitude. Dogs and recreational stock could cause conflicts with wildlife, cattle, other visitors, or

other uses. Minimal maintenance of trails and closures of others may protect and restore natural resources within the wilderness; nevertheless, this may also lead to trail damage and increased use and degradation of a few more popular or more visible trails. Campfires would not be restricted, which may increase wildland fire potential. Unrestricted campfire use may also lead to a proliferation of campfires, rock fire rings, and damage to campsite areas such as expansion of the barren ground area, increases in user created trails, and damage to vegetation. Monitoring of the Steens Mountain Wilderness would be conducted and management options would be implemented to maintain or restore desired conditions that would be determined after a total of five years of gathering baseline information and continued monitoring. This would promote protection of the Steens Mountain Wilderness and wilderness values.

No new recreational facilities would be constructed in the wilderness or at trailheads. Fire suppression and weed management would be conducted using appropriate management response and a full range of equipment following a MRDG analysis. Historic structures would deteriorate through natural processes and maintenance would only be conducted on Nye Cabin to correct hazards. Effects to the wilderness from these activities would be limited, though allowing structures to deteriorate would lead to increased naturalness. There may be some unavoidable effects to naturalness or primitive recreational opportunities from weed eradication and fire suppression, but these effects would be temporary.

Livestock permittee grazing access would be managed in keeping with the Motorized Access for Grazing Operations in Wilderness EA and Decision Record.

New proposals would be considered for commercial services (e.g. outfitters), which could lead to increased use of the wilderness and could affect trail and campsite conditions as well as solitude and naturalness. The potential effects would be increased because there would be no restrictions on party size or recreational stock use.

Inholder access would be managed in accordance with the decision record of the Access for Inholdings in the Steens Mountain Wilderness EA/Decision Record.

Indirect Effects

Woodlands. The increased likelihood of fires due to increased tree density and cover could result in resource damage in burned areas. This could reduce the wilderness values.

Noxious Weeds. Treatments of large areas of noxious weed infestations could result in areas of limited or no vegetation, which in combination with recreational use could result in natural resource damage that reduces the wilderness values in the short term. In the long term, treatment of weeds would protect and restore naturalness.

Wild Horses and Burros. Wild horse use would continue under current management and no new or additional effects to the Steens Mountain Wilderness or to wilderness values would be anticipated. Effects of wild horse use include resource degradation and possible conflicts with recreationists.

Grazing Management. Livestock grazing would continue under current management objectives and no new or additional effects to Steens Mountain Wilderness or to wilderness values would be anticipated. Effects of livestock grazing include resource degradation and possible conflicts with recreationists.

Wildland Fire Management. Suppression of all wildland fires would maximize protection of areas with important resource values such as the Steens Mountain Wilderness; however, continued suppression of all wildland fires would allow fuels to accumulate throughout the Planning Area and wilderness values could be affected by increased fire potential due to a loss of natural processes. Native and desirable introduced plant species would be utilized in fire rehabilitation; this may also affect wilderness values by changing the quality of naturalness.

Off-Highway Vehicles. OHV and mechanized vehicles would be allowed on several roads that are bounded on one or both sides by the Steens Mountain Wilderness. Wilderness values of solitude and primitive and unconfined recreation could be affected by the presence and sounds of OHVs and mechanized vehicles on these roads.

Recreation. Continuing current recreation management would not directly increase use, but use of the Steens Mountain Wilderness would be expected to increase as the CMPA receives more public notice. This increased use has the potential to affect wilderness values and conditions. Providing trailhead parking near the mouth of Wildhorse Canyon would increase use in that portion of the wilderness and could affect wilderness values.

4.22.3.3 Alternative B

Direct Effects

The Steens Mountain Wilderness would be classified into two Management Areas: the Gorges Management Area and the Uplands Management Area. Management under this alternative would restrict party size (six people and nine head of stock); dogs would not be allowed; human waste and toilet paper would be required to be packed out. Effects from these activities would lead to increased naturalness due to restrictions that would be imposed. Camping would not be allowed at Wildhorse Lake or in any RNA. Camping would only be allowed at existing established campsites. However, a three day length-of-stay would limit visitation and use at any one time, thus promoting solitude and naturalness and minimizing effects to campsites and trails. Recreational stock use would be allowed at Wildhorse Lake or in any RNA on a limited basis, so any related effects to the wilderness would be minimized.

No trail maintenance or reclamation would be implemented unless a threat is posed to life, property, or wilderness values. This may promote protection and rehabilitation of natural resources within the wilderness; nevertheless, little or no maintenance could lead to increased degradation of the trails and adjacent resources. Campfires would not be allowed, leading to an increase in naturalness and possibly decreasing wildland fire potential. However, wildland fire potential would be present even when campfires are not be allowed. Monitoring of the Steens Mountain Wilderness would be conducted and management options would be implemented to maintain or restore desired conditions. This would promote protection of the Steens Mountain Wilderness and wilderness values.

No new recreational facilities would be constructed in the wilderness or at trailheads. Historic structures would deteriorate through natural processes and no maintenance would be conducted on Nye Cabin. Wildland fire would be allowed to burn where life or property are not at risk. No motorized equipment would be used to implement weed control measures. There may be some unavoidable effects to naturalness or primitive recreational opportunities from weed eradication and fire suppression, but these effects would be temporary and would provide long-term protection of wilderness characteristics.

No livestock grazing would be allowed anywhere in the Planning Area, so there would be no need for livestock operators to use motorized or mechanized equipment in the Steens Mountain Wilderness. Grazing by recreational stock would be allowed.

No motorized or mechanized transport would be allowed for access to private inholdings thereby having little effects on wilderness characteristics and values such as solitude.

No commercial services (e.g. outfitters) would be allowed under this alternative, thereby limiting certain types of access and use. It would also decrease wilderness visitation and affect trail and campsite conditions as well as solitude and naturalness.

Indirect Effects

Woodlands. The increased likelihood of fires due to increased tree density and cover could result in resource damage in burned areas. This could reduce the wilderness values.

Noxious Weeds. Treatments of large areas of noxious weed infestations could result in areas of limited or no vegetation, which in combination with recreational use could result in natural resource damage that reduces the wilderness values in the short term. In the long term, treatment of weeds would protect and restore naturalness.

Wild Horses. Wild horse use would be conducted under revised management and no new or additional effects to the Steens Mountain Wilderness or to wilderness values would be anticipated. Effects of wild horse use include resource degradation and possible conflicts with recreationists.

Grazing Management. No livestock grazing would be allowed in the Planning Area. Some range improvement projects in the Steens Mountain Wilderness would be removed and rehabilitated, if not needed for wildlife or wild horse management purposes.

Wildland Fire Management. Fires that directly threaten public safety, private property, or areas of significant resource values would be suppressed. Wilderness acres burned annually could be greater than current levels. However, fire

rehabilitation actions could be greater because of the reduced suppression activity and potentially larger fire size. Only native plant species would be utilized for rehabilitation purposes; burn areas may be allowed to recover naturally, which would not affect wilderness values.

Off-Highway Vehicles. OHV and mechanized vehicles would not be allowed on eight roads that are bounded on one or both sides by the Steens Mountain Wilderness. Wilderness values of solitude and primitive and unconfined recreation would be enhanced by the absence of OHVs and mechanized vehicles from these roads. However, wilderness would be shifted to the east, with wilderness values affected near each of the access points.

Recreation. Closure of the Steens Loop Road from the Kiger Overlook Road to west of Blitzen Crossing would alter recreation use patterns in the Steens Mountain Wilderness. Use of Wildhorse Lake, Big and Little Indian, and the Ankle Creek basin would decrease because of the increased hiking distance. Use of the mainstem Blitzen River (from Page Springs to Blitzen Crossing), Little Blitzen, and Kiger Gorge would be expected to increase because of the proximity of these areas to open roads. Recreation use would also increase along the East Steens Road and on adjacent developed ad dispersed use areas. This use pattern change would result in corresponding changes in trail and campsite conditions and effects to wilderness values.

4.22.3.4 Alternative C

Direct Effects

The Steens Mountain Wilderness would be classified into two Management Areas; the Gorges Management Area and the Uplands Management Area. Management under this alternative would restrict party size (nine people and 12 head of stock); dogs would be allowed but must be under control; catholes would be required for human waste and toilet paper would have to be packed out. No camping would be allowed at Wildhorse Lake or at any RNA. This alternative would have more potential effects than Alternative B; however, the restrictions under this alternative result in fewer effects to and greater protection of the wilderness than under Alternative A. A five day length-of-stay would have similar effects as Alternative B. Recreational stock use at Wildhorse Lake or in any RNA would be the same as Alternative B; therefore, the effects would be the same.

Minimal trail maintenance would be conducted on Little Blitzen, Big Indian, and Wildhorse Lake trails but no new trails would be constructed. Inappropriate user trails as well as selected roads would be reclaimed. Other closed roads would be left for use as informal equestrian and hiking routes. These activities would promote protection and rehabilitation of natural resources and wilderness values within the wilderness while providing greater access than Alternative B. Monitoring of the Steens Mountain Wilderness would be conducted and management options would be implemented to maintain or restore desired conditions. This would promote protection of the Steens Mountain Wilderness and wilderness values.

No new recreational facilities would be constructed in the wilderness. Facilities could be constructed at trailheads if resource damage or hazards exist. All other facilities, except historic structures and those used for livestock grazing, would be removed. Historic structures would deteriorate through natural processes and limited maintenance would be conducted on Nye Cabin to correct hazards. The Page Springs weir would be removed. Wildland fire would be allowed to play its natural role. Prescribed fire would be utilized and noxious weed control would be conducted using nonmotorized equipment after a MDRG analysis. Effects to the wilderness from these activities would be greater than those under Alternative B and may include additional disturbance to the wilderness, affecting wilderness values such as solitude, naturalness, and primitive recreational opportunities. Nevertheless, these effects would be temporary and would provide long-term protection of these wilderness characteristics while promoting natural processes. In the long term, wilderness values and wilderness experiences may be improved.

Livestock permittee grazing access would have the same effects as Alternative A.

Commercial services (e.g. outfitters) would be allowed at current levels, but no permanent caches would be allowed. Opportunities for access and use would be greater than under Alternative B but less than the other alternatives, which would consider new proposals. Resources and wilderness values would be protected and natural processes would be promoted, while continued use and access would be allowed.

Inholder access would have the same effects as Alternative A.

Indirect Effects

Woodlands. The reduced likelihood of fires due to the decrease in tree density and cover could minimize the potential for resource damage in burned areas.

Noxious Weeds. Effects from noxious weeds would be similar to Alternative B.

Wild Horses. Effects from wild horses would be similar to Alternative B.

Grazing Management. Livestock grazing access in the Steens Mountain Wilderness would be limited because no mechanized or motorized equipment would be allowed for grazing operations. Also, no mechanized or motorized use would be allowed for inholder access. Although this may be a hardship on livestock operators, the trend of effects to the Steens Mountain Wilderness would be toward increased naturalness.

Wildland Fire Management. Effects to the Steens Mountain Wilderness from wildland fire management would be similar to Alternative B.

Off-Highway Vehicles. OHV and mechanized vehicles would not be allowed on three roads that are bounded on one or both sides by the Steens Mountain Wilderness. Wilderness values of solitude and primitive and unconfined recreation would be improved by the absence of OHVs and mechanized vehicles from these roads.

Recreation. Closure of the Rooster Comb section of the Steens Loop Road and other roads would not affect recreation use patterns in the Steens Mountain Wilderness. Trail development, where needed to protect natural values, could slightly reduce use in the Steens Mountain Wilderness by providing alternate trails for hikers. Development of a trailhead facility for horse users would increase horse use in the wilderness with the associated effects. Development of a staging area adjacent to the Penland Road could increase use in that portion of the wilderness and could affect wilderness values and conditions.

4.22.3.5 Proposed RMP

Direct Effects

The Steens Mountain Wilderness would be classified into two Management Areas: the Gorges Management Area and the Uplands Management Area. Management actions could be initiated separately in each of the five Gorges as well as the Uplands Management Area. Management would restrict party size (12 people and 18 head of stock), with exceptions for historic permitted and Native American use. A 14-day stay limit would be recommended. Dogs would be allowed but must be under control. Catholes would be required for human waste and toilet paper would have to be packed out. Packing out of human waste may be required for certain permitted activities. No camping would be allowed in the Little Wildhorse RNA. Limited recreational stock use would be allowed at Wildhorse Lake. Overnight camping would be allowed at Wildhorse Lake but only at designated campsites, with no overnight recreational stock use allowed. Camping would be allowed in the Little Blitzen and Rooster Comb RNAs in historically used campsites. There would be no tying of recreational stock to trees overnight. Grazing of recreational stock would be allowed consistent with S&Gs for grazing management. Pack goats would have to be highlined or picketed. There would be more potential effects from this alternative than Alternatives B or C; however, the restrictions under this alternative would result in less effects to and greater protection of the Steens Mountain Wilderness than under Alternative A.

Minimal trail maintenance would be conducted on Little Blitzen, Big Indian, and Wildhorse Lake trails and new trails could possibly be constructed where appropriate to protect wilderness resources and values as use increases. Selected closed roads would be reclaimed and others would be left for use as equestrian and hiking routes. Inappropriate user-created trails would be reclaimed. These activities provide increased access over Alternatives A, B and C; nevertheless, as maintenance increases, effects to the wilderness and to wilderness values would increase. Monitoring of the Steens Mountain Wilderness would be conducted and management options would be implemented as needed to maintain or restore desired conditions. This would promote protection of the Steens Mountain Wilderness and wilderness values.

Historic structures could be maintained to preserve them. Nonconforming structures, except those used for livestock, wildlife, or wild horses could be removed or allowed to deteriorate. Wildland fire would be allowed to play its natural role. Prescribed fire could be utilized and noxious weed control could be conducted, if needed. Effects to the wilderness

from these activities would be similar to Alternative C and greater than those under Alternative B. Disturbance to the wilderness and effects to the wilderness values of solitude, naturalness, and primitive recreational opportunities could be expected. Nevertheless, these effects would be temporary and would provide long-term protection of these wilderness values while promoting a balance between resource protection and use.

Livestock grazing access would have the same effects as Alternative A.

New proposals for outfitters would be considered after preparing a needs assessment. Permanent caches would not be allowed or permitted for either the general public or outfitters and guides. Building, erecting, or installing any permanent or temporary structure would be prohibited except for immediate use while camping. Opportunities for access and use would be greater than under Alternatives B and C, but less than Alternative A.

Inholder access would have the same effects as Alternative A.

Motor vehicle and mechanical transport intrusions in the wilderness, except where authorized by permitted use or emergencies, would be prohibited. Wilderness values would be protected.

Indirect Effects

Woodlands. Effects from woodlands management would be similar to Alternative C.

Noxious Weeds. Treatments of large areas of noxious weed infestations could result in areas of limited or no vegetation, which in combination with recreational use could result in natural resource damage that reduces the wilderness values in the short term. In the long term, treatment of weeds would protect and restore naturalness.

Wild Horses. Wild horse use would be conducted under management similar to Alternative B and some new or additional effects to the Steens Mountain Wilderness or to wilderness values would be anticipated. Effects of wild horse use include potential for resource degradation and possible conflicts with recreationists.

Grazing Management. Livestock grazing would be similar to Alternative A, but with more emphasis on natural resources. The result of this management would be greater protection of the wilderness values and fewer user conflicts than under Alternative A.

Wildland Fire Management. Fire would be reintroduced into the ecosystem through prescribed fire and wildland fire use. Native and naturalized plants would be used for rehabilitation. These activities would result in the same effects to the Steens Mountain Wilderness as Alternative A.

Off-Highway Vehicles. OHV and mechanized vehicles would be allowed on several roads that are bounded on one or both sides by the Steens Mountain Wilderness. Wilderness values of solitude and primitive and unconfined recreation would be affected by the presence and sounds of OHVs and mechanized vehicles on these roads.

Recreation. Trail development, where needed to protect natural resources and for public health and safety, could increase use in the Steens Mountain Wilderness by providing alternate trails for hikers. Development of additional access point(s) to the wilderness could increase use near the access point(s) and could affect wilderness values.

4.22.3.6 Alternative E

Direct Effects

The entire Steens Mountain Wilderness would be managed as a single unit without Management Areas. Management would not restrict or limit party size and would not restrict dogs, human waste disposal, camping, or recreational stock use. These activities and uses would affect the condition of the trails, campsites, and surrounding areas. Wilderness values of naturalness and solitude would also be affected. In addition, a 14-day length-of-stay and self-registration would be only encouraged rather than required and could result in increased visitation and use at any one time, thus affecting solitude and causing additional primitive campsites to be created. Increased visitation and unrestricted use by dogs and recreational stock could cause conflicts with wildlife, cattle, visitors, or other uses.

Minimal trail maintenance would be conducted on Little Blitzen, Big Indian, and Wildhorse Lake trails and new trails would be constructed where appropriate as use increases. Selected closed roads would be reclaimed and others would

be left for use as informal equestrian and hiking routes. These activities would provide increased access over Alternatives A, B and C; nevertheless, as maintenance and construction increase, effects to wilderness and to wilderness values would increase. Monitoring of the Steens Mountain Wilderness would be conducted and management options would be implemented to maintain or restore desired conditions. Although monitoring and maintaining desired conditions would protect the Steens Mountain Wilderness and wilderness values, this alternative would have the greatest effects to the Steens Mountain Wilderness and wilderness values of all the alternatives. Wilderness degradation, and decreased solitude, naturalness, and primitive experiences would result.

Recreation facilities would be constructed at trailheads as needed to prevent resource damage. Historic structures would be maintained to preserve them. Nonconforming structures, except those used for livestock or wildlife, would be removed or allowed to deteriorate. Nye Cabin would be managed as a rental cabin. The Page Springs gauging weir would be removed. Fire suppression and weed management would be conducted using appropriate management response and a full range of equipment following a MRDG analysis. Effects to the wilderness from these activities would be greater than under all of the other alternatives. Permanent effects from increased facilities and access would affect the use levels and thus the values of solitude, primitive recreational opportunities, and naturalness. There may also be some unavoidable effects to naturalness or primitive recreational opportunities from weed eradication and fire suppression, but these effects would be temporary and would provide long-term protection of these wilderness characteristics.

Motorized or mechanized use would be allowed at historic levels for livestock permittee grazing access. The level of use allowed would be the greatest of the alternatives, and may result in resource degradation; decreased in solitude, naturalness, and primitive recreational opportunities; and conflicts with other uses.

Commercial activities would be managed the same as the Proposed RMP; therefore, the effects would be the same as the Proposed RMP.

Motorized or mechanized use would be allowed at historic or higher levels for inholder access. The level of use allowed would be the greatest of the alternatives and may result in resource degradation, decreased solitude, naturalness, and primitive recreational opportunities; and conflicts with other uses.

Indirect Effects

Woodlands. Effects from woodlands management would be similar to Alternative A.

Noxious Weeds. Effects from noxious weeds would be similar to the Proposed RMP.

Wild Horses. Effects from wild horses would be similar to the Proposed RMP.

Grazing Management. Effects from grazing management would be similar to the Proposed RMP.

Wildland Fire Management. Effects from wildland fire management would be similar to the Proposed RMP.

Off-Highway Vehicles. OHV and mechanized vehicles would be allowed on several roads that are bounded on one or both sides by the Steens Mountain Wilderness. Wilderness values of solitude and primitive and unconfined recreation would be affected by the presence and sounds of OHVs and mechanized vehicles on these roads.

Recreation. Expanding and establishing recreation sites to meet increasing demand would allow additional use in the Steens Mountain Wilderness. This increased use has the potential to affect wilderness values and conditions. Trail development could decrease use in the Steens Mountain Wilderness by providing alternate trails for hikers. Development of a staging area with horse support facilities adjacent to the Penland Road would increase use in that portion of the wilderness and could affect wilderness values.

Social and Economic Values. Social and economic values, which promote use and visitation are emphasized in Alternative E and are included in the Proposed RMP and Alternative A, would lead to increased use and would affect trails, campsite conditions, and solitude. This may affect recreational use and enjoyment of some areas. Restrictions on visitation under Alternatives B and C would potentially lead to an overall decline in visitation or to increased use and degradation of fewer areas.

4.22.4 Summary of Effects

Alternative B would provide the most protection of the Steens Mountain Wilderness and the wilderness values of naturalness, solitude, and primitive recreational opportunities. However, use and access would be very restricted and may affect a recreationist's ability to visit the wilderness. Livestock grazing is precluded under this alternative. Alternatives A and E would provide the highest level of access and use but would limit protection of the wilderness and may lead to a decrease in the wilderness values of naturalness and solitude. The Proposed RMP and Alternative C provide balanced management that would protect the wilderness while allowing reasonable levels of access and use.

4.22.5 Cumulative Effects

Prior to the implementation of the Steens Act, the area that is now the Steens Mountain Wilderness was used for a variety of activities, such as grazing and motor vehicle use on existing roads, that are now not permitted in all or part of the wilderness. Motor vehicle travel on existing roads by the general public is not permitted in wilderness. The effects from these now-curtailed uses would diminish over time and there would be a general improvement in the wilderness values under all alternatives.

Alternative A would result in continuing the slow process of overall improvement of wilderness values. Alternative B would protect wildness but would also continue the slow process leading to restoration of the wilderness resource. The Proposed RMP and Alternative C would restore and protect naturalness with some short-term effects to wildness while ultimately creating long-term benefits to both naturalness and wildness. Alternative E would result in continuing the slow process of overall improvement to the wilderness values.

4.23 Wilderness Study Areas and Parcels with Wilderness Characteristics

4.23.1 Goals and Objectives

4.23.1.1 Goal 1 - Manage WSAs so as not to impair their suitability for preservation as wilderness.

Objective. Manage WSAs so as not to impair their suitability for preservation as wilderness.

4.23.1.2 Goal 2 - Manage parcels with wilderness characteristics to protect those characteristics.

Objective. Manage parcels with wilderness characteristics to protect those characteristics.

4.23.2 Assumptions

WSAs
The WSAs, which total 678,802 acres, would continue to be managed under the WSA IMP, FLPMA, the Steens Act, and other applicable laws and policies until designated as wilderness by Congress or released from WSA status.

OHV and mechanized vehicle use could continue to occur on the Alvord Desert playa in the Alvord Desert WSA.

Parcels with Wilderness Characteristics
The BLM may manage lands newly found to have wilderness characteristics through a variety of land use plan decisions to affect, protect or preserve some or all of the wilderness characteristics. This may include protecting certain lands in their natural condition or providing opportunities for solitude or primitive and unconfined recreation.

4.23.3 Analysis of Alternatives

4.23.3.1 Effects Common to All Alternatives

Direct Effects

WSAs
There would be no new or additional direct effects to the WSAs and their wilderness values.

Indirect Effects

WSAs
Potential indirect effects from a variety of management actions may occur under all alternatives. However, effects of activities in WSAs would be minimized because of the WSA IMP, which states that activities must comply with specific policy guidance and policies for specific activities, including the nonimpairment criteria.

Vegetation. Activities such as habitat restoration and weed control could temporarily reduce naturalness through disturbance of existing vegetation. Activities (including woodlands management) of a more long-lasting nature that could enhance wilderness values may be allowed, if analysis shows they are beneficial to wilderness values and if they are carried out in a manner which is least disturbing to the site. Overall, the effects to wilderness values from vegetation management would be variable.

Visual Resources. Designation of the WSAs as VRM Class I would protect the wilderness value of naturalness.

Energy and Minerals. Continued development and possible expansion of the Red Point School materials site in the Pueblo Mountains WSA would decrease the quality of the wilderness values in that area because the site is a "grandfathered" use. The site may continue in the same "manner and degree" as was occurring on October 21, 1976. "Manner and degree" refers to the kind of physical and visual effects the "grandfathered" use was causing on the above date.

Lands and Realty. Lands and realty management has little potential to affect WSAs because activities such as land exchange and disposal; use authorizations and withdrawals; and construction or location of roads for legal access are constrained by WSA designation. All alternatives specify that WSAs are in land tenure retention zones.

Parcels with Wilderness Characteristics
Vegetation. Activities such as habitat restoration and weed control could temporarily reduce naturalness through the disturbance of existing vegetation. Activities (including woodlands management) of a more long-lasting nature could improve naturalness if the landscape is returned to a more natural fire regime. Overall, the effects to wilderness values from vegetation management would be variable.

Energy and Minerals. Parcels with wilderness characteristics would not be affected by energy and minerals exploration or development because all are located within the Mineral Withdrawal Area and there are no pre-withdrawal claims or leases.

4.23.3.2 Alternative A

Direct Effects

Parcels with Wilderness Characteristics
The four parcels with wilderness characteristics would be managed according to the existing MFP, which could allow resource management actions and uses to decrease the quality of those characteristics.

Indirect Effects

WSAs
Grazing Management. Livestock grazing would continue at the current level and could result in new or additional reductions in naturalness or opportunities for solitude in the WSAs, if additional developments are proposed. Any proposed projects would be evaluated on a case-by-case basis.

Wildland Fire Management. Suppression of all wildland fires would allow fuels to accumulate, potentially compromising wilderness values due to the accumulation of fuels and increased fire potential. Native and desirable introduced plant species would be used in fire rehabilitation, which could reduce the wilderness value of naturalness and the WSAs' potential as wilderness.

Transportation and Roads. There would be no additional effects to the CMPA WSAs from continuing the current transportation management.

Off-Highway Vehicles. OHV and mechanized vehicle use in WSAs would be limited to existing designated roads and ways. Wilderness values of naturalness, solitude, and primitive and unconfined recreation would be diminished by the presence, tracks, and sounds of OHVs and mechanized vehicles both legally and in trespass. However, with any indication that degradation is occurring or that wilderness values are being compromised, the OHV and mechanized vehicle use designations would be reviewed and adjusted as necessary.

Recreation. Continuing current recreation management would not directly increase use, but use of the WSAs is expected to increase as the area receives more public notice. This increased use has the potential to affect WSAs and reduce their wilderness values.

Parcels with Wilderness Characteristics
Visual Resources. The CMPA parcels (Bridge Creek, High Steens, and Lower Stonehouse) would be VRM Class II, while the Alvord Desert parcel would be VRM Class IV. VRM Class II would help retain the existing landscape character of the CMPA parcels and would help protect the wilderness characteristic of naturalness. VRM Class IV would allow major modification of the Alvord Desert parcel landscape. Naturalness of the parcel could be reduced through the introduction of manmade features that dominate the landscape, but this is unlikely because low levels of historic uses of the parcel are expected to continue.

Grazing Management. Livestock grazing would continue at the current level and could reduce naturalness or opportunities for solitude in the parcels with wilderness characteristics, if additional developments are proposed.

Wildland Fire Management. Continued suppression of all wildland fires would allow fuels to accumulate, potentially compromising wilderness characteristics due to the accumulation of fuels and increased fire potential. Native and desirable introduced plant species would be used in fire rehabilitation, which could diminish the wilderness characteristic of naturalness.

Lands and Realty. The Alvord Desert, High Steens, and Lower Stonehouse parcels are in land tenure retention/acquisition zones. The Bridge Creek parcel is in a land tenure disposal by exchange zone. All four parcels are in areas open for ROWs. Retention of the Alvord Desert, High Steens, and Lower Stonehouse parcels in public ownership would help maintain the wilderness characteristics of these parcels. Wilderness characteristics in the Bridge Creek parcel could be lost through transferring of the parcel to private ownership and subsequent management and use by private land owners. Granting and development of ROWs could diminish naturalness, solitude, and primitive and unconfined recreation through the construction of facilities associated with ROWs (typically roads, power lines, and communications sites).

Transportation and Roads. There would be no additional effects to the CMPA parcels with wilderness characteristics from continuing the current transportation management.

Off-Highway Vehicles. OHV and mechanized vehicle use is limited to existing roads in Bridge Creek, High Steens, and Lower Stonehouse parcels. The High Steens parcel is also closed during the winter (limited seasonally). The Alvord Desert parcel is open to OHV and mechanized vehicle use. The wilderness characteristics of naturalness, solitude, and primitive and unconfined recreation of the four parcels could be diminished by the presence, tracks, and sounds of OHVs and mechanized vehicles both legally and in trespass.

Recreation. The Bridge Creek, High Steens and Lower Stonehouse parcels would be in the Steens Mountain ERMA. The Alvord Desert parcel would be in the Andrews ERMA. Continuing current recreation management would not directly increase use, but use of the parcels with wilderness characteristics is expected to increase as the area receives more public notice. This increased use has the potential to reduce the wilderness characteristics of these parcels.

4.23.3.3 Alternative B

Direct Effects

Parcels with Wilderness Characteristics
Parcels with wilderness characteristics would be managed according to the management actions in Alternative B, which would protect the wilderness characteristics.

Indirect Effects

WSAs

Grazing Management. Livestock grazing would be eliminated in the Planning Area and no range improvements would be developed. Naturalness and opportunities for solitude and primitive and unconfined recreation in the WSAs would be increased through the removal of range improvements, changes in riparian vegetation, and removal of livestock.

Wildland Fire Management. Fires that directly threaten public safety, private property, or areas of significant resource values would be suppressed. WSA acres burned annually could increase. Fire rehabilitation actions could involve greater acreages than Alternative A because of the reduced suppression activity and potentially larger fire size. Only native plant species would be used for rehabilitation purposes, which would maintain or improve naturalness.

Transportation and Roads. Approximately 107 miles of vehicle routes in the CMPA, including cherrystem roads, ways, and roads between WSAs, would be closed to motorized and mechanized vehicle use. Additional ways, cherrystem roads, and roads between WSAs in the AMU would be closed to OHV and mechanized vehicle use. Wilderness values of naturalness and opportunities for solitude and primitive and unconfined recreation would be improved through closure of these travel routes.

Off-Highway Vehicles. The WSAs, cherrystem roads, and roads between WSAs would be designated as closed to OHV and mechanized vehicle use, which would protect and potentially improve wilderness values.

Recreation. Closure of many roads and ways in the Planning Area would displace many users to adjacent and nearby WSAs. This would result in heavier motorized and mechanized vehicle use of available WSA boundary roads, creation of additional dispersed camp sites adjacent to available WSA boundary roads, and the associated decrease in the quality of the wilderness values of naturalness, solitude, and primitive and unconfined recreation. Closing or rehabilitating dispersed campsites where natural processes are being jeopardized would help restore naturalness.

Parcels with Wilderness Characteristics

Visual Resources. The Alvord Desert, Bridge Creek, and Lower Stonehouse parcels would be VRM Class II, while the High Steens parcel would be VRM Class I. VRM Class II would help retain the existing landscape character of the Alvord Desert, Bridge Creek, and Lower Stonehouse parcels and would protect the wilderness characteristic of naturalness. VRM Class I would preserve naturalness in the High Steens parcel by restricting almost all management activities.

Grazing Management. Livestock grazing would be eliminated in the Planning Area and no range improvements would be developed. Naturalness and opportunities for solitude and primitive and unconfined recreation in the parcels with wilderness characteristics would be increased through the removal of range improvements, changes in riparian vegetation, and removal of livestock.

Wildland Fire Management. Fires that directly threaten public safety, private property, or areas of significant resource values would be suppressed. Total acres burned annually could increase. Fire rehabilitation actions could involve greater acreages than Alternative A because of the reduced suppression activity and potentially larger fire size. Only native plant species would be used for rehabilitation purposes, which would maintain or improve the wilderness characteristic of naturalness.

Lands and Realty. All four parcels with wilderness characteristics would be in land tenure retention/acquisition zones. All four parcels would be in ROW exclusion areas. Retention of the four parcels with wilderness characteristics in public ownership would help maintain the wilderness characteristics of these parcels. ROWs would not be authorized in the four parcels with wilderness characteristics, which would further maintain the wilderness characteristics.

Transportation and Roads. Closure of many roads and ways in the Planning Area would displace many users to adjacent and nearby areas. This would result in increased OHV and mechanized vehicle use of designated roads in areas designated as limited to designated roads and the creation of additional dispersed camp sites adjacent to those roads, potentially diminishing the wilderness characteristics of naturalness, solitude, and primitive and unconfined recreation in the four parcels.

Off-Highway Vehicles. OHV and mechanized vehicle use would be limited to designated roads in all four parcels. The Bridge Creek, High Steens, and Lower Stonehouse parcels would also be closed during the winter (limited seasonally).

The designation of roads as open or closed would either affect wilderness characteristics as described in Alternative A or would protect and potentially improve wilderness characteristics. Designation of roads would occur in the forthcoming transportation plans for the CMPA and AMU.

Recreation. The Bridge Creek, High Steens and Lower Stonehouse parcels would be in the Steens Mountain ERMA. The Alvord Desert parcel would be in the Andrews ERMA. Closure of many roads and ways in the Planning Area would displace many users to adjacent and nearby areas. This would result in heavier motorized and mechanized vehicle use of open roads and the creation of additional dispersed camp sites adjacent to open roads, potentially diminishing the wilderness characteristics of naturalness, solitude, and primitive and unconfined recreation in the four parcels. Closing or rehabilitating dispersed campsites where natural processes are being jeopardized would help restore the wilderness characteristic of naturalness.

4.23.3.4 Alternative C

Direct Effects

Parcels with Wilderness Characteristics
The wilderness characteristics of the four parcels shown on DRMP/DEIS Map 2.18 would be protected through the following designations: OHV and mechanized vehicle use limited to designated roads, Class II VRM, land tenure retention, and ROW exclusion. Any proposed activity in these parcels would be evaluated on a case-by-case basis.

Indirect Effects

WSAs
Grazing Management. Livestock grazing would continue at sustainable levels in the Planning Area and range improvements could be developed, if in conformance with the WSA IMP. Naturalness and opportunities for solitude in the WSAs could be reduced.

Wildland Fire Management. Effects to WSAs from wildland fire management would be the same as Alternative B.

Transportation and Roads. Closure of seven miles of ways would improve naturalness and opportunities for solitude on a site specific basis.

Off-Highway Vehicles. OHV and mechanized vehicle use would be minimized under this alternative with the WSAs designated as limited to designated roads and ways. Wilderness values of naturalness, solitude, and primitive and unconfined recreation could be reduced by the presence, tracks, and sounds of OHVs and mechanized vehicles both legally and in trespass.

Recreation. Closure of seven miles of ways in the CMPA would increase opportunities for primitive and unconfined recreation. Closing or rehabilitating dispersed campsites where natural processes are being jeopardized would help restore naturalness and improve opportunities for primitive and unconfined recreation.

Parcels with Wilderness Characteristics
Visual Resources. The effects would be the same as Alternative B.

Grazing Management. Livestock grazing would continue at sustainable levels in the Planning Area and range improvements could be developed. This could reduce naturalness and opportunities for solitude in the parcels with wilderness characteristics.

Wildland Fire Management. The effects to parcels with wilderness characteristics would be the same as Alternative B.

Lands and Realty. The effects would be the same as Alternative B.

Transportation and Roads. Parcels with wilderness characteristics would not be affected.

Off-Highway Vehicles. OHV and mechanized vehicle use would be limited to designated roads in all four parcels. The Bridge Creek and High Steens parcels would also closed during the winter (limited seasonally). The designation of roads as open or closed would either affect wilderness characteristics as described in Alternative A or would protect and

potentially improve wilderness characteristics. Designation of roads would occur in the forthcoming transportation plans for the CMPA and AMU.

Recreation. The Bridge Creek, High Steens and Lower Stonehouse parcels would be in the Steens Mountain SRMA. The Alvord Desert parcel would be in the Andrews ERMA. Closing or rehabilitating dispersed campsites where natural processes are being jeopardized would help restore the wilderness characteristic of naturalness and improve opportunities for primitive and unconfined recreation.

4.23.3.5 Proposed RMP

Direct Effects

Parcels with Wilderness Characteristics
The four parcels with wilderness characteristics would be managed according to the Proposed RMP, which could diminish wilderness characteristics, including naturalness, through implementation of various projects. The three parcels within the CMPA are under the CMPA protections of OHV and mechanized vehicle use limited to designated roads, Class II VRM, and land tenure retention. The Alvord Desert Addition parcel would be under the protection of OHV and mechanized vehicle use limited to designated roads.

Indirect Effects

WSAs
Grazing Management. The effects to WSAs from livestock grazing would be the same as Alternative C.

Wildland Fire Management. Fire would be reintroduced into the ecosystem through prescribed fire and wildland fire use. A combination of native and desirable introduced plants would be used for rehabilitation. These activities would result in the same effects to WSAs as Alternative A.

Transportation and Roads. The effects would be the same as Alternative C.

Off-Highway Vehicles. OHV and mechanized vehicle use in the WSAs would be limited to designated roads and ways. Cherrystem roads would be available for use. The effects to WSAs would be the same as Alternative C.

Recreation. Six miles of ways in the CMPA would be closed, which would increase opportunities for primitive and unconfined recreation. Overall increased recreation use would reduce wilderness values in the WSAs through increased motorized and mechanized vehicle use of ways and cherrystem roads, continued use of existing dispersed campsites, and creation of new dispersed campsites. Development of recreation facilities near WSAs would increase use in those areas, possibly reducing wilderness values.

Parcels with Wilderness Characteristics
Visual Resources. The effects would be the same as Alternative A.

Grazing Management. The effects to parcels with wilderness characteristics would be the same as Alternative C.

Wildland Fire Management. Fire would be reintroduced into the ecosystem through prescribed fire and wildland fire use. A combination of native and desirable introduced plants would be used for rehabilitation. These activities would result in the same effects to parcels with wilderness characteristics as Alternative A.

Lands and Realty. The land tenure designation effects would be the same as Alternative B. The ROW designation effects would be the same as Alternative A.

Transportation and Roads. Parcels with wilderness characteristics would not be affected.

Off-Highway Vehicles. The effects to parcels with wilderness characteristics would be the same as Alternative C.

Recreation. Overall increased recreation use would diminish wilderness characteristics through increased motorized and mechanized vehicle use of roads, continued use of existing dispersed campsites, and creation of new dispersed campsites.

Further development of recreation facilities near the Lower Stonehouse parcel, which is close to the Mann Lake Recreation Site, could increase use in that parcel, possibly reducing opportunities for solitude.

4.23.3.6 Alternative E

Direct Effects

Parcels with Wilderness Characteristics
Parcels with wilderness characteristics would be managed according to the management actions in Alternative E, which could reduce the wilderness characteristics, including naturalness, through implementation of various projects. The three parcels within the CMPA are under the CMPA protections of OHV and mechanized vehicle use limited to designated roads, Class II VRM, and land tenure retention.

Indirect Effects

WSAs
Grazing Management. Livestock grazing and range improvements would be maximized throughout the Planning Area and would diminish naturalness in the WSAs. Nevertheless, the WSA IMP must still be followed for any proposed range development in the WSAs.

Wildland Fire Management. Wildland fire management would result in the same effects to WSAs as Alternative A.

Transportation and Roads. Leaving portions of both the North and South Steens Loop Roads open during the winter would increase the potential for vehicular trespass into the WSAs from the Steens Loop Road, thereby decreasing naturalness and opportunities for solitude and primitive and unconfined recreation. Increased seasonal signing and a greater BLM presence would be required to protect the WSAs.

Off-Highway Vehicles. CMPA WSAs would be designated as limited to designated roads and ways. AMU WSAs would be designated as limited to existing roads and ways. This would allow the greatest amount of use in the WSAs. The wilderness values of naturalness, solitude, and primitive and unconfined recreation would be diminished by the presence, tracks, and sounds of OHVs and mechanized vehicles both legally and in trespass. With any indication that degradation is occurring or that wilderness values are being compromised, the OHV and mechanized vehicle use designations would be reviewed and adjusted as necessary.

Recreation. Roads in the CMPA would not be closed, so recreationists would not be displaced. Overall increased recreation use would affect WSAs and decrease wilderness values through increased motorized and mechanized vehicle use of ways and cherrystem roads, heavier use of existing dispersed campsites, and creation of new dispersed campsites. Development of recreation facilities near WSAs would increase use in those areas, possibly diminishing wilderness values.

Parcels with Wilderness Characteristics
Visual Resources. The High Steens and Lower Stonehouse parcels would be VRM Class II, the Bridge Creek parcel would be VRM Class III, and the Alvord Desert parcel would be VRM Class IV. The effects would generally be the same as Alternative A, except that moderate landscape changes would be allowed in the Bridge Creek parcel. These changes would most likely be associated with vegetation management, could result in line and texture changes, and could attract attention.

Grazing Management. Livestock grazing and range improvements would be maximized throughout the Planning Area. Additional range improvements would be installed and numbers of livestock would be increased. This would reduce naturalness and opportunities for solitude in the parcels with wilderness characteristics.

Wildland Fire Management. Wildland fire management would result in the same effects to parcels with wilderness characteristics as Alternative A.

Lands and Realty. The land tenure designation effects would be the same as Alternative B. The ROW designation effects would be the same as Alternative A.

Transportation and Roads. Parcels with wilderness characteristics would not be affected.

Off-Highway Vehicles. OHV and mechanized vehicle use would be limited to designated roads in Bridge Creek, High Steens, and Lower Stonehouse parcels. The Bridge Creek and High Steens parcels would also closed during the winter (limited seasonally). The Alvord Desert parcel would be open to OHV and mechanized vehicle use. The effects to parcels with wilderness characteristics would be similar to Alternative A.

Recreation. Roads in the CMPA would not be closed, so recreationists would not be displaced. Overall increased recreation use would reduce wilderness characteristics through increased motorized and mechanized vehicle use of roads, heavier use of existing dispersed campsites, and creation of new dispersed campsites. Further development of recreation facilities near the Lower Stonehouse parcel, which is close to the Mann Lake Recreation Site, could increase use in that parcel, possibly reducing the wilderness characteristic of solitude.

4.23.4 Summary of Effects

WSAs
The Proposed RMP and all alternatives would protect wilderness values in the existing WSAs at the current level.

Parcels with Wilderness Characteristics
The Proposed RMP and Alternatives A and E would not provide additional protection for the four parcels with wilderness characteristics. Alternatives B and C would provide the highest levels of protection for the wilderness characteristics of the four parcels. Protection of wilderness characteristics would be greatest under Alternative B, which has the most restrictions on use, but more land would be directly protected in Alternative C Alternative E would promote maximum use and visitation and would provide the least protection for the wilderness characteristics.

4.23.5 Cumulative Effects

Historically, the Planning Area was viewed as remote and the majority of use was of a dispersed nature. The current trend is toward increased recreation and tourism. It is likely that population growth in the Bend and Portland areas, as well as the publicity the Steens Mountain Area is receiving, could result in increased visitation and use of the Planning Area WSAs and parcels with wilderness characteristics in the reasonably foreseeable future.

WSAs
Tourism and recreation in the Planning Area and on adjacent lands could cumulatively diminish the wilderness values of naturalness and opportunities for primitive and unconfined recreation in the WSAs through increased numbers of people, vehicles, and activities that may not be compatible with the protection of wilderness values. Actions under Alternatives B and C that restrict access or limit party size could deter recreation and tourism or may cause visitors to look elsewhere for recreation and tourist opportunities. This could lead to increased use of other areas and would improve the opportunities for solitude and primitive recreation in the WSAs. Actions under Alternatives B and C would result in long-term improvements of naturalness in the WSAs. The Proposed RMP, which would address recreation through a CMPA comprehensive recreation plan and a number of recreation project plans, would provide for resource protection and set limits on use, thus reducing cumulative effects to the WSAs' wilderness values. Alternative E, which promotes recreation and tourism, would result in the greatest level of cumulative effects to WSAs. Management actions relating to other resources on USFWS, state, and private lands within and adjacent to the Planning Area could also result in cumulative effects to WSAs. Management of existing WSAs is guided by the WSA IMP, which would minimize the cumulative effects of resource management actions to the WSAs under all of the alternatives.

Parcels with Wilderness Characteristics
Managing the four parcels with wilderness characteristics, as proposed in Alternative C, would slightly increase the overall acreage managed to protect wilderness characteristics. Management of the four parcels with wilderness characteristics, as proposed in the Proposed RMP and Alternatives A, B, and E, would result in no changes in the overall acreage managed to protect wilderness characteristics.

4.24 Wild and Scenic Rivers

4.24.1 Goals and Objectives

4.24.1.1 Goal 1 - Manage the existing and newly designated WSRs in conformance with the WSRs Act and the Wilderness Act.

Objective. Protect and enhance the ORVs of the designated WSRs.

4.24.1.2 Goal 2 - Determine the suitability of eligible WSRs. Manage those rivers found suitable in conformance with BLM Manual 8351 (WSRs - Policy and Program Direction for Identification, Evaluation, and Management) for protective management of eligible and suitable WSRs.

Objective. Protect and enhance the ORVs of rivers determined to be administratively suitable for potential inclusion in the WSRs system by Congress.

4.24.2 Assumptions

Nearly all existing WSRs are within the Steens Mountain Wilderness. In case of conflict between provisions of the Wilderness Act and the WSRs Act, the more restrictive provisions would apply. Wilderness and WSAs are managed for nondegradation, which would protect many ORVs in areas under these types of management. WSRs are managed to protect (nondegradation) and enhance ORVs and, in some instances, may be more restrictive in implementing certain management actions. This may enhance the ORVs beyond management under the Wilderness Act and the WSA IMP. Protection of beneficial uses in streams listed on the 303(d) list would protect ORVs in these areas that are dependent on riparian habitat, such as fish and wildlife habitat or riparian plants. Management in the No Livestock Grazing Area would also protect ORVs associated with upland and riparian vegetation, such as fish and wildlife habitat, or upland and riparian plants. Since there are no valid existing rights or grandfathered rights for minerals activities in the existing WSRs, no locatable, leasable, or salable mineral exploration or development activities would be authorized.

4.24.3 Analysis of Alternatives

4.24.3.1 Effects Common to All Alternatives

Direct Effects

An integrated Wilderness and WSRs Management Plan has been developed for all WSRs in the CMPA and Steens Mountain Wilderness. Under this plan, all ORVs for each designated river segment would be protected or enhanced.

Indirect Effects

Visual Resources. Designation of the Wild river segments as VRM Class I would protect the scenic ORVs.

Off-Highway Vehicles. Designation of the Wild river segments as closed to OHV and mechanized vehicle use would protect and enhance many of the identified ORVs.

4.24.3.2 Alternative A

Direct Effects

All rivers currently eligible for inclusion in the WSRs system would continue to be managed in conformance with BLM Manual 8351 for protective management of eligible WSRs. The identified ORVs for each eligible river would be afforded adequate protection, subject to valid existing rights, until the eligibility determinations are superseded. Management activities and authorized uses would not be allowed to adversely affect either eligibility or the tentative classification. This may include restrictions on grazing management, recreational use, and mineral or energy development.

Indirect Effects

For indirect effects discussions refer to Chapter 4, Indirect Effects under the Wilderness and Recreation headings.

4.24.3.3 Alternative B

Direct Effects

Recommending the ten river segments as not suitable for inclusion in the WSRs system would not affect the identified ORVs. The eligible segments of Home Creek and Threemile Creek are within Steens Mountain Wilderness and are

managed under the Wilderness Act. This protects the fish, scenic, cultural, and recreational ORVs. The upper reaches of Big Alvord Creek and Willow Creek are within the No Livestock Grazing Area of Steens Mountain Wilderness. The areas with botanic values and wildlife habitat diversity are also within existing or proposed RNAs. The lower reaches of Big Alvord and Willow Creeks are within the High Steens WSA and are managed under the WSA IMP. The Pike Creek wildlife habitat ORV would be protected by Steens Mountain Wilderness, the No Livestock Grazing Area, and the High Steens WSA. The headwaters of McCoy Creek are within a portion of the High Steens WSA; the WSA IMP would help protect the diversity of wildlife habitats. The botanic ORV identified for Mud Creek is not within an inventoried river corridor; therefore, this ORV would not be affected. Little Cottonwood and Van Horn Creeks are within the Pueblo Mountains WSA. Management under the WSA IMP would help protect the recreational ORV of Van Horn Creek and the botanic ORV of Little Cottonwood Creek. The Pueblo Foothills RNA also protects the Little Cottonwood Creek botanic ORV. The public lands along Big Trout Creek are within the Mahogany Ridge WSA. The scenic ORV associated with Big Trout Creek would be protected under the WSA IMP, but this creek was found to be not suitable because of the extensive private land holdings along the creek. Grazing would not affect the ORVs for any eligible river because no grazing would be permitted in this alternative.

Indirect Effects

For indirect effects discussions refer to Chapter 4, Indirect Effects under the Wilderness and Recreation headings.

4.24.3.4 Alternative C

Direct Effects

All eligible rivers would be recommended as administratively suitable for potential designation as WSRs by Congress. All rivers found suitable for inclusion in the WSRs system would be managed in conformance with BLM Manual 8351 as if they are designated WSRs until Congress acts on whether or not to add these rivers to the WSRs system. All suitable rivers would be administered in such a manner as to protect and enhance their ORVs. This may include restrictions on grazing management, recreational use, and mineral or energy development within the river corridors.

Indirect Effects

For indirect effects discussions refer to Chapter 4, Indirect Effects under the Wilderness and Recreation headings.

4.24.3.5 Proposed RMP

Direct Effects

Recommending the ten river segments as not suitable for inclusion in the WSRs system would not affect the identified ORVs. The eligible segments of Home Creek and Threemile Creek are within Steens Mountain Wilderness and are managed under the Wilderness Act. This protects the fish, scenic, cultural, and recreational ORVs. The upper reaches of Big Alvord Creek and Willow Creek are within the No Livestock Grazing Area of Steens Mountain Wilderness. The areas with botanic values and wildlife habitat diversity are also within existing or proposed RNAs. The lower reaches of Big Alvord and Willow Creeks are within the High Steens WSA and are managed under the WSA IMP. The Pike Creek wildlife habitat ORV would be protected by Steens Mountain Wilderness, the No Livestock Grazing Area, and the High Steens WSA. The headwaters of McCoy Creek are within a portion of the High Steens WSA; the WSA IMP would help protect the diversity of wildlife habitats. The botanic ORV identified for Mud Creek is not within an inventoried river corridor; therefore, this ORV would not be affected. Little Cottonwood and Van Horn Creeks are within the Pueblo Mountains WSA. Management under the WSA IMP would help protect the recreational ORV of Van Horn Creek and the botanic ORV of Little Cottonwood Creek. The Pueblo Foothills RNA also protects the Little Cottonwood Creek botanic ORV. The public lands along Big Trout Creek are within the Mahogany Ridge WSA. The scenic ORV associated with Big Trout Creek would be protected under the WSA IMP, but this creek was found to be not suitable because of the extensive private land holdings along the creek.

Grazing would continue along those creeks and sections of creeks outside of the No Livestock Grazing Area, but the ORVs should not be affected when existing AMPs and grazing systems are followed. AMPs and grazing systems incorporate ESA requirements and the grazing S&Gs.

Indirect Effects

For indirect effects discussions refer to Chapter 4, Indirect Effects under the Wilderness and Recreation headings.

4.24.3.6 Alternative E

Direct Effects

The direct effects would be the same as the Proposed RMP.

Indirect Effects

For indirect effects discussions refer to Chapter 4, Indirect Effects under the Wilderness and Recreation headings.

4.24.4 Summary of Effects

All eligible rivers in Alternative A would continue to be managed under the provisions of BLM Manual 8351 to protect the identified ORVs. Existing management protects these ORVs.

In the Proposed RMP and Alternatives B and E no rivers would be recommended as administratively suitable for designation as WSRs by Congress. The rivers would be protected by wilderness designation, management under the WSA IMP, ACEC and RNA designations, and current riparian management. No grazing would be allowed in Alternative B, further protecting the ORVs. Grazing in the Proposed RMP and Alternative E would be managed under existing AMPs and grazing systems which incorporate ESA requirements and the S&Gs and should not affect ORVs.

Under Alternative C, all eligible rivers would be recommended as administratively suitable for designation as WSRs by Congress. All rivers found suitable for inclusion in the WSRs system would be managed in conformance with BLM Manual 8351 as if they are designated WSRs until Congress acts on whether or not to add these rivers into the WSRs System. All suitable rivers would be administered in such a manner as to protect and enhance their ORVs. This action may include restrictions on grazing management, recreational use, and mineral or energy development within the river corridors.

4.24.5 Cumulative Effects

Past management practices, such as intensive livestock grazing, mineral exploration, or water development, have affected water quality, fish and wildlife habitat, or other ORVs in WSRs. Increasing BLM management emphasis on PFC in riparian communities, and improved watershed and ecological function in range and upland communities has promoted the maintenance and restoration of fish and wildlife habitats, thereby protecting and enhancing ORVs. Recent land management emphasis on protection (e.g., wilderness or WSAs), especially since passage of the Steens Act, and water quality protection requirements further promote maintenance and restoration of both riparian and upland vegetation communities and habitat throughout the designated and eligible WSR corridors. This results in substantial future protection for ORVs.

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United States Department of the Interior
Bureau of Land Management

Burns District Office
28910 Highway 20 West
Hines, Oregon 97738

August 2004

Proposed Resource Management Plan and Final Environmental Impact Statement

Volume 2 [of 3] - *Chapters 5 and 6, Appendices A through T, and Maps*

Andrews Management Unit/Steens Mountain Cooperative Management and Protection Area

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historic places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.

BLM/OR/WA/PL-03/043+1792

Photo of Alvord Tree by Mark Armstrong

ANDREWS MANAGEMENT UNIT/STEENS MOUNTAIN COOPERATIVE MANAGEMENT AND PROTECTION AREA PROPOSED RESOURCE MANAGEMENT PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT

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ACRONYMS

Reader note: *Please refer to the list below for acronyms that may be used in this document.*

ACRONYM	DEFINITION
ACEC	Area of Critical Environmental Concern
AML	Appropriate Management Level
AMP	Allotment Management Plan
AMS	Analysis of the Management Situation
AMU	Andrews Management Unit / The Planning Area outside of the Steens Mountain CMPA
APHIS	Agricultural Plant and Animal Health Inspection Service
AUM	Animal Unit Month
BCB	Back Country Byway
BLM	Bureau of Land Management
BMPs	Best Management Practices
CAA	Clean Air Act
CCD	Census County Divisions
CD	Compact Disk
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMPA	Cooperative Management and Protection Area
CWA	Clean Water Act
DEQ	Oregon Department of Environmental Quality
DEIS	Draft Environmental Impact Statement
DO	District Office
DRC	Desired Range of Conditions
DRMP	Draft Resource Management Plan
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act
ESI	Ecological Site Inventory
FAR	Functional At Risk
FEIS	Final Environmental Impact Statement
FFR	Federal Fenced Range
FLPMA	Federal Land Policy and Management Act
FMP	Fire Management Plan
GIS	Geographic Information System
HMA	Herd Management Area
HUC	Hydrologic Unit Code
ICBEMP	Interior Columbia Basin Ecosystem Management Project
ID	Interdisciplinary
Malheur NWR	Malheur National Wildlife Refuge
MFP	Management Framework Plan
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MRDG	Minimum Requirement Decision Guide
NAAQS	National Ambient Air Quality Standards
NEA	Northwest Economic Associates
NEPA	National Environmental Policy Act
NSO	No surface occupancy
ODA	Oregon Department of Agriculture
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
OHV	Off-highway vehicle
ONDA	Oregon Natural Desert Association
ONHP	Oregon Natural Heritage Program
ORS	Oregon Revised Statute
ORV	Outstandingly Remarkable Value

OWRD	Oregon Water Resources Department
PFC	Proper functioning condition
PILT	Payments In Lieu of Taxes
PL	Public Law
PM	Particulate Matter
PNC	Potential Natural Community
PP&L	Pacific Power and Light
PRIA	Public Rangelands Improvement Act of 1978
PRMP	Proposed Resource Management Plan
R&PP	Recreation & Public Purpose
RA	Resource Area
RAC	Southeast Oregon Resource Advisory Council
RMIS	Recreation Management Information System
RMP	Resource Management Plan
RNA	Research Natural Area
ROD	Record of Decision
ROW	right-of-way
RTR	Redband Trout Reserve
S&Gs	Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington
SBR	subbasin review
SEORMP	Southeastern Oregon Resource Management Plan
SIP	State Implementation Plan
SMAC	Steens Mountain Advisory Council
SRMA	Special Recreation Management Area
SRP	Special Recreation Permit
T&E	Threatened and Endangered
TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy
TNR	Temporary Nonrenewable
TP	Transportation Plan
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VRM	Visual Resource Management
WIS	Wilderness Information Specialist
WJMA	Wildlands Juniper Management Area
WQMP	Water Quality Management Plan
WQRP	Water Quality Restoration Plan
WSA IMP	Interim Management Policy for Lands Under Wilderness Review
WSA	Wilderness Study Area
WSR	Wild and Scenic River
WUI	Wildland urban interface
ybp	years before present

5 CONSULTATION, COORDINATION AND LIST OF PREPARERS

5.1 Introduction

This Proposed RMP/FEIS was prepared by an ID Team of resource specialists from the Burns DO. Preparation of the SEORMP was initiated by the Vale and Burns Districts of the BLM, which initially included the Andrews RA. However, as a result of the Steens Act, the Burns District deemed it appropriate to separate the Andrews RA from the SEORMP and develop a separate plan in order to address changes in land management resulting from mandates of the Steens Act. The planning process began in early 2001 with the writing of the Preparation Plan. A consulting firm was hired in September 2001 to assist the BLM in the RMP/EIS process. Training of the ID Team occurred in February 2002.

5.2 Public Participation

The official start of the preparation of the RMP/EIS was initiated with the publishing of a "Notice of Intent" to prepare an RMP/EIS in the *Federal Register* on December 6, 2001. This notice also included an invitation to the public to suggest issues to be addressed in the RMP and to provide comments concerning the management of public lands. In addition, 1,220 scoping packets providing information about the planning process, outlining the planning schedule, and requesting comments were mailed to individuals, organizations, and agencies. Additional copies of the scoping brochure were made available at the four scoping meetings. News releases and requests for publication or announcement were mailed to 19 media groups including the Burns Times Herald, The Bulletin, The Oregonian, and KZZR Radio. BLM representatives attended meetings with Harney County to inform them of the preparation of the RMP/EIS and to encourage them to make comments, request information, and generally be involved in the process. The same information was distributed to the Burns Paiute Tribal Government. The Notice of Intent, news releases, and other mailings identified the beginning of the EIS scoping period and the location, date, and time of the public scoping meetings. The comment period ran from February through March 2002.

A SBR was conducted prior to completing the AMS or the public scoping. The SBR was a multi-agency collaborative effort to "step down" to the local level the findings and assessments of the ICBEMP. The ICBEMP was established in 1994 to develop and then adopt a scientifically sound ecosystem-based strategy for managing all USFS or BLM administered lands within the interior Columbia Basin. In other words, did the findings from the ICBEMP have any meaning to the planning process? The SBR group determined that many of them did, and these were incorporated into the issues addressed in this plan (Appendix B).

The AMS Summary was prepared after the SBR and mailed to members of the public, local and tribal governments, other federal agencies, and state agencies. It contained a description of the preliminary issues, alternatives, and planning criteria, as well as the resource area profile, existing management situation, and management opportunities. A followup newsletter outlining the primary comments was then mailed to 257 individuals in July 2002. An additional 143 copies of the AMS Summary were sent to interested individuals and organizations by request. The full version of the AMS was published and made available to the public in July 2002.

The public scoping meetings were held in the following cities on the dates listed and with the stated number of attendees.

Burns, Oregon	February 27, 2002	15 attended
Frenchglen, Oregon	March 4, 2002	17 attended
Bend, Oregon	March 6, 2002	55 attended
Portland, Oregon	March 7, 2002	23 attended

As a result of the public scoping meetings, a total of 2,313 scoping letters were received. These included 1,844 letters comprised of three different form letters and 469 letters which included versions of the form letters with supplemental comments added. Each comment was summarized and included in a comment table, which is available for public review at the BLM Burns DO during normal business hours. A total of 3,601 comments were identified, and were sorted into 23 categories. A memorandum and table summarizing the comments received are included in Appendix C. These comments were incorporated into the alternatives and the analysis of this PRMP/FEIS. In addition to public scoping meetings, a number of meetings were conducted with collaborating agencies and other interested parties.

On October 3, 2003, the EPA's Notice of Availability of the DRMP/DEIS was published in the *Federal Register* which initiated a 90-day comment period. A news release was sent to media groups including the Burns Times Herald, The Bulletin, The Oregonian, and KZZR Radio announcing availability of the DRMP/DEIS. Approximately 307 hard copies of the DRMP/DEIS and 80 compact discs were sent to individuals, agencies, and organizations. An RMP newsletter was also distributed to about 538 names on the mailing list announcing the availability of the DRMP/DEIS as well as announcing the public comment period and meeting dates. The DRMP/DEIS was also made available on the Burns

website. During the 90-day public comment period, four public meetings were held in the following cities on the dates listed and with the stated number of attendees.

Portland, Oregon	October 27, 2003	49 attended
Bend, Oregon	October 28, 2003	38 attended
Burns, Oregon	October 29, 2003	6 attended
Frenchglen, Oregon	October 30, 2003	10 attended

The BLM received approximately 5,563 public comment letters on the DRMP/DEIS a majority of which were form letter communications. Approximately 923 letters were individualized letters and 84 letters contained substantive comments which are addressed in Volume 2 of the Proposed RMP/FEIS. Comments made during the SEORMP process that were specific to the Andrews RA were also considered. The comment period ended January 5, 2004. The BLM continued to involve the RAC, the SMAC, and cooperating agencies throughout the process. Table 5.1.1 summarizes the key public involvement events.

Table 5.1.1: Summary of Key Public Involvement Events

Date	Event
10/22/01	SMAC meeting, Hines, Oregon.
12/6/01	Notice of Intent to prepare RMP published in *Federal Register*.
12/17-18/02	SMAC meeting, Hines, Oregon.
1/8/02	Mailed letter to Burns Paiute Tribe requesting time on the Tribal Council agenda to discuss the RMP and an MOU between BLM and Burns Paiute Tribe.
4-25/02	SMAC meeting, Hines, Oregon.
2/02	Scoping brochure mailed to approximately 1,220 individuals, organizations, and agencies.
2/15/02	Issued a press release announcing upcoming public scoping meetings.
2/27/02	Public Scoping Meeting, Burns, Oregon (15 attendees).
2/28-3/1/02	SMAC meeting, Hines, Oregon.
3/4/02	Public Scoping Meeting, Frenchglen, Oregon (17 attendees).
3/6/02	Public Scoping Meeting, Bend, Oregon (55 attendees).
3/7/02	Public Scoping Meeting, Bend, Oregon (23 attendees).
4/3/02	Met with Burns Paiute Tribal Council to discuss possibility of Burns Paiute Tribe becoming a cooperating agency and other planning related issues.
4/4-5/02	SMAC meeting, Hines, Oregon.
5/13/02	Meeting with cooperating agencies and BLM ID team.
6/13-14/02	SMAC meeting, Hines, Oregon.
6/17/02	Meeting with Malheur NWR, DEQ, Burns Paiute Tribe, Harney County, Burns City Manager, and BLM ID team.
7/02/02	RMP Newsletter mailed to the public and distributed to Hines City Hall, Burns City Hall, Harney County Courthouse, Narrows Store and RV Park, Princeton Post Office, Frenchglen Post Office, Denio Post Office, Fields Store, and Emigrant Creek Ranger District.
7/1/02	Meeting with Malheur NWR, DEQ, Burns Paiute Tribe, and BLM ID team.

Date	Event
7/8/02	E-mail message to cooperating agencies regarding timeframes, upcoming meeting, and newsletter.
7/20/02	Issued a press release announcing availability of an RMP Newsletter.
7/25/02	Provided cooperating agencies with management actions.
7/29/02	Meeting with Burns Paiute Tribe, Malheur NWR, USFWS Department of Ecological Services, Burns City Manager, and BLM ID team.
8/14/02	Provided core team meeting notes to cooperating agencies.
8/15-16/02	SMAC meeting, Frenchglen, Oregon.
8/19/02	Meeting with Malheur NWR, USFWS Department of Ecological Services, Burns City Manager, and BLM ID team.
10/21-22/02	SMAC meeting, Bend, Oregon.
10/31/02	Press Release issued announcing availability of the complete AMS.
12/2-3/02	SMAC meeting, Hines, Oregon.
12/11/02	Met with Hines City Manager, and discussed the RMP process and the possibility of the City becoming a cooperating agency. A copy of the AMS was also delivered.
1/13/03	Attended Hines City Council meeting to update them on RMP process and discuss possibility of the City becoming a cooperating agency.
3-24/03	SMAC meeting, Hines, Oregon.
1/28/03	Letters sent to permittees informing them of a WSA proposal and asking for assistance in identifying range improvements, trails, roads, and mining disturbance.
2/26/03	Mailed Chapters 1 and 3, and Chapter 2 Summary Table to SMAC and cooperating agencies for an internal review. Copies were hand delivered to City of Hines, City of Burns, Harney County, and ODFW.
3/3-4/03	SMAC meeting, Hines, Oregon.
3/21/03	Press release issued notifying the public of proposed publishing of the DRMP/DEIS, as well as the opportunity to comment during the 90-day comment period, and the upcoming SMAC meeting.
3/27/03	Meeting with Harney County regarding management actions.
4/2/03	Meeting with Harney County and City of Burns regarding management actions.
4/9-11/03	SMAC meeting, Hines, Oregon.
4/16/03	Meeting with Harney County regarding management actions.
4/21/03	Letter to RAC notifying them the Preliminary DRMP/DEIS would be available the first week in May.
4/23/03	Press release issued notifying the public of proposed publishing date of the DRMP/DEIS, as well as the opportunity to comment during the 90-day comment period, and the upcoming SMAC meeting.
4/23/03	Conference call with State Office Staff.
4/30/03	Preliminary DRMP/DEIS mailed by contractor to the RAC, SMAC, cooperating agencies, Oregon State Office, and Burns DO.

Date	Event
5/8-9/03	SMAC meeting, Hines, Oregon.
5/21/03	Press release issued notifying the public of proposed publishing date of the DRMP/DEIS, as well as the opportunity to comment during the 90-day comment period, and the upcoming SMAC meeting.
6/5-6/03	SMAC meeting, Hines, Oregon. Comments were provided by City of Burns, Harney County, Community Response Team, and Chamber of Commerce regarding Social and Economic Values.
6/17/03	District staff met with Malheur NWR.
6/23/03	District staff met with the ODFW regarding RTR.
7/18/03	Press release issued notifying the public of proposed publishing date of the DRMP/DEIS, as well as the opportunity to comment during the 90-day comment period, and the cancellation of the August SMAC meeting.
9/03	Newsletter mailed to public informing them of the RMP schedule, RMP format, and opportunities for public comment.
9/19/03	Notice of Availability for the DRMP/DEIS published in the *Federal Register*.
9/19/03	Press release issued announcing the availability of the DRMP/DEIS.
9/15-16/03	SMAC meeting, Bend, Oregon.
9/22/03	RAC meeting, Ka nee tah, Oregon.
10/3/03	EPA's Notice of Availability for the DRMP/DEIS published in the *Federal Register*.
10/21/03	Press release issued reminding the public of upcoming public meetings.
10/27/03	Public Meeting, Portland, OR (49 attendees).
10/28/03	Public Meeting, Bend, OR (38 attendees).
10/29/03	Public Meeting, Burns, OR (6 attendees).
10/30/03	Public Meeting, Frenchglen, OR (10 attendees).
11/17-18/03	SMAC meeting, Burns, Oregon.
12/8/04	RAC meeting, Burns, Oregon.
2/13/04	Draft responses to public comments were distributed to the SMAC along with a spreadsheet describing effects to the Proposed RMP/FEIS.
2/17-19/04	SMAC meeting, Burns, Oregon.
2/18/04	Draft responses to public comments were distributed to cooperating agencies, the RAC, and State Office personnel. Cooperating agencies were given the opportunity to meet individually with BLM to discuss changes.
2/19/04	Met with Burns Paiute Tribal SMAC member to ensure the Burns Paiute Tribe had the necessary information regarding the changes to the Proposed RMP/FEIS.
2/20/04	Met with Harney County to discuss proposed changes to the Proposed RMP/FEIS.
2/23/04	RAC meeting, Burns, Oregon.
2/24/04	Attended Hines City Council meeting to update them on the RMP process and allow for additional input.

Date	Event
3/2/04	Met with USFWS Ecological Services, and Malheur NWR, to discuss proposed changes to the Proposed RMP/FEIS.

5.2.1 Tribal Participation

Burns Paiute Tribal Council

5.2.2 Agencies and Organizations Contacted or Consulted

City of Hines
City of Burns
Harney County Chamber of Commerce
Harney County Court
BLM Lakeview District Office
Oregon Department of Environmental Quality
Oregon Department of Water Resources
Oregon Department of Fish and Wildlife
Southeast Oregon Resource Advisory Council
Steens Mountain Advisory Council
U.S. Fish and Wildlife Service, Ecological Services
U.S. Fish and Wildlife Service, Malheur National Wildlife Refuge
BLM Vale District Office

5.2.3 Agencies, Organizations, and Individuals on Mailing List

The BLM mailed the public scoping packet to approximately 1,220 agencies, organizations, and individuals. The "Summary of the Analysis of the Management Situation" was mailed to approximately 208 people and the complete AMS was mailed to approximately 64 people. Three hundred eighty-seven (387) copies of the DRMP/DEIS were mailed along with 538 newsletters announcing the availability of the DRMP/DEIS. The following is a list of the officials, tribal groups, agencies, and organizations to which a copy of this Proposed RMP/FEIS was sent. The list of individuals on the mailing list is not included.

Elected Officials

U.S. Senator Ron Wyden
U.S. Senator Gordon Smith
Congressman Greg Walden
Governor Ted Kulongoski
Harney County Judge Steve Grasty

Tribal Groups

Burns Paiute Tribal Council
Confederated Tribes of the Warm Springs Reservation
Fort McDermitt Tribal Council
Klamath Tribes

Agencies

U.S. Fish and Wildlife Service, Ecological Services, Central Oregon Field Office
U.S. Fish and Wildlife Service, Malheur National Wildlife Refuge
U.S. Fish and Wildlife Service, Oregon State Office
Oregon Department of Fish and Wildlife
U.S. Environmental Protection Agency
Oregon Department of Transportation
Department of Land Conservation and Development
Federal Energy Regulatory Commission

Fremont National Forest
Harney County Chamber of Commerce
Harney County Library
Harney County Soil and Water Conservation District
Harney County Planning Department
Malheur County Planning Department
National Landscape Conservation System
Oregon Department of Geology and Mineral Industries
Oregon Division of State Lands
Oregon State Parks Department
Oregon Natural Resources Council
Animal and Plant Health Inspection Service
U.S. Forest Service, Emigrant Ranger Station
U.S. Forest Service, Malheur National Forest
Eastern Oregon Agricultural Research Center
Natural Resources Conservation Service
Bonneville Power Administration
BLM - Coos Bay District Office
BLM - Lakeview District Office
BLM - Medford District Office
BLM - Oregon State Office
BLM - Prineville District Office
BLM - Salem District Office
BLM - Eugene District Office
BLM - Roseburg District Office
BLM - Spokane District Office
BLM - Vale District Office
Bureau of Reclamation

Organizations

American Alpine Club
Animal Protection Institute
Association of Oregon and California Counties
Central Washington University
Eastern Oregon Sportsmen Association
Evergreen State College
Frenchglen School Board
Frenchglen Community Club
The Fund for Animals, Inc.
Geyser Observation and Study Association
Harney Electric Cooperative
High Desert Outfitters
Hunters for Conservation
Izaak Walton League
National Wildlife Federation
The Nature Conservancy
Northwest Coalition for Alternative to Pesticides
Oregon Cattlemen's Association
Oregon Equestrian Trails
Oregon Farm Bureau
Oregon Guides and Packers
Oregon Grotto
Oregon Hunter's Association
Oregon Llamas
Oregon Natural Desert Association
Oregon State Snowmobile Association, Inc.
Pacific Rivers Council

Portland State University
Sierra Club
Steens Mountain Club
University of Oregon Library
Waterwatch
Water for Life
Western Lands Exchange Project
WHOA
Wild Wilderness
Wilderness Society
Wilderness Watch
Wildlife Management Institute

5.3 List of Preparers

5.3.1 Bureau of Land Management RMP/EIS Team

Team Member	Resource
Gary Foulkes*	Project Lead, Environmental Justice, Air Quality, Socioeconomics
Rick Hall*	ACECs, Special Status Species - Flora, Rangelands, Grazing Management, Soils
Doug Linn	Biological Soil Crusts
Scott Thomas	Cultural, Paleontology, Native American Concerns
Lesley Richman	Noxious Weeds
Jeff Rose	Woodlands/WJMA, Fire Management
Carolyn Freeborn*	Management Representative, Grazing Management
Cam Swisher	Grazing Management
Dave Ward	Grazing Management
Bill Andersen	Grazing Management
Manny Berain	Grazing Management
Jon Collins*	Wild and Scenic Rivers
Laura Graves	Wild and Scenic Rivers
John Neeling*	Wilderness
Evelyn Treiman*	Recreation, OHVs, Visual Resources, Wilderness Study Areas, National Trails
Mark Sherbourne	Transportation
Skip Renchler	Utility/Communication Corridors, Cadastral/Land/Realty, Renewable Energy
Matt Obradovich*	Wildlife, Special Status Species - Fauna, Wetlands, Animal Damage Control, Wild Horses, Riparian Areas, Rangelands
Darren Brumback*	Fisheries, Redband Trout Reserve, Water Resources, Riparian Areas
Dean Bolstad	Wild Horses
Tom Seley	Wild Horses
Cindy Weston	Fisheries, Water Resources, Riparian Areas
Kelly Hazen*	Geographical Information System
Pam Keller	Geographical Information System
Rhonda Karges*	SMAC/Management Support
Terri Geisler	Minerals/Geology, Renewable Energy

*Core Team Member

5.3.2 Enviroscientists, Inc. RMP/EIS Team

Team Member	Resource
Richard DeLong	Project Manager, Air Quality, Environmental Justice, Wilderness
Opal Adams	Assistant Project Manager, Energy and Minerals, Geology, Paleontology, Visual Resource Management
Jennifer Thies	Project Coordinator, Lands and Realty, Transportation and Roads, Off-Highway Vehicles, Social and Economic Values, Recreation, Wilderness Study Areas, ACECs
Adrian Juncosa	Grazing, Rangelands, Fire
Susan Fox	Wildlife, Wild Horses and Burros, Special Status Animal Species

Matt Kiesse	Fisheries, Special Status Fish Species, Redband Trout Reserve, Wild and Scenic Rivers, Water Resources
Joan Reynolds	Vegetation, Soils, Special Status Plant Species, Noxious Weeds, Riparian Areas/Wetlands
Dr. Robert Vierra	Cultural Resources, Native American Traditional Values

5.3.3 Cooperating Agencies

U.S. Fish and Wildlife Service, Ecological Services
U.S. Fish and Wildlife Service, Malheur National Wildlife Refuge
Burns Paiute Tribe
Oregon Department of Environmental Quality
Oregon Department of Fish and Wildlife
Harney County
City of Burns
City of Hines

6 GLOSSARY, BIBLIOGRAPHY, AND INDEX

6.1 Glossary

A complete glossary of Transportation Management terms can be found in Appendix M.

A

Adaptive Management – A type of natural resource management in which decisions are made as part of an ongoing process. Adaptive management involves testing, monitoring, evaluation, and incorporating new knowledge into management approaches based on scientific findings and the needs of society. Results are used to modify management policy.

Advanced ecological status – A biotic community with a high similarity to a defined or perceived potential natural community (PNC) for an ecological site, usually late seral or PNC ecological status.

Allotment – A specific portion of public land allocated for livestock grazing, typically with identifiable or fenced boundaries and permitted for a specified number of livestock.

Allotment (grazing) – Area designated for the use of a certain number and kind of livestock for a prescribed period of time.

Allotment Management Plan (AMP) – A plan for managing livestock grazing on specified public land.

Analysis of the Management Situation (AMS) – Step 4 of the BLM's land use planning process. It is a comprehensive documentation of the present conditions of the resources, current management guidance, and opportunities for change.

Animal unit – One cow, one cow/calf pair, one horse, or five sheep.

Animal Unit Month (AUM) – The forage needed to support one cow, one cow/calf pair, one horse, or five sheep for one month. Approximately 800 pounds of forage.

Appropriate Management Level (AML) – An established population range that represents the number of animals that the designated HMA can sustain and that results in a thriving natural ecological balance with other uses and resources common to the area and avoids deterioration of the public range.

Area of Critical Environmental Concern (ACEC) – Area where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect humans from natural hazards.

Avoidance Areas – Areas with sensitive resource values where rights-of-way and land use authorizations would be strongly discouraged. Authorizations made in avoidance areas would have to be compatible with the purpose for which the area was designated and not be otherwise feasible outside the avoidance area.

B

Basalt – A dark, heavy, fine-grained silica-poor igneous rock composed largely of iron and magnesium minerals and calcium-rich plagioclase feldspars.

Basin (river) – In general, the area of land that drains water, sediment, and dissolved materials to a common point along a stream channel. River basins are composed of large river systems. In this EIS, the term refers to the equivalent of a third field hydrologic unit code, an area of about nine million acres, such as the Salmon River basin. It also is used to refer in general to the Interior Columbia River Basin.

Best Management Practices (BMPs) – A set of practices which, when applied during implementation of management actions, ensures that negative impacts to natural resources are minimized. BMPs are applied based on site specific evaluation and represent the most effective and practical means to achieve management goals for a given site.

Biological Soil Crust - Lichens, mosses, green algae, fungi, cyanobacteria, and bacteria growing on or just below the surface of soils.

Bureau of Land Management (BLM) – Government agency with the mandate to manage federal lands under its jurisdiction for multiple uses.

BLM assessment species – Plant and animal species on List 2 of the Oregon Natural Heritage Data Base, or those species on the Oregon List of Sensitive Wildlife Species (OAR 635-100-040) that are identified in BLM Instruction Memo OR-91-57 and are not included as federal candidate, state listed, or BLM sensitive species.

BLM sensitive species – Plant or animal species eligible for federal listed, federal candidate, state listed, or state candidate (plant) status, or on List 1 in the Oregon Natural Heritage Data Base, or approved for this category by the BLM State Director.

BLM tracking species – Plant and animal species on List 3 and 4 of the Oregon Natural Heritage Data Base, or those species on the Oregon List of Sensitive Wildlife Species (OAR 635-100-040) that are identified in BLM Instruction Memo OR-91-57 and are not included as federal candidate, state listed, BLM sensitive, or BLM assessment species.

C

Candidate Species – Any species included in the *Federal Register* Notice of Review that are being considered for listing as threatened or endangered by the US Fish and Wildlife Service.

Canopy – In a forest, the branches from the uppermost layer of trees; on rangeland, the vertical projection downward of the aerial portion of vegetation.

Cell - Unique ecosystem type used by the Natural Heritage Plan to inventory, classify, and evaluate natural areas. Cells contain one or more ecosystem elements (ie., plant communities or ecosystems such as Natural Heritage Resources or special species).

Classification – A process required by law for determining the suitability of public lands for certain types of disposal or lease under the public land laws or for retention in public ownership.

Climax vegetation – The stabilized plant community on a particular site. The plant cover reproduces itself and does not change as long as the environment remains the same.

Colluvium – Soil material, rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Commodities – Goods and services produced by industries which include but are not limited to agriculture, livestock grazing, and mining.

Community – A group of species of plants and/or animals living and interacting at a particular time and place; a group of people residing in the same place and under the same government.

Consultation – (1) An active, affirmative process that (a) identifies issues and seeks input from appropriate American Indian governments, community groups, and individuals; and (b) considers their interests as a necessary and integral part of the BLM's and USFS's decision-making process. (2) The Federal Government has a legal obligation to consult with American Indian Tribes. This legal obligation is based in such laws as the Native American Graves Protection and Repatriation Act, the American Indian Religious Freedom Act, and numerous other Executive Orders and statutes. This legal responsibility is, through consultation, to consider Indian interests and account for those interests in the decision. (3) The term also refers to a requirement under Section 7 of the ESA for federal agencies to consult with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service with regard to federal actions that may affect listed threatened and endangered species or critical habitat.

Corridor (landscape) – Landscape elements that connect similar patches of habitat through an area with different characteristics. For example, streamside vegetation may create a corridor of willows and hardwoods between meadows or through a forest.

Custodial management – Management of a group of similar allotments with minimal expenditure of appropriated funds to continue protecting existing resource values.

D

Deep soil – A soil that is 40 to 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Developed recreation – Recreation that requires facilities which in turn result in concentrated use of an area; for example, a campground.

Dispersed recreation – Recreation that does not occur in a developed recreation site; for example, hunting or backpacking.

Disturbance – Refers to events that alter the structure, composition, or function of terrestrial or aquatic habitats. Natural disturbances include, among others, drought, floods, wind, fires, wildlife grazing, insects, and pathogens. Human-caused disturbances include actions such as timber harvest, livestock grazing, roads, and the introduction of exotic species.

E

Ecological Site Inventory (ESI) – The basic inventory of present and potential vegetation on BLM rangelands. Ecological sites are differentiated on the basis of the kind, proportion, or amount of plant species.

Ecological status – The present state of vegetation of a range site in relation to the potential natural community for that site. Four classes are used to express the degree to which the production or composition of the present plant community reflects that of the potential natural community (climax):

Ecological Status (Seral stage)
Percent of Community in Climax Condition:

Potential natural community	76-100
Late seral	51-75
Mid-seral	26-50
Early seral	0-25

Ecosystem – A complete, interacting system of living organisms and the land and water that make up their environment; the home places of all living things, including humans.

Ecosystem Management – The use of a "whole-landscape" approach to achieve multiple-use management of public lands by blending the needs of people and environmental values in such a way that these lands represent diverse, healthy, productive, and sustainable ecosystems.

Endangered Species – Any species defined under the Endangered Species Act (ESA) as being in danger of extinction throughout all or a significant portion of its range. Listings are published in the *Federal Register*.

Environmental Assessment (EA) – One type of document prepared by federal agencies in compliance with the National Environmental Policy Act (NEPA) which portrays the environmental consequences of proposed federal actions which are not expected to have significant effects on the human environment.

Environmental Impact Statement (EIS) – One type of document prepared by federal agencies in compliance with the National Environmental Policy Act (NEPA) which portrays the environmental consequences of proposed major federal actions expected to have significant impacts on the human environment.

Ephemeral stream – A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no continuous supply from melting snow or other source, and its channel is above the water table at all times.

Exclusion Areas – Areas with sensitive resource values where rights-of-way and land use authorizations would not be authorized.

Existing Management Situation – A component of the AMP; a description of the existing management direction governing resource management programs for a Planning Area.

Extensive Recreation Management Area (ERMA) – Area where recreation is unstructured and dispersed with minimal regulatory constraints and where minimal recreation-related investments are required.

F

Federal Land Policy and Management Act of 1976 (FLPMA) – Law mandating that the BLM manage lands under its jurisdiction for multiple uses. Establishes guidelines for its administration; and provides for the management, protection, development, and enhancement of the public lands, among other provisions.

Fire Management Plan (FMP) – A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational procedures such as preparedness plans, preplanned dispatch plans, prescribed fire plans and prevention plans.

Fire regime – The characteristics of fire in a given ecosystem, such as the frequency, predictability, intensity, and seasonality of fire.

Fire return interval – The number of years between fire events for a specified area.

Flood plain – A nearly level alluvial plain that borders a stream and is subject to inundation under flood-stage conditions unless protected artificially. It is usually a constructional landform built of sediment deposited during overflow and lateral migration of the stream.

Forb – Any herbaceous plant that is not a grass or a grasslike species. Broad-leafed plants; includes plants that commonly are called weeds or wildflowers.

Functional at Risk (FAR) - Riparian/Wetland areas that are in functional condition but an existing soil, water, or vegetation attribute makes them susceptible to degradation.

G

Geographic Information System (GIS) – An information processing technology to input, store, manipulate, analyze, and display data; a system of computer maps with corresponding site specific information that can be combined electronically to provide reports and maps.

H

Herd Area – A geographic area identified as having provided habitat for a wild horse herd in 1971. A Herd Area may be solely the active Herd Management Area, or inactive, where wild horses are no longer managed, or a combination of both.

Herd Management Area (HMA) – A geographic area identified in a Management Framework Plan or Resource Management Plan for the long-term management of a wild horse herd.

Herd Management Area Plan – A plan that prescribes measures for the protection, management, and control of wild horses and their habitat on one or more HMAs, in conformance with decisions made in approved Management Framework or Resource Management Plans.

Hiking Trail - A pathway created and maintained by human foot traffic, saddle or pack stock, or constructed and maintained for these uses.

Hydrologic Unit Code (HUC) – A coding system developed by the U.S. Geological Service to map geographic boundaries of watersheds of various sizes.

Hydrothermal deposit – A mineral deposit formed by hot mineral-laden fluids.

I

Incident commander – Individual responsible for the management of all incident (fire) operations.

Interim Management Policy for Lands Under Wilderness Review (WSA IMP) – Policy for managing public lands under wilderness review. Section 603(c) of the FLPMA states: "During the period of review of such areas and until Congress has determined otherwise, the Secretary shall continue to manage such lands according to his authority under this Act and other applicable laws in a manner so as not to impair the suitability of such areas for preservation as wilderness, subject, however, to the continuation of existing mining and grazing uses and mineral leasing in the manner and degree in which the same was being conducted on the date of approval of this Act: Provided, that, in managing the public lands the Secretary shall by regulation or otherwise take any action required to prevent unnecessary or undue degradation of the lands and their resources or to afford environmental protection."

Intermittent stream – A stream, or reach of a stream, that flows for prolonged periods only when it receives groundwater discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Interior Columbia Basin Ecosystem Management Project (ICBEMP) – An on going project examining the effects (on a large regional scale) of past and present land use activities on the Interior Columbia River Basin ecosystem and a small part of the Great Basin ecosystem.

Interior drainage – A system of streams with no outlet to the sea (e.g. Great Basin).

J

K

Known Geothermal Resource Area – "An area in which the geology, nearby discoveries, competitive interest, or other indicia would, in the opinion of the Secretary, engender the belief in men who are experienced in the subject matter that the prospect for extraction of geothermal stream or associated geothermal resources are good enough to warrant expenditures or money for that purpose" (43 CFR 3200.0-5(k)).

L

Land Use Authorizations – Those realty related authorizations such as leases, permits, and easements authorized under 43 CFR2920 and the R&PP Act. Land use authorizations also include any other authorizations with the exception of rights-of-way (43 CFR2800) and Special Recreation Permits (proposed in 43 CFR2930) generally contained in 43 CFR2000 series of regulations.

Leasable Minerals – Minerals that may be leased to private interests by the federal government including oil, gas, geothermal, coal, and sodium compounds.

Locatable Minerals – Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of 1872, as amended. This includes deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

M

Management Concern – Procedures or land use allocations that do not constitute issues but which are recognized, through the RMP/EIS preparation process, as needing modification or decision regarding management direction.

Management Direction – A statement of goals and objectives, management prescriptions, and associated standards and guidelines for attaining them.

Management Framework Plan (MFP) – BLM land use plan, predecessor to the RMP. Older generation of land use plans developed by the BLM. This generation of planning has been replaced by the Resource Management Plan (RMP).

Management Opportunities – A component of the AMP; actions or management directions that could be taken to resolve issues or management concerns.

Map unit – The basic system of description in a soil survey and delineation on a soil map. Can vary in level of detail.

Medium textured soil - Very fine sandy loam, loam, silt loam, or silt.

Mechanized Equipment - Any machine that uses or is activated by either a living or nonliving power source. This includes, but is not limited to, chain saws, power drills, aircraft, generators, motor vehicles, snow machines, etc. The term does not include shavers, wrist watches or clocks, flashlights, cameras, camp stoves, cell phones, radio transmitters/receivers, GPS units or other similar small hand held or portable equipment.

Mechanized Vehicle (for OHV) - Any vehicle, device, or contrivance that has moving parts for moving people or material in or over land, water, snow, or air. This includes, but is not limited to, sailboats, sailboards, hang gliders, parachutes, bicycles, game carriers, carts, and wagons. It does not include wheelchairs, horses, or other pack stock, skis, snowshoes, nonmotorized river craft, sleds, travois, or similar devices without moving parts.

Migration corridor – The habitat pathway an animal uses to move from one place to another.

Mineral Estate – Refers to the ownership of minerals at or beneath the surface of the land.

Mitigation – Measures designed to counteract environmental impacts or to make impacts less severe.

Monitoring – The periodic and systematic collection of resource data to measure progress toward achieving objectives.

Monitoring and Evaluation – The collection and analysis of data to evaluate the progress and effectiveness of on-the-ground actions in meeting resource management goals and objectives.

Motor Vehicle - Any vehicle, device, or contrivance which is self-propelled and is used for moving people or materials in or over land, water, snow, or air and is powered by a motor or engine.

Motorized Equipment - Any machine that uses or is activated by a motor, engine, or other power source. This includes, but is not limited to, chain saws, power drills, aircraft, generators, motor vehicles, snow machines, etc. The term does not include shavers, wrist watches or clocks, flashlights, cameras, camp stoves, cell phones, radio transmitters/receivers, GPS units or other similar small hand held or portable equipment.

Multiple Use – Management of public land and its resources to best meet various present and future needs of the American people. This means coordinated management of resources and uses to assure the long-term health of the ecosystem.

N

National Environmental Policy Act of 1969 (NEPA) – Law requiring all federal agencies to evaluate the impacts of proposed major federal actions with respect to their significance on the human environment.

National Wildlife Refuge (NWR) – An area administered by the U.S. Fish and Wildlife Service for the purpose of managing certain fish or wildlife species.

Naturalness (a primary wilderness value) – An area that generally appears to have been affected primarily by the forces of nature with the imprint of people's work substantially unnoticeable.

Noxious Weed – A plant specified by law as being especially undesirable, troublesome, and difficult to control. A plant species designated by federal or state law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or nonnative, new, or not common to the United States. According to the Federal Noxious Weed Act (PL 93-639), a noxious weed is one that causes disease or has other adverse effects on man or his environment and therefore is detrimental to the agriculture and commerce of the United States and to the public health.

O

Objectives (management) – In this EIS, refers to indicators used to measure progress toward attainment of goals. They address short- and long-term actions taken to meet goals and the desired ranges of future conditions.

Off-Highway Vehicle (OHV) – Any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding the following: 1) any nonamphibious registered motorboat; 2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly permitted by the authorized officer, or otherwise officially approved; 4) vehicles in official use; and 5) any combat or combat support vehicle when used in times of national defense emergencies.

P

Perennial – A plant that lives for three or more years.

Perennial stream – A stream in which water is present during all seasons of the year.

Permeability – The quality of the soil that enables water to move downward through the profile, measured as the number of inches per hour that water moves downward through the saturated soil.

pH value – A numerical designation of acidity and alkalinity in soil.

Playa Lake – A shallow lake that is seasonally dry. Soils on the lake bottom are usually quite alkaline.

Pluvial – Referring to a period of greater rainfall.

Pluvial Lake – A lake formed during a period of exceptionally high rainfall (e.g., a time of glacial advance during the Pleistocene epoch) and now either extinct or existing as a remnant, such as Lake Bonneville.

Point source pollution – Pollution that comes from a single identifiable source such as a smokestack, a sewer, or a pipe.

Prescribed burning – Controlled application of fire to wildland fuels in either their natural or modified state, under specified environmental conditions which allow the fire to be confined to a predetermined area and at the same time to produce the fire line intensity and rate of spread required to attain planned resource management objectives.

Prescribed fire – Any fire ignited by management actions to meet specific objectives. A written and approved prescribed fire plan must exist, and NEPA requirements must be met prior to ignition. The introduction of fire to an area under regulated conditions for specific management purposes (usually vegetation manipulation).

Prescribed Natural Fire - A naturally-ignited fire that is managed for resource benefits. Currently called Wildland Fire Use.

Prescription – Written statement defining objectives to be attained, as well as measurable criteria which guide the selection of appropriate management actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social or legal considerations under which the fire will be allowed to burn.

Primary wilderness values – The primary or key wilderness values described in the Wilderness Act by which WSAs and wildernesses are managed to protect and enhance the wilderness resource. Values include roadlessness, naturalness, solitude, primitive and unconfined recreation, and size.

Primitive and unconfined recreation (a primary wilderness value) – nonmotorized and undeveloped types of outdoor recreation activities. Refers to wilderness recreation opportunities such as nature study, hiking, photography, backpacking, fishing, hunting, and other related activities. Does not include the use of motorized vehicles, bicycles, or other mechanized means of travel.

Proper Functioning Condition (PFC) – PFC is both a qualitative method for assessing the physical function of riparian-wetland areas, and a defined condition of a riparian-wetland area.

Public lands – Any land or interest in land owned by the citizens of the United States and administered by the Secretary of the Interior through the BLM as defined in the FLPMA.

Q

R

Rangeland – Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Range site – An area of rangeland where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. A range site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other range sites in kind or proportion of species or total production.

Record of Decision (ROD) – An official document in which a deciding official states the alternative that will be implemented from a prepared Final EIS.

Recreation site – An area where management actions are required to provide a specific recreation setting and activity opportunities, to protect resource values, provide public visitor safety and health, and/or to meet public recreational use demands and recreation partnership commitments. A site may or may not have permanent facilities.

Recreational river – A river or section of a river that is readily accessible by road or railroad. It may have had some development along the shorelines and may have undergone some impoundments or diversions in the past.

Research Natural Area (RNA) – An area where natural processes predominate and which is preserved for research and education. Under current BLM policy, these areas must meet the relevance and importance criteria of ACECs and are designated as ACECs. An area of significant scientific interest that is designated to protect its resource values for scientific research and study.

Resource advisor – Resource specialist responsible to the incident commander for gathering and analyzing information concerning values-at-risk that may be impacted by fire or fire suppression activities.

Resource Area – The "on-the-ground" management unit of the BLM comprised of BLM administered land within a specific geographic area.

Resource Area Profile – A component of the AMP; a description of the current condition, amount, location, use, and demands of the natural resources in a Resource Area.

Resource Management Plan (RMP) – Current generation of land use plans developed by the BLM under the Federal Land Policy and Management Act. Replaces the older generation Management Framework Plans. Provides long-term (up to 20 years) direction for the management of a particular area of land and its resources, usually corresponding to a BLM Resource Area.

Right-of-way (ROW) – A permit or an easement which authorizes the use of public land for certain specified purposes, commonly for pipelines, roads, telephone lines, electric lines, reservoirs, etc; also, the reference to the land covered by such an easement or permit.

Right-of-way corridor – A parcel of land that has been identified by law, Secretarial Order, through a land use plan, or by other management decision as being the preferred location for existing and future right-of-way grants and suitable to accommodate one type of right-of-way or one or more rights-of-way which are similar, identical or compatible.

Riparian area – Area with distinctive soil and vegetation between a stream or other body of water and the adjacent upland; includes wetlands and those portions of floodplains and valley bottoms that support riparian vegetation.

Risk assessment – Assessing the chance of fire starting, naturally- or human-caused, and its potential risk to life, resources and property.

Road - Constructed or evolved transportation route that is normally maintained for regular use (except during periods of closure) that can be reasonably and prudently driven by motorized or mechanized vehicles.

Route - A linear ground transportation feature such as a way or road.

S

Salable Minerals – High volume, low value mineral resources including common varieties of rock, clay, decorative stone, sand, gravel, and cinder.

Scenic river – A river, or section of a river, that is free of impoundments and whose shorelines are largely undeveloped but accessible in places by roads.

Scoping – The process of identifying the range of consideration, issues, management concerns, preliminary alternatives, and other components of an environmental impact statement or land-use planning document. It involves both internal and external, or public, involvement.

Section 202 lands – Lands being considered for wilderness designation under Section 202 of the Federal Land Policy and Management Act of 1976.

Sensitive species – Species identified by a Forest Service regional forester, or BLM state director, for which population viability is a concern either (a) because of significant current or predicted downward trends in population numbers or density, or (b) because of significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

Seral – Refers to the sequence of transitional plant communities during succession. Early-seral refers to plants that are present soon after a disturbance or at the beginning of a new successional process (such as seedling or sapling growth stages in a forest); mid-seral in a forest would refer to pole or medium sawtimber growth stages; late- or old-seral refers to plants present during a later stage of plant community succession (such as mature and old forest stages).

Seral stage –The developmental phase of a forest stand or rangeland with characteristic structure and plant species composition. The rated departure of a plant community from a described PNC for a specific ecological site. Low-seral stage is an existing plant community which is defined as 0 to 25 percent comparability to the defined PNC; Mid-seral stage is an existing plant community which has 26 to 50 percent comparability to the PNC; Late seral stage is 51 to 75 percent comparable to the PNC; PNC is an existing plant community with 76 to 100 percent comparability to the defined PNC.

Slope – The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Soil association – A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single soil map unit.

Soil classification – The systematic arrangement of soils into groups or categories on the basis of their characteristics.

Soil compaction – An increase in soil bulk density of 15 percent or more from the undisturbed level.

Soil complex – A map unit of two or more kinds of soils in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping.

Soil Horizon - A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes.

Soil profile – A vertical section of the soil extending through all its horizons and into the parent material.

Soil series - A nationally defined soil type set apart on distinct soil properties that affect use and management. In a soil survey, this includes a group of soils having profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Soil survey – A field investigation resulting in a soil map showing the geographic distribution of various kinds of soil and an accompanying report that describes the soil types and interprets the findings.

Soil texture – The relative proportions of sand, silt, and clay particles in a mass of soil.

Solitude (a primary wilderness value) – The state of being alone or remote from habitations; a lonely, unfrequented, or secluded place. The intent is to evaluate the opportunity for solitude in comparison to habitations of people.

Special Recreation Management Area (SRMA) – An area where recreation is the principal management objective, where intensive recreation management is needed, and where more than minimal recreation related investments are required.

Special Status Species – Plant or animal species known or suspected to be limited in distribution, rare or uncommon within a specific area, and/or vulnerable to activities which may affect their survival. Lists of Special Status Species are prepared by knowledgeable specialists through the State of Oregon; the BLM prepares a list of state sensitive species predominantly based on the list prepared biennially by the ONHP.

Stand – A community of trees occupying a specific area and sufficiently uniform in species, age, spatial arrangement and condition as to be distinguishable from trees on surrounding lands.

State Implementation Plan (SIP) – A document prepared by each state describing existing air quality conditions and measures that will be taken to attain and maintain national ambient air quality standards.

State Listed Species – Any plant or animal species listed by the State of Oregon as threatened or endangered within the state under ORS 496.004, ORS 498.026, or ORS 564.040.

Step-down – The process of applying broad-scale science findings and land use decisions to site specific areas using a hierarchical approach (subbasin review) of understanding current resource conditions, risks, and opportunities.

Stream channel – The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

Subalpine – A terrestrial community that is generally found in harsher environments than the montane terrestrial community. Subalpine communities are generally colder than montane and support a unique clustering of wildlife species.

Subbasin review – An interagency collaborative consideration of resources, resource management issues, and management recommendations for one or more subbasins or watershed drainages approximately 800,000 to 1,000,000 acres in size, equivalent to a 4th-field HUC.

Subwatershed – A drainage area of approximately 20,000 acres, equivalent to a 6th-field HUC. Hierarchically, subwatersheds (6th-field HUC) are contained within a watershed (5th-field HUC), which in turn is contained within a subbasin (4th-field HUC).

Succession – A predictable process of changes in structure and composition of plant and animal communities over time. Conditions of the prior plant community or successional stage create conditions that are favorable for the establishment of the next stage. The different stages in succession are often referred to as "seral stages." (See Seral.)

Sustainability – (1) meeting the needs of the present without compromising the abilities of future generations to meet their needs; emphasizing and maintaining the underlying ecological processes that ensure long-term productivity of goods, services, and values without impairing productivity of the land. (2) In commodity production, refers to the yield of a natural resource that can be produced continually at a given intensity of management.

Supplemental wilderness values – Includes ecological (e.g., vegetation, wildlife, and overall biological/botanical processes and values associated with the natural environment), geological, scientific, educational, scenic, and historic values. When present, they can enhance primary wilderness values, but are not mandated by Congress.

Sustained yield – Maintenance of an annual or regular periodic output of a renewable resource from public land consistent with the principles of multiple use.

T

Terrestrial communities – Groups of cover types with similar moisture and temperature regimes, elevational gradients, structures, and used by vertebrate wildlife species.

Threatened Species – Any plant or animal species defined under the ESA as likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Listings are published in the *Federal Register*.

Trend – The direction of change in ecological status observed over time. Trend is described as toward or away from the PNC, or as not apparent.

U

Upland (geology) – Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Utilization – The proportion or degree of the current year's forage production that is consumed or destroyed by animals (including insects). Utilization may refer either to a single plant species, a group of species, or to the vegetation as a whole. Utilization is synonymous with use.

V

Values-at-risk – Any or all natural resources, improvements, or other values which may be jeopardized if a fire occurs (value-at-risk, risk of resource values).

Visual Resource Management (VRM) Objectives
Class I - The objective of this classification is to preserve the existing character of the landscape. This class provides for natural ecological changes and limited management activity. The level of change should be very low and must not attract attention. Class I is assigned to those areas where a management decision has been made to preserve a natural landscape.

Class II-The objective of this classification is to retain the existing character of the landscape. The level of change to landscape characteristics should be low. Management activities may be seen but should not attract the attention of a casual observer. Any changes must conform to the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. This class represents the minimum level of VRM for WSAs.

Class III-The objective of Class III is to partially retain the existing character of the landscape. Moderate levels of change are acceptable. Management activities may attract attention but should not dominate the view of a casual observer. Changes should conform to the basic elements of the predominant natural features of the characteristic landscape.

Class IV-The objective of Class IV is to provide for management activities that require major modification of the landscape. These management activities may dominate the view and become the focus of viewer attention; however, every effort should be made to minimize the impact of these projects by carefully locating activities, minimizing disturbance, and designing the projects to conform to the characteristic landscape.

W

Way - A travel route in a WSA maintained solely by the passage of vehicles which has not been improved and/or maintained by mechanical means to ensure relatively regular and continuous use.

Wild River - A river or section of a river that is free of impoundments and generally inaccessible except by trail, with watersheds and shorelines essentially primitive and waters unpolluted.

Wildland Fire - A general category of lightning or human-ignited fire in natural vegetation. Includes wildland fires, prescribed fires, and fire managed for resource benefits.

Wildland Fire Use - An unplanned ignition that is managed for resource benefits. Formally called Prescribed Natural Fire.

Withdrawal – Withholding an area of federal land from settlement, sale, location, or entry, under some or all of the general land laws, for the purpose of limiting activities under those laws in order to maintain other public values in the area or reserving the area for a particular public purpose or program; or transferring jurisdiction over an area of federal land, other than "property" governed by the Federal Property and Administrative Services Act, as amended (40U.S.C.472) from one department, bureau, or agency to another department, bureau, or agency.

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