

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

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VOLUME 3

Appendix U

Steens Mountain Wilderness and Wild and Scenic Rivers Management Plan

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## ACRONYMS

*Reader note: Refer to the list below for acronyms that may be used in this management plan.*

### **ACRONYM   DEFINITION**

ACEC	Area of Critical Environmental Concern
AML	Appropriate Management Level
AMU	Andrews Management Unit / The Planning Area outside of the Steens Mountain CMPA
BCB	Back Country Byway
BLM	Bureau of Land Management
BMPs	Best Management Practices
CAA	Clean Air Act
CCD	Census County Divisions
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMPA	Steens Mountain Cooperative Management and Protection Area
CWA	Clean Water Act
DEQ	Oregon Department of Environmental Quality
DO	District Office
EA	Environmental Assessment
ESA	Endangered Species Act
°F	Degrees Fahrenheit
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
ID	Interdisciplinary
Malheur NWR	Malheur National Wildlife Refuge
MFP	Management Framework Plan
MOU	Memorandum of Understanding
MRDG	Minimum Requirement Decision Guide
NEPA	National Environmental Policy Act
OAR	Oregon Administrative Rule
ODFW	Oregon Department of Fish and Wildlife
ONHP	Oregon Natural Heritage Program
ORV	Outstandingly Remarkable Value
OWRD	Oregon Water Resources Department
PFC	Proper functioning condition
PL	Public Law
PNC	Potential Natural Community
Policy	Federal Wildland Fire Management Policy and Program Review
RA	Resource Area
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
SMAC	Steens Mountain Advisory Council
SRP	Special Recreation Permit
USDI	United States Department of Interior
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service

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USGS	United States Geological Survey
VRM	Visual Resource Management
WIS	Wilderness Information Specialist
WQRP	Water Quality Restoration Plan
WSA	Wilderness Study Area
WSR	Wild and Scenic River

## 1 INTRODUCTION

The Bureau of Land Management (BLM) is the agency responsible for managing Steens Mountain Wilderness and three National Wild and Scenic Rivers (WSRs). The Donner und Blitzen WSR system has nine river segments, the Wildhorse WSR system has two river segments, and the Kiger WSR has one river segment. All 12 of the river segments fall within the Steens Mountain Cooperative Management and Protection Area (CMPA). The CMPA is part of the BLM's Andrews and Three Rivers Resource Areas (RAs) in the Burns District and is located in Harney County, Oregon (Map W1).

### 1.1 Background

On October 30, 2000, the Steens Mountain Cooperative Management and Protection Act of 2000 (Steens Act), was signed into law, providing specific protection to approximately 900,000 acres of public land in southeastern Oregon. The Steens Act is the culmination of a cooperative effort between Oregon's Congressional delegation, Oregon's Governor, and the Secretary of the Interior to forge legislation that will provide long-term protection to the cultural, economic, ecological, and social health of the Steens Mountain area. The Steens Act safeguards an extraordinary landscape displaying geologic uplifts, deep glacier carved gorges, stunning scenery, wilderness, wild rivers, a rich diversity of plant and animal species.

The Steens Act designated the 426,156 acre CMPA that is managed collaboratively to conserve, protect, and manage the long-term ecological integrity of Steens Mountain for future and present generations. Within this area, cooperative and innovative management projects will be encouraged and implemented between the BLM, private landowners, tribes, and other public interests. Sustainable grazing and recreational use, including fishing and hunting, will be continued where consistent with the purpose of the Steens Act.

Within the CMPA, the Steens Act designated 170,084 acres as Steens Mountain Wilderness, whose primitive landscapes and wild natural resources cover the top, flanks, and gorges of the mountain (Map W2). Also established was a 97,229 acre No Livestock Grazing Area with 94,959 acres located within Steens Mountain Wilderness. This is the first Congressionally designated No Livestock Grazing Area in a wilderness in the United States.

The Steens Act also designated the Wildhorse and Kiger as WSRs and added Mud Creek, Ankle Creek, and the South Fork of Ankle Creek to the existing Donner und Blitzen WSR system which was originally designated in 1988 by the Omnibus Oregon WSRs Act (Maps W2 and W3). Portions of the Donner und Blitzen WSR were identified by the Steens Act as the Redband Trout Reserve (RTR). The RTR was created to conserve, protect, and enhance the Donner und Blitzen River population of redband trout and the unique ecosystem of plants, fish, and wildlife of a river system; and to provide opportunities for scientific research, environmental education, and fish and wildlife oriented recreation, and access to the extent compatible with the above purpose. Almost all of these river segments fall within Steens Mountain Wilderness. The Steens Act states that where management requirements for a stream segment described in the amendments made by this section differ between the Wild and Scenic Rivers Act (WSRs Act) (16 U.S.C. 1271 et seq.) and the Steens Mountain Wilderness Area, the more restrictive requirements of the 1964 Wilderness Act shall apply.

### 1.2 Plan Purpose

The purpose of this management plan is to provide management guidance for Steens Mountain Wilderness and the WSRs within the CMPA. Since most of the designated WSRs fall within Steens Mountain Wilderness, both will be managed under this integrated management plan. This management plan is designed to set guidelines for on-the-ground management and for any future project planning efforts. Management actions may be modified or initiated as additional resource and visitor data become available.

### 1.3 Relationship to BLM Planning

This management plan is a component of the Proposed Resource Management Plan (RMP)/Final Environmental Impact Statement (FEIS) for the Andrews Management Unit (AMU)/Steens Mountain CMPA. The Proposed RMP/FEIS addresses a spectrum of major issues and analyzes five alternatives to resolve these issues. The Steens Mountain Wilderness and WSRs Management Plan is an activity plan, tiered to the analysis in the Proposed RMP.

#### **1.4 Public Involvement**

Public involvement for this management plan was completed as part of the RMP process. Public involvement activities included mass mailing a scoping brochure, holding public meetings, meeting with local governments and tribal government officials, and mailing the Summary of the Analysis of the Management Situation (USDI 2002) and Draft RMP/Draft EIS to interested groups and individuals. When published with the Proposed RMP/FEIS, the Steens Mountain Wilderness and WSRs Management Plan will be available for a 30-day public comment period. The final Steens Mountain Wilderness and WSRs Management Plan will be made available with the CMPA RMP Record of Decision.

#### **1.5 Steens Mountain Advisory Council**

As part of the Steens Act, the Secretary of the Interior established the 12 member Steens Mountain Advisory Council (SMAC) to advise the Secretary in managing the CMPA and in promoting cooperative management. The SMAC's purpose is to provide representative advice and recommendations to the BLM regarding (1) new and unique approaches to management of the land within the bounds of the CMPA; (2) cooperative programs and incentives for landscape management that meet human needs, and maintain and improve the ecological and economic integrity of the area; and (3) preparation and implementation of a management plan for the CMPA.

The SMAC has met regularly since its creation in August 2001. Each meeting generally lasts two full days and is advertised in local and regional papers, on the internet, and through a Federal Register notice to ensure the public has an opportunity to participate. Meetings have been held in Bend, Burns, and Frenchglen to accommodate local and regional public involvement. The SMAC has taken an in-depth look at management of the CMPA and has provided specific advice on Steens Mountain Wilderness and WSRs Management Plan.

#### **1.6 Plan Organization**

This document is presented in five chapters:

- Chapter 1: Introduction - provides background and public involvement information on the Planning Area.
- Chapter 2: Area Overview - provides an overview of the Planning Area.
- Chapter 3: Management Goals and Objectives - provides guidance on the overall management goals for the Planning Area.
- Chapter 4: Management Strategy - provides a management strategy for the Planning Area.
- Chapter 5: Monitoring Strategy - provides a monitoring strategy for the Planning Area.

Attachments 1 and 2 at the end of this management plan provide more detailed information and background related to the Planning Area.

## 2 AREA OVERVIEW

This section contains general background information about Steens Mountain Wilderness and the three designated WSRs. Included is information about boundaries, public access, land ownership, history, unique wilderness attributes, and outstandingly remarkable values (ORVs) for the WSRs.

### 2.1 General Location and Boundaries

Steens Mountain Wilderness and WSRs segments fall entirely within the 426,156 acre CMPA. The CMPA is located approximately 70 miles south of the community of Burns and 360 road miles from Portland in Harney County, Oregon. Steens Mountain Wilderness is within an area generally bounded on the west by State Highway 205, on the west and south by the Catlow Valley Road, on the east by East Steens Road, and on the north by part of the Steens Loop Road (Map W2).

The Steens Mountain Wilderness lies in two segments. The larger eastern portion runs up the east slope of Steens Mountain, starting from the south near Fields and continuing about 35 miles to the northeast, containing much of Kiger Gorge; and northwesterly to include the Cold Springs area, Little Blitzen Gorge, Big and Little Indian Gorges, Wildhorse Canyon, Ankle Creek Basin, and the mainstem of the Donner und Blitzen River to Page Springs.

The separate and smaller western portion of Steens Mountain Wilderness contains Threemile Creek, Home Creek, and Dry Creek Canyons, and a portion of the rims on the east side of Catlow Valley. The designated river segments fall generally within Steens Mountain Wilderness.

Where open roads bisect or run adjacent to Steens Mountain Wilderness, the Steens Act authorizes the BLM to determine boundary setbacks for Steens Mountain Wilderness. 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 road centerline along other open roads including Fish Creek, Grove Creek, Cold Springs, Dingle Creek, Wildhorse Lake Overlook, Big Alvord Creek, Newton Cabin, Indian Creek, Weston Basin, Lauserica, Bone Creek, Miners Cabin, Frazer Spring, Roaring Springs Creek, and short sections of other roads. The wilderness boundary is set back 300 feet from the road centerline along sections of the Catlow Valley Road (Long Hollow) and the East Steens Road (south of Indian Creek Road for approximately four miles).

### 2.2 Access

Highway 205 provides two access points to Steens Mountain Wilderness and the WSRs. Frenchglen is the northwest access point, where the Steens Loop Road, also known as the Steens Mountain Backcountry Byway (BCB), heads east along the northern boundary of the larger eastern Steens Mountain Wilderness segment. The Steens Loop Road passes through the narrow highlands of Steens Mountain and then descends over the steep and rough Rooster Comb section, then traverses west to the south entrance to the Steens Loop Road, about 11 miles south of Frenchglen. The Steens Loop Road may be driven in either direction, but drivers may wish to avoid the specific hazards of the Rooster Comb. The Steens Loop Road also provides access to the Donner und Blitzen WSR system including parts of Donner und Blitzen River, Fish Creek, Little Blitzen River, Big Indian Creek, and Little Indian Creek. When traveling the Steens Loop Road, there are several opportunities to park at established overlook points or campgrounds. The Cold Springs Road provides high clearance four-wheel-drive access to the area south of Fish Creek, but is extremely rough and is not a through route. The Wildhorse Lake Overlook Road leads south toward the peak of Steens Mountain and provides a parking area and trail to the overlook of Wildhorse Lake and Wildhorse WSR. The Newton Cabin Road provides parking and hiking access into Ankle Creek Basin.

The East Steens Road provides access to Big Alvord Creek Road, Weston Basin Road, Indian Creek Road, and Bone Creek Road. The Pike Creek Trail is also accessed from East Steens Road. The Bone Creek Road passes through the Steens Mountain Wilderness north of Alvord Peak. A parcel of public land near Penland, north of Andrews, provides a public access for visitors wishing to hike or ride horseback into the Wildhorse WSR from the south. No facilities or developed access presently exist at this site.

The western segment of Steens Mountain Wilderness may be accessed directly from points where public lands reach the Catlow Valley Road right-of-way (ROW), or may be reached from the Steens Loop Road near its south entrance via primitive open roads.

Hiking and horseback riding are unlimited within Steens Mountain Wilderness and WSRs, although trailhead facilities are limited and occur outside of the wilderness. Trailheads include the Blitzen River trailhead at the Page Springs Campground, the Little Blitzen trailhead just east of South Steens Campground, and the Big Indian trailhead within South Steens Campground.

### **2.3 Land Ownership**

Steens Mountain Wilderness includes 170,084 acres of public lands administered by the BLM and 4,668 acres of state and private land inholdings. Approximately 94,959 acres of Steens Mountain Wilderness were designated as a No Livestock Grazing Area. There are 12 designated WSR segments with a total of 105 river miles, most of which fall within Steens Mountain Wilderness and the No Livestock Grazing Area. Approximately 27,324 acres of public lands are administered by the BLM within the river corridor boundaries, along with approximately 4,022 acres of state and private land (see Table 1).

### **2.4 History of Use for Steens Mountain Wilderness and WSRs**

Native Americans inhabited the Steens Mountain region from as early as 10,000 years ago through the late 19<sup>th</sup> century. Burns Paiute tribal members use the Steens Mountain region today for plant gathering and religious practices. The first recorded history of the area began with exploration between 1826 and 1829 for the fur trade by the Snake Country expeditions. While exploring the region and trapping beaver on his third and fifth trips, Peter Skene Ogden came into the Malheur Lake Basin near the Steens. In 1845 the last wagon train led by Steven Meeks mistook the snow-capped Steens for the Cascade Mountains as they entered the Harney Basin.

In 1860, the Army sent Major Enoch Steen to protect the settlers and to determine the feasibility of a road from southeastern Oregon to the Willamette Valley. His party named many prominent topographic features, including Steens Mountain. In 1864, during a thunderstorm, Captain George B. Curry and his command were forced to cross a river on the west slope of the Steens. He named the river “Donder und Blitzen,” which in German means thunder and lightning. Later, the name became the Donner und Blitzen River.

Cattle were driven into the area in 1872 and by the 1900s many cattle ranches had been established in the lush valleys surrounding the Steens. At one time, prior to the passage of the Taylor Grazing Act of 1934, over 100,000 sheep and cattle grazed Steens Mountain.

In the 1940s and 1950s, recreational use started to occur on the Steens. In 1962, the Steens Loop Road was completed, allowing vehicle access to the top of the mountain. Recreational use by the public has been a popular activity since then. In 1972, the BLM recognized the importance of the recreational opportunities and administratively designated the Steens as a Recreation Lands area. In 1991, almost 50,000 visitors came to the Steens area to participate in a variety of recreational activities.

On October 28, 1988, Congress passed the Omnibus Oregon WSRs Act which amended the WSRs Act of 1968 to add 40 new rivers to the National WSRs System. Included were six river segments of the Donner und Blitzen River system.

On October 30, 2000, Congress passed the Steens Act which provided specific protection to approximately 900,000 acres of public land in the Steens Mountain area including the establishment of Steens Mountain Wilderness and the designation of Wildhorse and Kiger WSRs. Three new river segments were also added to the Donner und Blitzen River system.

### **2.5 Steens Mountain Wilderness Overview**

The Steens Act established the CMPA to conserve, protect, and manage the long-term ecological integrity of Steens Mountain for future and present generations. This included designation of Steens Mountain Wilderness. Section 201(a) of the Steens Act requires that Steens Mountain Wilderness be managed in accordance with the Wilderness Act of 1964.

The Wilderness Act of 1964 was passed by Congress to establish a National Wilderness Preservation System. The primary purpose of the Wilderness Act is to protect a designated wilderness area’s naturalness and wildness, while providing for public use and enjoyment in a manner that will leave the wilderness unimpaired for future use.

### 2.5.1 Unique Wilderness Attributes

Some of the most unique attributes of Steens Mountain Wilderness are the scenic vistas and spectacular geology. Visitors can experience a diversity of habitats above tree line, where 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 streams where 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 even a piece of living history, the South Steens wild horse herd, which descended from horses that escaped from early explorers, settlers, miners, Indians, and ranchers. Many other unique features within Steens Mountain Wilderness are described below as the ORVs of the designated WSRs.

### 2.5.2 Wilderness Management Areas

A key premise in the BLM's management strategy is the recognition that all wilderness areas are not the same. Further, within any given wilderness, not all areas provide the same visitor experience or require the same management practices. There can, in fact, be a variety of wilderness settings present based on physical layout, visitor use and patterns of use, degree of past human influences, and management issues. Within Steens Mountain Wilderness, two different settings or areas are identified. These are not rigid, on-the-ground allocations nor do they originate solely from specific conditions in these areas. Rather, they are theoretical descriptions of the range of resource, social, and managerial conditions that the BLM intends to maintain and restore in Steens Mountain Wilderness. Below is a description of each Management Area (Map W2). In this planning process, the boundaries of these two Management Areas are generally defined by the patterns and types of historic use and the physiography of Steens Mountain Wilderness.

#### 2.5.2.1 Gorges Management Area

There are five separate canyons within the Gorges Management Area: 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. This portion of 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. Little Blitzen River, Big Indian Creek, Little Indian Creek, Wildhorse and Little Wildhorse Creek, and Kiger Creek WSRs are in this Management Area.

**Desired Conditions for the 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 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 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.

**Desired Conditions for the Human Environment:** This portion of Steen 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 may be 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. The grazing of recreational stock 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 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.

#### 2.5.2.2 Uplands Management Area

This area of Steens Mountain Wilderness features natural environmental conditions and offers a moderate to high degree of solitude. Natural processes and conditions generally have not been and are not affected by human activity (use). Areas are monitored to protect ecological conditions with effects of human activities minimized. Fish Creek, Donner und Blitzen River, South Fork Donner und Blitzen River, Mud Creek, Ankle Creek, and South Fork Ankle Creek WSRs are in this Management Area.

**Desired Conditions for 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.

**Desired Conditions for the 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 will 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 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 non-wilderness settings. Permits for historic uses consistent with the Wilderness Act as recognized by 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 is provided 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 wilderness.

## 2.6 Wild and Scenic Rivers Overview

In 1968, Congress passed the WSRs Act, establishing a nationwide system of outstandingly free-flowing rivers. The primary purpose of the WSRs Act is to balance river development with river protection and conservation.

A total of 12 designated WSR segments fall within the CMPA. Under the WSRs Act, rivers are classified by Congress as either Recreational, Scenic or Wild usually 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. Several of the river segments within the CMPA have roads, recreation facilities, and historic structures that existed at the time of designation. There is also a concrete bridge that spans the Donner und Blitzen WSR along the South Steens Loop Road. These facilities will continue to be maintained and will be replaced as necessary to provide for public health and safety and resource protection. However, the large majority of the river segments are primitive in character.

The WSRs Act (Section 3(b)) specifies that after a river is designated, the agency charged with its administration must establish a proposed administrative boundary delineating the land area within the corridor that will be managed under the WSRs Act. The WSRs Act specifies that the area within the corridor shall not average more than 320 acres per river mile. See Map W3 or the final proposed corridor boundaries of each river segment.

**Public Lands in Wild and Scenic Rivers Corridors Outside of Steens Mountain Wilderness:** There are 1,204 acres that fall within WSR corridors, but outside of Steens Mountain Wilderness (See Table 1). No site specific management concerns or required actions for protecting river related ORVs are identified for these small parcels.

**Table 1: Summary of Wild and Scenic Rivers Segments**

Segment	Description	ORVs <sup>3</sup>	Miles	Acres	In Wilderness
<b>Donner und Blitzen WSR Segments</b>					
A <sup>1</sup>	Donner und Blitzen	S,G,R,F,W,V	13.9	2540	Except 19 acres in Page Springs Campground and 73 other acres
B <sup>1</sup>	Little Blitzen	S,G,R,F,W,V,C	14.1	6206	Except 850 acres of Riddle Ranch
C <sup>1</sup>	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 <sup>1</sup>	Big Indian Creek	S,G,R,F,W,V	12.2	5165	Except 28 acres along Steens Loop Road
E <sup>1</sup>	Little Indian Creek	S,G,R,F,W,V	4.2	1362	Yes
F <sup>1</sup>	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 <sup>2</sup>	Mud Creek	S,R,F,W	5.1	1515	Yes
H <sup>2</sup>	Ankle Creek	S,R,F,W	6.0 BLM 2.1 Private	1,656 BLM 638 Private	Yes
I <sup>2</sup>	South Fork Ankle Creek	S,R,F,W	1.6	476	Yes
<b>Wildhorse WSR Segments</b>					
J <sup>2</sup>	Little Wildhorse Creek	S,R,W,B	2.6	922	Yes
K <sup>2</sup>	Wildhorse Creek	S,R,W,B	7	2096	Yes
<b>Kiger WSR Segment</b>					
L <sup>2</sup>	Kiger Creek	S,F,W	4.25	1420	Yes

<sup>1</sup>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.

<sup>2</sup>Rivers designated by the Steens Act.

<sup>3</sup>ORVs: S=Scenery, G=Geological, R=Recreational, F=Fish, W=Wildlife, V=Vegetation, B=Botanical, C=Cultural.

### 2.6.1 Outstandingly Remarkable Values

The intent of the WSRs Act is to maintain the free-flowing character of designated rivers and to protect or enhance their values. Those values were termed ORVs by Congress. ORVs are values or opportunities in a river corridor which are directly related to rivers and which are rare, unique, or exemplary from a regional or national perspective. Many of the ORVs described below for the designated river segments also contribute to the unique character of Steens Mountain Wilderness.

#### 2.6.1.1 Donner und Blitzen WSR System

The Donner und Blitzen River system includes the Little Blitzen, South Fork of the Donner und Blitzen, Big Indian, Little Indian, Fish Creek, Mud Creek, Ankle Creek, and South Fork of Ankle Creek river segments. Table 1 shows the ORVs by river segment. Below is a summary description of the ORVs for each segment of the Donner und Blitzen River system.

**Scenic:** Scenic values are ORVs for all nine segments in the Donner und Blitzen WSR system. Several of the river segments contain a diversity of landforms and vegetation that captures the attention of the viewer. The river and its tributaries pass through several vegetation zones which are the result of climatic factors such as temperature and precipitation. The progression from the lower sagebrush/bunchgrass community to the upper subalpine zone gives depth and variety to the different settings from which the observer experiences the scenery. It is one of the greatest qualities of this river system. The upper elevations offer river visitors an opportunity to view glaciated canyons and deep basalt formations of the Donner und Blitzen River WSR. These viewsheds are largely untouched and are in a natural condition.

**Geologic:** Geologic features that are considered ORVs and rare, unusual, or unique in this geographic region are the westward-tilted Steens fault block, exposures of feeder dikes for the Steen Basalt lava flows, glacial features from the Fish Lake Advance ice cap such as kettle holes and glacial erratics, and glacial features from the Blitzen Advance valley glaciers such as U-shaped gorges and cirques. The 9,700-foot elevation at the eastern edge of Steens Mountain allowed the formation of alpine glaciers less than one million years ago. Gorges carved by the glaciers are as much as 2,000 feet deep and expose layers of Steens Basalt. Fish Creek, Little Blitzen River, Big Indian Creek, and Little Indian Creek are in deeply glaciated gorges and flow westward across the Steens fault block to the Donner und Blitzen River. The unglaciated river segments generally have rimrock views of Steens Basalt that are nearly 100 feet above river level.

**Recreational:** Recreation is an ORV for all nine segments in the Donner und Blitzen WSR system. Existing recreation uses that are exceptional in quality include fishing, hunting, hiking, photography, wildlife, and scenic viewing. Many of these river segments are very natural in character and offer visitors many areas to experience solitude in a primitive setting. The river segments provide a rare two to four day backpack trip or horseback experience for individuals with moderate skill levels. Portions of the Oregon High Desert National Recreation Trail are within sections of the river canyons.

**Fish:** Fisheries resources are an ORV for all nine segments in the Donner und Blitzen WSR system. Fish species in the Donner und Blitzen River above the Page Springs Weir include redband trout, mountain whitefish, redband shiner, longnose dace, and mottled sculpin. The redband trout is the most common sport species found in the system. The Donner und Blitzen River system supports a wild, native redband trout population, which was recognized as an ORV by Congress in the Omnibus Oregon WSRs Act of 1988. Historically, the Donner und Blitzen River and its tributaries have provided excellent angling for native redband trout and are recognized by anglers as some of Oregon's finest wild trout streams. Additionally, redband trout and Malheur mottled sculpin are recognized by the BLM as special status species.

**Wildlife:** Wildlife resources are an ORV for all nine segments in the Donner und Blitzen WSR system. The Donner und Blitzen drainage is highly valued for its abundant wildlife. The river area and adjacent uplands are used by many wildlife species. Currently, no known Native American cultural use of wildlife has been identified. Mule deer winter along the lower four miles of the Donner und Blitzen River and the lower four miles of Fish Creek. Deer summer in the upper parts of the area. The ridge between Big Indian and Little Indian provides habitat for a high number of large bucks during the summer months. Rocky Mountain elk occasionally use the lower elevations of the drainages during the summer and winter. Pronghorn antelope use the open terrain adjacent to the corridor in certain areas. Pikas are found in the talus slopes near the head of Little Blitzen gorge.

Raptors nest along the canyon rims of the Donner und Blitzen River and its tributaries. Common species are American kestrel and great horned owls. Turkey vultures and ravens also nest in these cliffs. One prairie falcon aerie has been located along the Little Blitzen gorge. A bald eagle (federally listed Threatened) winter roost probably exists in the lower portions of the Donner und Blitzen River. Chukars and California quail are found along the river at the lower elevations, while sage-grouse summer in the upper areas of the river in flatter terrain. Migratory birds use this corridor for nesting where willows and cottonwoods provide suitable habitat. Black rosy finches nest in the subalpine vegetation above Little Blitzen gorge, a rare occurrence in Oregon.

**Vegetation:** Within the Donner und Blitzen WSR system, the Donner und Blitzen River, Little Blitzen River, the South Fork of the Donner und Blitzen River, Big Indian Creek, Little Indian Creek, and Fish Creek have a diversity of plant communities that are considered an ORV. Currently, no known Native American cultural use of vegetation is identified in the river corridor. Vegetation includes riparian zones dominated by willows, western birch, mountain alder, black cottonwood, and quaking aspen, as well as other species. 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 within this system. The uplands include areas dominated by big sagebrush, western juniper, mountain mahogany, quaking aspen, and mountain snowberry with Idaho fescue, bluebunch wheatgrass, needlegrasses, and numerous other species in the understory.

Many sensitive plant species have been documented within the river corridors. These include species which are endemic to Steens Mountain, species which occur in Oregon only on the Steens, and other species of special interest.

**Cultural:** The Little Blitzen River is the only river segment in the Donner und Blitzen WSR with cultural resources as an ORV. The Riddle Brothers Ranch is listed on the National Register of Historic Places. This district covers 1,120 acres of public land along the Little Blitzen WSR, of which approximately 850 acres lie within the WSR corridor. Three complexes of structures are included in the historic district. Structures at the main complex include a house, root cellar, bunkhouse, chicken house, storage building, tack room, barn, and corrals built of willows and juniper. Another complex includes a house, root cellar, and stone storage building, while the smallest complex has a log house and split rail fences. The Walter Riddle Ranch House was destroyed by wildfire in 1996.

#### 2.6.1.2 Wildhorse WSR System

The Wildhorse WSR includes Wildhorse Creek and Little Wildhorse Creek river segments. The ORVs identified for Wildhorse and Little Wildhorse Creek include Scenic, Recreational, Wildlife, and Botanical and are described below.

**Scenic:** Both river corridors offer outstanding opportunities to view glacier formed canyons and several other significant geologic features. These include two glacial lakes, formed in cirques. Another significant scenic quality is that these are the only major canyons which drop off the east face of Steens Mountain, resulting in spectacular views of geology and extensive landscape vistas all in one setting. Both creeks exhibit good examples of past glacial activity, erosional processes, and the tilting action of a massive fault block mountain.

**Recreational:** These river corridors offer many opportunities for primitive recreation, as well as solitude, especially in the upper pristine areas. The geologic formations and the lakes present many scenic features for visitors. These opportunities, combined with similar opportunities in the area, are enough to attract visitors from outside the region. A portion of the Oregon High Desert National Recreation Trail traverses Wildhorse and Little Wildhorse canyons.

**Wildlife:** These river corridors provide habitat for California bighorn sheep and a wide variety of wildlife from the headwaters to the canyon mouth. Species rarely seen in other places, such as pika at upper elevations, can be glimpsed by observant visitors in these two canyons. Little Wildhorse Creek contains excellent riparian habitat at higher elevations. Wildhorse Lake and Little Wildhorse Lake provide vernal high elevation pools, talus and cliffs, willows, and adjacent upland vegetation which together provide a high diversity of wildlife habitats.

**Botanical:** The headwaters of Little Wildhorse Creek are designated as a Research Natural Area (RNA)/Area of Critical Environmental Concern (ACEC) for a mid to high elevation lake and associated ecosystem. This RNA/ACEC was designated to protect the area for scientific study opportunities. Wildhorse Creek and Little Wildhorse Creek, above their confluence, contain interesting and unique assemblages of vegetative communities.

### 2.6.1.3 Kiger WSR

The ORVs identified for Kiger Creek include Scenic, Wildlife, Fish, and Botanical and are described below.

**Scenic:** Kiger Creek is one of the most prominent canyons in the Steens Mountain area and offers a spectacular display of past glacial activity. The long corridor can be seen from miles away, and is identifiable by its own unique geologic feature, the “notch.” The U-shaped gorge is a classic example of a glaciated canyon. On a clear day, scenic vistas of the wide open landscape extend as far as one can see.

**Wildlife:** Elevation gradient and canyon slopes provide a highly diverse habitats associated with the riparian area. Pikas may be present in the talus slopes near the head of the canyon. Bighorn sheep use the eastern slope of the gorge, with elk and mule deer using this area extensively during the summer months. Aspen, western juniper, cottonwood, beaver ponds, and large spring areas contribute to habitat diversity. Riparian dependent species may be present in the riparian areas.

**Fish:** Kiger Creek provides habitat for wild, native redband trout as part of the Donner und Blitzen River system. Additionally, Malheur mottled sculpin, mountain whitefish, and longnose dace have been observed in Kiger Creek downstream of the WSR segment. The redband trout and Malheur mottled sculpin are recognized by the BLM as special status species.

**Botanical:** The west rim of the Kiger WSR contains unique botanical sites. Wet meadows interspersed with willow hummocks are habitat for several special status plant species including pinnate grapefern, Cusick’s draba, and foetid sedge. The dryer, rocky areas adjacent to the meadows contain Steens Mountain penstemon, weak-stemmed stonecrop, and sky pilot. Located above the meadows are cirque lakes perched on the side of the canyon wall at the edges of lateral moraines. The areas around these lakes display vegetation that grows in other parts of the canyon, but later in the season due to late-lying snowdrifts.

### 3 MANAGEMENT GOALS AND OBJECTIVES

The general management of Steens Mountain Wilderness and the WSR segments is guided by three pieces of Congressional legislation: the Steens Act of 2000, the Wilderness Act of 1964, and the WSRs Act of 1968. The Steens Act provides purposes and objectives for the CMPA including Steens Mountain Wilderness and the WSR segments. The Steens Act mandated that where management requirements differ between the WSRs Act and the Wilderness Act, that the more restrictive requirements shall apply.

#### 3.1 Steens Mountain Cooperative Management and Protection Act

The Steens Act established the CMPA to conserve, protect, and manage the long term ecological integrity of Steens Mountain for present and future generations. This included the designation of Steens Mountain Wilderness. Section 101(b) of the Steens Act also identified five specific objectives which include the following:

1. To maintain and enhance cooperative and innovative management projects, programs and agreements between tribal, public, and private interests in the Cooperative Management and Protection Area.
2. To promote grazing, recreation, historic, and other uses that are sustainable.
3. To conserve, protect, and to ensure traditional access to cultural, gathering, religious and archaeological sites by the Burns Paiute Tribe on federal lands and to promote cooperation with private landowners.
4. 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.
5. To promote and foster cooperation, communication, understanding, and to reduce conflict between Steens Mountain users and interests.

#### 3.2 Steens Mountain Wilderness Guidance

The Steens Act requires that Steens Mountain Wilderness be administered in accordance with the Steens Act and the Wilderness Act. The Wilderness Act provides four main goals that guide the management of statutory wilderness. These goals are also reiterated as the standard goals for BLM wilderness management plans as directed in BLM Manual 8561, Appendix 1. The goals are as follows:

**1. Wilderness Character:** To provide for the long-term protection and preservation of the area's wilderness character under a principle of nondegradation. The area's natural condition, opportunities for solitude, opportunities for primitive and unconfined types of 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. Wilderness Use:** To manage the wilderness 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 resource will be dominant in all management decisions where a choice must be made between preservation of wilderness character and visitor use.

**3. Minimum Requirement Decision:** To manage the area using the minimum tool, equipment, or structure necessary to successfully, safely and economically accomplish the objective. The chosen tool, equipment, or structure should be 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. Nonconforming Uses:** To manage nonconforming but accepted 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.

### **3.3 Wild and Scenic Rivers Guidance**

The WSRs Act provides three main goals that guide the management of designated river segments:

1. **Free-Flowing Characteristics:** The free-flowing characteristics of all designated WSR segments shall be protected. The WSRs Act specifically prohibits designated river segments from future hydropower development.
2. **Outstandingly Remarkable Values:** The ORVs identified for each designated river segment shall be protected and improved.
3. **Wild Classification:** The river characteristics necessary to support the Wild classification of each designated river segment should be protected and improved. Several of the river segments have roads, recreation facilities, and historic structures that existed at the time of designation. There is also a concrete bridge that crosses Donner und Blitzen WSR along the South Steens Loop Road. These facilities will continue to be maintained and will 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.

### **3.4 Other Guidance**

Additional guidance related to the management of wilderness and WSRs is provided in the BLM's Manual 8560 for Management of Designated Wilderness Areas (April 1983), H-8560-1 Manual Handbook for Management of Designated Wilderness Areas (July 1988), 8561 Manual for Wilderness Management Plans, and the 8351 Manual for Wild and Scenic Rivers - Policy and Program Direction for Identification, Evaluation, and Management (May 1992). Other guidance for wilderness can be found at Title 43 of the Code of Federal Regulations (43 CFR), Part 6300 and for WSRs at 43 CFR, Part 8351.2. This guidance will be incorporated into any management activities that take place in Steens Mountain Wilderness or the WSR corridors. New guidance will be incorporated into this management plan as these manuals are periodically updated, or as any other new guidance becomes available.

## 4 MANAGEMENT STRATEGY

Most of the WSR corridors are located within Steens Mountain Wilderness. The Steens Act mandated that where management requirements differ between the WSRs Act and the Wilderness Act, the more restrictive requirements shall apply. In recognition of the overlap between Steens Mountain Wilderness and WSRs, this section of the management plan provides an integrated management strategy that focuses on protecting and improving wilderness values, which inherently includes WSRs. However, information or actions with a WSR emphasis will be specifically addressed where necessary. The guidance described under each of the four management elements is meant to provide overall guidance for Steens Mountain Wilderness and WSRs. As project implementation occurs, the Minimum Requirement Decision Guide (MRDG) will be used as part of the project planning process. Management actions may be modified or initiated as additional resource and visitor data become available (See Chapter 5: Monitoring Strategy).

### 4.1 Wild and Scenic Rivers Management Assumptions

1. In general, requirements associated with the protection of wilderness resources are more restrictive than those for WSRs with a Wild River classification.
2. Unless otherwise addressed, the protection of wilderness resources and character will provide adequate protection for the ORVs within the WSR corridors. There are only 162 acres of BLM administered lands that fall outside of Steens Mountain Wilderness, Riddle Brothers Ranch, Wilderness Study Areas (WSAs), developed recreation sites or existing roads (See Table 1). No site specific management concerns or required actions for protecting river related ORVs are identified for these small parcels.
3. Any management action or project proposed for Steens Mountain Wilderness that also falls within a designated WSR corridor will be screened for compliance with requirements of the WSRs Act.

### 4.2 Wilderness Minimum Requirement Decision Guide

The development of the MRDG was an interagency effort between the United States Forest Service (USFS), the National Park Service, the BLM, and the United States Fish and Wildlife Service (USFWS) with assistance from the Arthur Carhart National Wilderness Training Center. The guide was developed to provide consistency in evaluating project proposals in wilderness to help determine that decisions strive toward maintaining or improving wilderness character. There are two steps to the minimum requirements analysis: 1) to determine if the project or activity proposed is the minimum necessary for administration of the area for the purposes of the Wilderness Act, and 2) to determine which tool(s) will have the least effect on the wilderness resource. Any analysis required by the National Environmental Policy Act (NEPA) for project implementation in Steens Mountain Wilderness or WSRs that fall within Steens Mountain Wilderness will be preceded by a Minimum Requirement Decision evaluation.

The minimum requirement analysis is meant to assist, not replace, the analysis required by the NEPA. The management direction described in the elements below is meant to provide overall guidance for Steens Mountain Wilderness and WSRs. As project implementation occurs, the MRDG will be used as part of the project planning process.

### 4.3 Wilderness Administrative Elements

Steens Mountain Wilderness falls within the CMPA in the Andrews RA of the BLM's Burns District Office (Burns DO). The BLM also actively manages other programs within these areas including recreation, range, wildlife habitat, soils, watershed, wild horses, and cultural resources.

Administrative responsibilities are vested with the Andrews Field Manager and are carried out by resource area staff. On-the-ground management activities, such as visitor contact, visitor use data collection, monitoring, informational signing, etc. are accomplished primarily by BLM staff and volunteers. Below are other administrative functions associated with managing Steens Mountain Wilderness and WSRs.

### **4.3.1 Aircraft Overflights**

#### **4.3.1.1 Current Management Situation**

By agreement between the BLM and the Federal Aviation Administration in 1992, civilian aircraft are requested to maintain a minimum altitude of 2,000 feet above ground level or higher while in airspace over designated wilderness. This altitude advisory does not apply to military aircraft operating within an established military training corridor.

Steens Mountain Wilderness and WSRs lie within military training airspace designated as VR 1301 which is managed by the Idaho Air National Guard in Boise, Idaho. This airspace is used by numerous military units in training and involves high and low elevation overflights of Steens Mountain Wilderness and the WSRs. The number and frequency of these flights is variable.

During the course of wildlife management activities, the Oregon Department of Fish and Wildlife (ODFW) uses aircraft over Steens Mountain Wilderness and WSRs to conduct aerial big game census activities and to inspect wildlife water developments. During winter months, low-level helicopter and fixed-wing inventories are taken of mule deer, elk, pronghorn antelope, and bighorn sheep. Helicopters have also been used for transplanting wildlife, primarily bighorn sheep. The use of helicopters on these projects principally involves the removal of animals from the area.

Historically, livestock grazing operations on allotments permitted to Roaring Springs Ranch have been conducted with periodic use of helicopters to locate and monitor cattle, transport supplies and equipment, and manage fences and gates. Potential landing and dropping of supplies by aircraft into Steens Mountain Wilderness will be analyzed in an environmental assessment (EA), prior to the landing of any aircraft or dropping of supplies.

Aircraft, both fixed-wing and helicopter, have been used for emergency operations such as search and rescue. The use of aircraft within Steens Mountain Wilderness for such purposes is authorized at 43 CFR Part 6303.1. The BLM has a law enforcement agreement with Harney County identifying the Harney County Sheriff's Office as having responsibility for search and rescue operations.

Use of aircraft by BLM personnel for administrative purposes has included the use of fixed-wing aircraft and helicopters for reconnaissance and suppression of wildland fires. Aircraft have also been used in wildlife and wild horse monitoring and management programs. Analysis required by the NEPA for the use of administrative flights will include a Minimum Requirement Decision evaluation. Fire suppression activities involving aircraft use will be considered annually, prior to the fire season. This consideration will aid in decision making for potential initial attack activities during Wildland Fire Situation Analyses and during other planning cycles; to assure that a Minimum Requirement Decision evaluation can be developed and considered for aircraft activities. An emerging fire program for Steens Mountain Wilderness and WSRs will also be taken into consideration. The need for aircraft to participate in protection of human life will be considered an emergency activity during fire suppression or prescribed fire activities.

#### **4.3.1.2 Management Objectives**

- Direct BLM personnel by education and policy to restrict overflights and landing of aircraft within Steens Mountain Wilderness and WSRs except as necessary for emergency situations or as otherwise approved by the authorized officer.

#### **4.3.1.3 Management Direction**

- Pursue development of agreements with cooperating agencies and permittees which give concise direction for the authorization and use of aircraft within Steens Mountain Wilderness and WSRs.
- Direct BLM personnel by education and policy to restrict overflights and landing of aircraft within Steens Mountain Wilderness and WSRs except as necessary for emergency situations or as otherwise approved by the authorized officer.

## 4.3.2 Lands and Realty

### 4.3.2.1 Current Management Situation

Land management requirements in the Steens Act for land exchanges, Steens Mountain Wilderness, and WSR designations create inconsistencies between the current land tenure designations and legislative requirements. These inconsistencies are addressed in the Proposed RMP/FEIS by adjusting land tenure zones to provide consistency with the Steens Act.

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 Steens Mountain Wilderness and WSR corridors. In order to complete this, a number of specific land exchanges were outlined in the Steens Act and carried out by the BLM. Lands acquired in Steens Mountain Wilderness and WSR corridors came under those designations and are managed as such. The Steens Act also allows for additional future acquisitions of private lands in Steens Mountain Wilderness and the WSR corridors, which will be classified and managed accordingly.

Steens Mountain Wilderness and WSRs were not specifically designated as ROWs and realty use avoidance/exclusion areas prior to the Proposed RMP. Most of these types of land uses are prohibited under the terms of the Wilderness Act and the WSRs Act. The Proposed RMP adjusts these zones to reflect the ROWs and realty use exclusion zones.

Commercial activities including filming permits are generally prohibited in Steens Mountain Wilderness and WSRs. Those commercial activities that are allowed are addressed in this management plan in Section 4.4.4 Special Recreation Permits (SRPs). Requests related to commercial activities outside of Steens Mountain Wilderness, but within a WSR corridor, such as the Riddle Ranch, will be considered on a case-by-case basis.

### 4.3.2.2 Management Objectives

- To retain, consolidate, and acquire land or interest in land with high public resource values for effective administration and improvement of resource management.
- To acquire legal public or administrative access to public land where necessary.

### 4.3.2.3 Management Direction

- Public land holdings in Steens Mountain Wilderness and WSR corridors will be retained and increased. Public lands within Steens Mountain Wilderness and WSR corridors may not be disposed of under any circumstances.
- Private lands surrounded by Steens Mountain Wilderness or WSR corridors may be acquired by exchange, purchase, donation, or other authorized method from willing landowners with the goal of ultimately achieving full fee title in Steens Mountain Wilderness and WSRs. Where fee acquisition is not possible, special emphasis will be placed upon entering into conservation management agreements, acquiring conservation easements, or providing incentive payments for nondevelopment/conservation purposes to protect and manage these lands.
- Acquisition opportunities within or adjacent to special management areas including Steens Mountain Wilderness and WSRs will be considered higher priority than acquisition of nonpublic lands elsewhere in the Planning Area. All forms of acquisition will be with willing land owners.
- Steens Mountain Wilderness and all WSRs will be designated as ROWs, realty use, and renewable energy exclusion areas, except those authorizations necessary to provide reasonable access to nonpublic lands and interests in land. In addition to the above exception, low impact 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, but outside of Steens Mountain Wilderness.
- Valid existing rights within Steens Mountain Wilderness and WSRs that are not currently noted on the BLM's land status records will be adjudicated, acknowledged, and noted in accordance with applicable law.
- Legal public or administrative access within Steens Mountain Wilderness and WSRs, including conservation and scenic easements, will 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 will be placed on providing access to areas containing high public values and the protection of natural values. Land tenure transactions will be designed to maintain and improve public access.

### **4.3.3 Wildland Fire Management**

#### **4.3.3.1 Current Management Situation**

Plant and animal communities throughout Steens Mountain Wilderness and WSRs have developed with some influence of wildland fire. The extent of the influence depends on many physical and biological factors. Steens Mountain Wilderness and WSRs experiences an average of ten observed fire starts during each annual wildfire season. Many more fires may be ignited, but are never discovered because they are extinguished by accompanying precipitation or burn only for a short time because of limited quantities of fuel. The majority of these fires are less than ten acres in size, but occasionally fires will grow to over 1,000 acres if weather and fuel conditions permit.

The diversity in landscapes in Steens Mountain Wilderness and WSRs helps to produce a wide spectrum of plant communities and ultimately fuel conditions. The different landscapes and plant communities also result in a variety of fire regimes. Ten general vegetation types have been characterized and mapped within Steens Mountain Wilderness and WSRs. Vegetation types dominated by mountain big sagebrush, or that have a western juniper overstory and mountain big sagebrush understory, are placed in Fire Regime II, frequent stand replacing fires. These vegetation types historically experience a fire once every one to 35 years. Quaking aspen vegetation types are classified as Fire Regime III, infrequent, mixed severity fires. This fire regime could also be applied to most hardwood riparian communities within Steens Mountain Wilderness and WSRs. Low sagebrush and pre-settlement western juniper vegetation types are classified as Fire Regime V, rare (100-200 years between fire events) stand replacing fires. There are some specialized plant communities not classified in this general vegetation description. Mountain meadows and wet meadows have been mapped at less than 50 acres in Steens Mountain Wilderness and WSRs. These and other small, specialized plant communities typically occur within the above major vegetation types and would operate at the fire regime of the adjacent vegetation types.

The Federal Wildland Fire Management Policy and Program Review (Policy) (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, fire 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 must 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.

Firefighter and public safety are the highest priority during all wildland fire incidents. Once human safety has been secured, protection of private property and natural and cultural resources becomes the priority in suppression actions.

#### **4.3.3.2 Management Objectives**

- To protect human life, private property, or areas that possess significant resource values that would be threatened by wildfire.
- To restore and maintain the integrity of ecosystems by reestablishing appropriate wildland fire regimes.

#### **4.3.3.3 Management Direction**

- Develop guidance in the Burns District's Fire Management Plan (FMP) that addresses the management of wildfire in Steens Mountain Wilderness and WSRs. Emphasis will be given to restoring appropriate fire regimes and ecosystem integrity, while still protecting human life, private property or other significant resource values. Appropriate rehabilitation guidelines associated with protecting wilderness resources will also be developed as needed.

- As part of the FMP, pursue agreements with other land management agencies and private landowners to facilitate cooperative wildland fire management.
- Until a FMP is completed, all wildfires in Steens Mountain Wilderness and WSRs will be suppressed using appropriate management actions. To the extent possible, minimize adverse effects on wilderness resources.

#### **4.3.4 Emergency Services and Law Enforcement**

##### 4.3.4.1 Current Management Situation

BLM law enforcement rangers enforce federal regulations on 3.36 million acres of BLM administered lands in the Burns District. Common law enforcement violations in Steens Mountain Wilderness and WSRs include motorized vehicle travel in closed areas, illegal outfitters/guides, illegal wildlife hunting, vandalism, or theft of archaeological resources.

Under a law enforcement agreement between the BLM and the Harney County Sheriff's Office a county deputy patrols areas in the vicinity of Steens Mountain Wilderness and WSRs during the high recreation use period from June through October. This agreement is funded by the BLM and the deputy primarily enforces violations associated with Oregon State laws. Oregon State Police also conduct patrols that focus mainly on violations of state fish and game laws, although officers will respond to other violations.

The Harney County Sheriff's Office is responsible for managing all search and rescue operations in Steens Mountain Wilderness and WSRs. The BLM will assist the County in search and rescue operations as requested, generally providing personnel and, on occasion, aircraft.

##### 4.3.4.2 Management Objectives

- To increase BLM law enforcement capabilities to protect Steens Mountain Wilderness and WSR resources.
- To pursue coordination and cooperation with other law enforcement agencies and work to inform them about Steens Mountain Wilderness and WSR enforcement issues.

##### 4.3.4.3 Management Direction

- As funding and a full time position become available, consider hiring an additional BLM law enforcement officer that would be responsible for the CMPA including Steens Mountain Wilderness and WSRs.
- Where needed, develop additional supplemental regulations governing public use in Steens Mountain Wilderness and WSRs as provided for in the 43 CFR Part 8365.1-6.
- Continue and promote law enforcement and other cooperative agreements with Harney County Sheriff's Office and Oregon State Police for the protection of Steens Mountain Wilderness and WSR resources.
- Develop written materials to help educate cooperating law enforcement and search and rescue agency personnel about the protection of Steens Mountain Wilderness and WSR resources related to public use or the appropriate use of motor vehicles, aircraft, and other motorized or mechanical equipment needs during emergency situations.

#### **4.3.5 Partnerships and Volunteers**

##### 4.3.5.1 Current Management Situation

Partnerships and volunteers are a vital part of managing Steens Mountain Wilderness and WSRs. Beginning in 2002, volunteers began the removal of fences in the Ankle Creek area which were no longer needed within the No Livestock Grazing Area of Steens Mountain Wilderness. In 2003, volunteers removed an additional two miles of fence from the Little Blitzen Gorge area. The BLM entered into a Cooperative Conservation Initiative with a number of conservation organizations in Oregon to continue fence removal efforts in Steens Mountain Wilderness and WSRs. These groups work under the direction and coordination of the Oregon Natural Desert Association (ONDA) through a volunteer agreement with the BLM. The BLM organizes work projects for volunteers and provides available funding for contracting with a

packer and packstring to remove fencing materials after disassembly by volunteers. The BLM is developing its own packstring to assist with these and other Steens Mountain Wilderness and WSRs management activities. It is estimated that volunteer groups will provide 2,500 hours of volunteer labor to the BLM during 2004 volunteer work projects. Oregon Archaeological Society volunteers worked with the BLM to inventory Steens Mountain Wilderness in 2003 and 2004. These activities are planned annually through 2009. Additional Oregon Archaeological Society labor was donated at the Mortar Riddle Site excavations in Riddle Brothers Ranch National Historic District in 2003 and 2004.

Following discussions with the SMAC, the BLM may also consider establishing a nonprofit cooperating association. This organization would assist the BLM in seeking funding opportunities for project work, recruiting volunteers, developing information and education programs, as well as other programs which would support the intent of the Steens Act.

#### 4.3.5.2 Management Objectives

- To develop relationships and cooperative agreements with partners which would benefit the management of Steens Mountain Wilderness and WSRs.

#### 4.3.5.3 Management Direction

- Continue ongoing efforts to recruit and utilize individual and group volunteers for work projects in Steens Mountain Wilderness and WSR corridors.
- Develop an inventory of work projects needed to improve or monitor Steens Mountain Wilderness and WSR resources and values, which can be used for recruiting volunteers.
- Pursue discussions with the SMAC on the possibility of establishing a nonprofit cooperating association.

### 4.3.6 **Education and Outreach**

#### 4.3.6.1 Current Management Situation

At the present time there is little specific education information available to the public regarding Steens Mountain Wilderness and WSRs; however, the BLM has some material regarding Steens Mountain Wilderness and WSRs use and ethics, including single sheet handouts and general Leave No Trace information, which is provided to the public.

#### 4.3.6.2 Management Objectives

- To create a wilderness and WSR education program on the Burns District which informs staff and the public about the unique aspects of Steens Mountain Wilderness and WSRs and wilderness management guidelines.

#### 4.3.6.3 Management Direction

- Include wilderness and WSR ethics education in the CMPA brochure that is currently being developed. Include similar information on the Burns District/Steens Mountain website.
- Develop an outdoor ethics education program, possibly in cooperation with the USFS and the USFWS, which will be presented to BLM staff, local area schools, church and Scout groups, community service organizations, hunting, fishing, and equestrian clubs, etc.
- Post use ethics information about Steens Mountain Wilderness and WSRs in high use areas such as trailheads, developed recreation sites near Steens Mountain Wilderness and WSRs, and other key locations in nearby communities.

### 4.3.7 Research

#### 4.3.7.1 Current Management Situation

At the present time, short-term research studies conducted in Steens Mountain Wilderness and WSRs include wildlife studies by the ODFW and the Point Reyes Bird Observatory. A BLM partnership with the University of Wisconsin exist for archaeological research at the Mortar Riddle Site in Riddle Brothers Ranch National Historic District in 2003 and 2004.

#### 4.3.7.2 Management Objectives

- To work with other agencies, universities, and interested entities to conduct research activities in a manner that preserves the area's wilderness character and furthers management, scientific, educational, historical, and conservation purposes of Steens Mountain Wilderness and WSRs.

#### 4.3.7.3 Management Direction

- Initiate discussions with the SMAC on the establishment of a Science Advisory Committee.
- Pursue cooperating partners for wilderness and river dependent research projects.
- Initiate cooperative management agreements between researchers and the BLM.
- Use information gained through research for developing management projects and actions which promote wilderness and WSR character and values.

### 4.4 Visitor Use Elements

#### 4.4.1 **Recreation Facilities only in Wild and Scenic River Corridors**

##### 4.4.1.1 Current Management Situation

There are two developed recreation sites that fall within WSR corridors but outside of Steens Mountain Wilderness. Page Springs Campground is open year round and is accessed from the North Steens Loop Road along the Donner und Blitzen WSR, at 4,200 feet in elevation. Located only four miles from the community of Frenchglen, Page Springs has 31 campsites and receives approximately 29,000 visits each year. Jackman Park Campground is open July through October and is located along Fish Creek off the North Steens Loop Road in an aspen grove three miles from Fish Lake at 7,800 feet in elevation. Jackman Park has six campsites and receives approximately 2,200 visits each year. Both campgrounds offer picnic tables, drinking water, fire rings, and vault restrooms.

Developed recreation sites are not normally found along a river with a Wild classification. However, both recreation sites existed at the time the rivers were designated and as such, the continued use and maintenance of these facilities will be in accordance with the WSRs Act.

##### 4.4.1.2 Management Objectives

- To manage and maintain existing recreation facilities in a manner that provides for visitor safety and natural resource protection.
- To minimize the development of new facilities in natural areas to that which is necessary for public health and safety and resource protection.

##### 4.4.1.3 Management Direction

- Develop a Recreation Area Management Plan to provide comprehensive guidance for recreation facilities and management in the CMPA, including an evaluation and recommendation of facility needs in WSR corridors.

#### 4.4.2 Wilderness Trails and Trailheads

##### 4.4.2.1 Current Management Situation

There are no developed trailheads or other recreation facilities in Steens Mountain Wilderness or overlapping portions with WSR corridors. There are ten trails within Steens Mountain Wilderness and WSR corridors (Maps W2 and W3). Below is a summary of each trail and trailhead:

**Oregon High Desert National Recreation Trail:** Approximately 32.5 miles of the Oregon High Desert National Recreation Trail traverse Steens Mountain Wilderness and WSRs. This route is not an actual trail but rather a corridor marked by occasional cairns. The trail provides great diversity of scenery, as well as outstanding opportunities for solitude and wildlife viewing. Page Springs is the only Oregon High Desert National Recreation Trail trailhead for the segment that passes through Steens Mountain Wilderness and WSRs.

**Little Blitzen Trail:** The Little Blitzen Trail is approximately nine miles long. It begins east of South Steens Campground, descends to the Little Blitzen River, and heads up Little Blitzen Gorge. The trail parallels the river and passes through groves of large cottonwood trees and open meadows before terminating at the head of the canyon. Two spur trails exit the canyon: the Nye Trail is a constructed but primitive trail and the undeveloped Wet Blanket Trail. Trailhead facilities outside Steens Mountain Wilderness include a small dirt parking area with limited parking and one bulletin board. In order to reach the trail, visitors must walk 0.25 mile farther east on the South Steens Loop Road.

**Nye Trail:** This primitive, narrow, and steep one-mile trail switchbacks 1,000 feet down the north wall of Little Blitzen Gorge to its junction with the Little Blitzen Trail. The Nye Trail is located near the mid-point of the gorge. The top of the trail begins approximately 100 yards west of Nye Cabin. No formal trailhead exists, although parking is allowed within 30 feet of the Cold Springs Road centerline, adjacent to the beginning of the trail.

**Big Indian Trail:** The Big Indian Trail is approximately nine miles long and begins at South Steens Campground. The portion of the trail to the first creek crossing is located on a closed two-track road which is presently being rehabilitated to a single track trail. After crossing Big Indian Creek, the trail turns north and then east as it follows the creek for nine miles to the head of the canyon. Along the way the trail passes through numerous meadows and cottonwood groves and by a waterfall near the head of the canyon. Trailhead facilities outside Steens Mountain Wilderness include a small gravel parking lot and nearby vault toilet. The old road leading from the trailhead toward Big Indian Gorge is gated at the parking lot.

**Wildhorse Lake Trail:** This one-mile trail begins on a short section of closed dirt road that previously led to the old Wildhorse Lake overlook. The trail then drops down the north wall of the cirque at the head of Wildhorse Lake Basin and leads to the north shore of the lake through a sensitive alpine environment. The trail is exceedingly steep with several dropoffs. The trailhead provides limited parking at a wide bladed area at the end of the Wildhorse Lake Overlook Road. No facilities are presently located at this trailhead.

**Steens Summit Trail:** This short 0.4-mile trail is gated and follows an old road that is closed to vehicle access by the general public. The trail reaches the 9,733-foot high summit of Steens Mountain and offers outstanding views of the surrounding countryside. The road accesses communication facilities which are operated under permit from the State of Oregon. Approximately half of the route is located within Steens Mountain Wilderness with the remainder on state lands. The trailhead provides limited parking at a wide bladed area at the end of Wildhorse Lake Overlook Road. At present, no facilities are located at this trailhead.

**Pike Creek Trail:** This two-mile trail is located on a old road that has been closed to motor vehicle travel. The trail is located on the eastern slope of Steens Mountain and generally runs along the north side of Pike Creek and heads west up the canyon. Beginning on privately owned land, the trail immediately enters BLM administered lands and passes through a portion of the High Steens WSA before entering Steens Mountain Wilderness. The trailhead is a small wide area at the end of a dirt road and has very limited parking. No facilities are present at this parking area, which is located on privately owned land.

**Mud/Ankle Creek Trail:** This 7.4-mile trail follows an unmaintained two-track dirt road that is open to motor vehicle traffic for the first mile. At that point the road is closed to vehicle travel by the general public, but is available for vehicle access to landowners and lessees who are permitted to access private land inholdings in the Ankle Creek area (See Roads

Section). This route provides access to Mud Creek and Ankle Creek within Ankle Creek Basin, an area located south of Little Indian Gorge and west of Wildhorse Canyon. Visitors may park within 30 feet of the road centerline for the first mile of Newton Cabin Road, and are encouraged to park within existing disturbed parking spurs. Visitors may also park at South Steens Campground and walk or ride horseback 0.25 miles west on the South Steens Loop Road to reach the Newton Cabin Road.

**Blitzen River Trail:** This four-mile trail begins at the trailhead at the south end of Page Springs Campground and travels its entire length along the Donner und Blitzen WSR. The trail offers outstanding opportunities for access to the river. The trailhead has a small bulletin board and trail registration box. Camping, toilets facilities and water are available immediately adjacent to the parking area at the campground.

**Wilderness Trail:** Developed as a nature trail, this one-mile trail begins at Page Springs Campground. The trailhead is a bladed dirt area providing limited parking. Facilities at this trailhead are limited to one brochure box. The entire length of the trail is marked with rock cairns.

#### 4.4.2.2 Management Objectives

- To provide and manage a trail system that allows visitors to experience Steens Mountain Wilderness and WSRs while minimizing effects to wilderness resources and opportunities for solitude.
- Any new trail construction or maintenance of existing trails will meet wilderness trail design and safety standards for hiking and horseback riding use.
- Allow for cross-country travel, but minimize the establishment of user-established trails from designated trails.

#### 4.4.2.3 Management Direction

- Identify and implement any known trail construction or maintenance projects for Steens Mountain Wilderness and WSRs. To the extent possible, minimize stream crossings and limit signs to those needed for visitor safety and resource protection within Steens Mountain Wilderness and WSRs. Portal signs will be installed to clearly define the wilderness boundary on major trails.
- Pursue a cooperative management agreement with the private landowner regarding the Pike Creek Trailhead.
- Obliterate and restore user-established trails that cause resource damage.
- Seek trail development opportunities outside Steens Mountain Wilderness and WSRs to reduce effects to wilderness and WSR resources when public demand for such trails is established.

#### 4.4.3 **Wilderness and WSR Use Guidelines**

This section addresses the guidelines associated with public use of Steens Mountain Wilderness and WSRs.

Recreational opportunities occurring in Steens Mountain Wilderness and WSRs at the present time primarily include hiking, backpacking, equestrian activities, nature study, hunting, and fishing. Visitors participate in both day use and overnight activities.

Currently, the majority of recreation use in Steens Mountain Wilderness and WSRs takes place in the gorges, with Little Blitzen and Big Indian the most heavily visited. Activities are mainly sightseeing, day hiking, backpacking, fishing, and day and overnight trips by equestrians. Wildhorse Lake is also a popular destination for both day hikers and backpackers. The east side of Steens Mountain Wilderness receives use from day users, primarily hikers in Pike Creek. This area of Steens Mountain Wilderness and the Alvord Peak area are also popular with hunters seeking big game and upland game birds. The area around Mud Creek and Ankle Creek WSRs has had light use due to its remoteness. Use within Ankle Creek Basin is beginning to increase from equestrians, especially those wanting to experience multi-day trips with solitude and big game hunting opportunities. Other portions of Steens Mountain Wilderness and WSRs such as the Cold Springs and Fish Creek areas, receive very little use.

Recreation use under SRPs amounted to 512 visits to Steens Mountain Wilderness and WSRs for fiscal year 2003. These included 55 visits from outfitter/guides offering both single-day and multi-day trips into the wilderness, 76 visits exclusively from single-day services, and 381 visits from the distance running training camp.

Wilderness trail registration information recorded 2,475 visitors to Steens Mountain Wilderness and WSRs for fiscal year 2003. These included both day-trip and multi-day trips visits. The actual number of visitors to Steens Mountain Wilderness and WSRs for the year is believed to be higher, due to the unknown rate of visitor compliance with voluntary wilderness registration.

#### 4.4.3.1 Use of Steens Mountain Wilderness Boundary Roads

Section 112 (b) of the Steens Act prohibits off-road use by motorized or mechanized vehicles and limits such use to roads and trails as may be designated for their use as part of the management plan. Currently the roads bounded on both sides by Steens Mountain Wilderness and designated as open for public use include portions of the Steens Loop Road, Fish Creek Road, Grove Creek Road, Cold Springs Road, Wildhorse Lake Overlook Road, Indian Creek Road, Newton Cabin Road, Bone Creek Road, and Big Alvord Creek Road (Map W2).

During the winter, snowmobile use is allowed under BLM use authorization, with access from the north entrance of the Steens Loop Road. Snowmobiles may travel from the snowline to the Kiger Gorge Overlook. Snowmobile use is allowed along Cold Springs Road to the Nye Cabin and along Dingle Creek Road only when accompanied by a commercial recreation permittee who is authorized to operate snowmobile trips, or by a member in good standing of the local snowmobile club. The route to Nye Cabin, the North Steens Loop Road above the Cold Springs Road turnoff, and the east side of Dingle Creek Road are bounded by Steens Mountain Wilderness.

There have been limited illegal intrusions into Steens Mountain Wilderness by motorized vehicles, primarily in the areas near Weston Basin Road and Cold Springs Road. Repetitive intrusions into Steens Mountain Wilderness will result in restriction of certain recreation activities or the closure of access points (See Unauthorized Motor Vehicle and Mechanical Transport Intrusion Guideline, Table 8, page U-29).

#### 4.4.3.2 Prohibited Uses

Except as specifically stated in the Steens Act or the Wilderness Act, the following activities are currently prohibited in wilderness (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, hanglider, 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.

#### 4.4.3.3 Specific Use Guidelines

Below are public use guidelines that were specifically developed for Steens Mountain Wilderness and WSRs:

- Management of party sizes will limit groups to a maximum of 12 individuals and 18 recreational stock, except for historic permitted and Native American uses.
- Length-of-stay limited to 14 days.
- Dogs allowed in all areas but will be required to be under voice or physical control.

- Catholes for human waste will be required and must be at least 150 (60 footsteps) feet from all water sources, campsites and trails. Packing out of human waste is strongly encouraged and may be required under certain permitted activities.
- Toilet paper will be required to be packed out.
- Overnight camping will be allowed in the Rooster Comb and Little Blitzen Research RNAs in historically used areas when consistent with the purpose of the RNA and Steens Mountain Wilderness and WSRs Management Plan objectives.
- Camping will be allowed at Wildhorse Lake in a defined area in designated campsites.
- No overnight recreational stock use at Wildhorse Lake will be allowed. No camping will be allowed in the Little Wildhorse RNA.
- Grazing of recreational stock will be allowed consistent with the Standards and Guidelines for Rangeland Health (S&Gs).
- Recreational stock may graze freely in the No Livestock Grazing Area of Steens Mountain Wilderness, except Little Blitzen RNA where such use will be monitored.
- Pack goats will be highlined or picketed.
- Tying recreational stock to trees will only be allowed for loading and unloading. No tying of recreational stock to trees overnight will be allowed.
- No permanent caches allowed by SRP holders or the general public in Steens Mountain Wilderness and WSRs.
- The installation, erection, or building of temporary or permanent structures is prohibited except for immediate use while camping.

#### 4.4.3.4 Recreation Use Levels and Indicators

The management of Steens Mountain Wilderness and WSRs will consider the level of use, or Use Capacity, of the area under management. A set of social and physical indicators has been developed to assess the health or condition of Steens Mountain Wilderness and WSRs, rather than the establishment of specific levels of use. As described below, certain indicators will be monitored on a regular basis and the results of the monitoring will be used to adjust the type or level of management actions needed to meet the guideline that has been set for each indicator. Two different Management Areas were identified for Steens Mountain Wilderness, each with its own desired conditions. The same indicators are used; however, the guidelines for the indicators are different for each Management Area.

#### 4.4.3.5 Management Areas

The two Management Areas defined for Steens Mountain Wilderness are the Gorges Management Area and the Uplands Management Area (Map W2). The boundaries of the two Management Areas are generally defined by the patterns and types of historic use and the physiography of Steens Mountain Wilderness. 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 for each canyon. The desired condition associated with public use is summarized below to provide a sense of the visitor experience and wilderness setting that the indicators and guidelines were developed to meet.

**Gorges Management Area Desired Condition:** This portion of Steen 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 may be 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.

Effects from camping activity meet Natural Environment desired condition. Permitted outfitters provide services to visitors for activities that meet identified public needs and that cannot be provided in nonwilderness settings. 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 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 wilderness.

**Uplands Management Area Desired Condition:** 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 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 by 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 occur at trailheads as appropriate for resource protection. Signs blend in with the natural setting. Livestock and recreational stock grazing adheres to appropriate S&Gs. Evidence of historic and cultural sites may exist, but is not interpreted or signed within the wilderness.

#### 4.4.3.6 Steens Mountain Wilderness and WSR Condition Indicators

The following are the indicators that are being monitored to assess the baseline and ongoing Steens Mountain Wilderness and WSR conditions. Indicators are items or specific conditions which will be monitored. Through the use of indicators, wilderness conditions can be monitored to determine whether desired conditions are being met.

1. **Campsite Condition** - campsite changes.
2. **Campsite Density** - number of campsites in a given area.
3. **Perception of Solitude** - trail register information, including length-of-stay, location of use, party size and makeup, and Wilderness Ranger interviews including location of encounters.
4. **Trail Condition** - changes in trails, including width, depth, and number of social trails.
5. **Length-of-Stay** - trail register and Wilderness Ranger interviews on the length-of-stay.
6. **Recreational Stock Use** - root exposure, manure in campsites, and tree girdling.
7. **Unauthorized Motorized Vehicle and Mechanical Transport Intrusions** - vehicles driven on closed roads, unless authorized, or driven off of roads into Steens Mountain Wilderness.

**Baseline Data Gathering on Indicators:** The BLM began collecting information on Steens Mountain Wilderness and WSRs use upon establishment of the area as wilderness. A program for collecting specific baseline monitoring data started in 2003 on the seven indicators described above to assess Steens Mountain Wilderness and WSR conditions related to recreational use and effects. This baseline data collection will continue through 2004. These baseline data will be analyzed to determine where the indicators fall with respect to the guidelines described below. These indicators will continue to be monitored on an annual basis.

#### 4.4.3.7 Recreation Use Management Options and Condition Guidelines

The BLM has developed different Management Option Levels that describe management actions for attaining the desired conditions and indicator guidelines. There are three general option levels associated with managing public use. Level I is the least restrictive, often involving voluntary compliance by improving visitor information and increasing visitor education efforts. Level II is more restrictive, often involving more active discouragement of undesirable use practices through contact with visitors, increased signing, and written materials. Nonquota permit systems may also be implemented. Level III is the most restrictive, often involving shorter stay limits, quota permit systems, and temporary or permanent closures. Detailed descriptions of each of the three Management Options Levels have been developed for the seven monitoring categories (see Attachment 1).

The baseline and annual monitoring data will be used to assess the conditions of Steens Mountain Wilderness and WSRs and to determine the need for implementation of management action. The implementation of the appropriate level of management is based on exceeding the threshold. Thresholds are the upper limit in terms of time period or percentage of the standard or guideline that is exceeded, at which point the next level of management options will be undertaken. The indicator guidelines and trigger thresholds that will be used are described in Tables 2 through 8.

**Table 2: Campsite Condition Guideline**

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.

Note: A campsite at Campsite Condition “extreme” will allow the implementation of management options for that specific campsite.

**Table 3: Campsite Density Guideline**

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.

**Table 4: Perception of Solitude Guideline**

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.
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**Table 5: Trail Condition Guideline**

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.

**Table 6: Length-of-Stay Guideline**

Length-of-Stay Guideline	
Management Area	Guideline
Gorges	- 50 percent increase in average length of stay for all parties in Steens Mountain 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 Steens Mountain 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.

**Table 7: Recreational Stock Use Guideline**

<b>Recreational Stock Use Guideline</b>	
<b>Management Area</b>	<b>Guideline</b>
Gorges	<ul style="list-style-type: none"> <li>- 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.</li> <li>- 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.</li> <li>- 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.</li> </ul>
Uplands	<ul style="list-style-type: none"> <li>- 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.</li> <li>- 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.</li> <li>- 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.</li> </ul>

**Table 8: Unauthorized Motor Vehicle and Mechanical Transport Intrusions Guideline**

<b>Unauthorized Motor Vehicle and Mechanical Transport Intrusions Guideline</b>	
<b>Management Area</b>	<b>Guideline</b>
Gorges	<ul style="list-style-type: none"> <li>- Unauthorized motor vehicle and mechanical transport intrusions are an illegal activity in Steens Mountain Wilderness and require immediate implementation of Level I management options.</li> <li>- Repeated, documented unauthorized intrusions into Steens Mountain Wilderness from any points of access will be assessed for implementation of Level II management options.</li> </ul>
Uplands	<ul style="list-style-type: none"> <li>- Unauthorized motor vehicle and mechanical transport intrusions are an illegal activity in Steens Mountain Wilderness and require immediate implementation of Level I management options.</li> <li>- Repeated, documented unauthorized intrusions into Steens Mountain Wilderness from any points of access will be assessed for implementation of Level II management options.</li> </ul>

#### 4.4.3.8 Management Objectives

- To manage recreation use in a manner that provides visitors with an opportunity to explore and experience the wildness and naturalness of Steens Mountain Wilderness and WSRs, while still protecting wilderness resources.

#### 4.4.3.9 Management Direction

- Management actions associated with recreational use will remain at the lowest Management Option Level needed to meet the indicator guidelines described above.

#### **4.4.4 Special Recreation Permits**

##### **4.4.4.1 Current Management Situation**

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.”

Section 4(d)(6) of the Wilderness Act 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.” These activities are normally managed under Special Recreation Permits which are issued and administered by the BLM.

**Current Permits:** In 2003, 11 commercial permittees were authorized to operate in Steens Mountain Wilderness and WSR corridors, offering both single-day and multi-day trips. These included seven long-term permit holders and four permittees who offered one-time trips into Steens Mountain Wilderness and WSRs during 2003. Most of the SRPs are associated with commercial guiding for hunting, fishing, camping, llama pack trips, and trail rides. Four of the special recreation permittees operate hunting and fishing guide services and one offers llama pack trips plus guided fishing trips. Another operator offers a range of services including trail rides, overnight horseback trips, hunting and fishing trips, and a variety of winter recreation trips. A permittee with a historic use SRP currently conducts distance running day trips in Steens Mountain Wilderness and WSRs to provide endurance training for youth. Additional services, principally day hiking and nature study, were offered by four outfitters offering one-time permitted trips into Steens Mountain Wilderness and WSRs during 2003.

Long-term permit holders reported a combined total of 436 visits to Steen Mountain Wilderness and WSRs for 2003. One-time outfitter/guide services reported a combined total of 76 visits to the wilderness for the same period.

##### **4.4.4.2 Management Objectives**

- To provide for the level and type of commercial services necessary, consistent with the Wilderness Act, to enable the public to use, access, enjoy and experience the recreational and other values of wilderness, emphasizing opportunities for primitive and unconfined types of recreation, inspiration, and solitude.
- To recognize the historic permitted activities so that continuance of these activities is consistent with the Wilderness Act and the Steens Act.

##### **4.4.4.3 Management Direction**

- New proposals for outfitters will be considered after preparing a needs assessment. No permanent caches will be allowed for either outfitters/guides or the general public.
- Monitor historic, current, and future permitted activities to promote consistency with the Wilderness Act.

#### **4.5 Natural and Cultural Resource Elements**

##### **4.5.1 Air Quality**

###### **4.5.1.1 Current Management Situation**

The Clean Air Act (CAA) requires federal agencies to comply with all federal, state, and local air pollution requirements. Under criteria established through the CAA as amended in 1990, the Planning Area including Steens Mountain Wilderness and the WSRs has been designated as Class II. This means that air quality is good to excellent.

4.5.1.2 Management Objectives

- To manage wildland fires to avoid degradation of Steens Mountain Wilderness and WSRs airshed.

4.5.1.3 Management Direction

- Utilize wildland fire to meet wilderness management objectives, while meeting federal and state air quality and opacity standards.

4.5.2 **Water Resources**4.5.2.1 Water Quality4.5.2.1.1 Current Management Situation

Most of the WSRs discussed in this management plan have been identified as water quality impaired on the Oregon Department of Environmental Quality (DEQ) 303(d) list for 2002 under the Clean Water Act (CWA) (see Table 9). Additionally, Home Creek and Willow Creek, located within Steens Mountain Wilderness, are listed on the 303(d) list as water quality impaired. The parameter warranting listing is stream temperature for the most sensitive beneficial use, salmonid (trout) fish rearing. The temperature standard applied to this listing criteria was 64 degrees Fahrenheit (°F). However, the Oregon Administrative Rule (OAR) for Water Quality Standards (OAR no date) was amended in 2004 to specify 68°F as the temperature standard for redband trout and Lahontan cutthroat trout.

Water quality issues in Steens Mountain Wilderness and WSRs are associated with potential nonpoint source pollutants, such as reduced thermal buffering of stream temperatures and sediment input from runoff events and streambank erosion. The primary attribute and indicator for maintenance or restoration of water quality is riparian vegetation. Adequate composition, distribution, and abundance of appropriate riparian vegetation defined by site/reach capability and potential provides physical function such as bank stability, sediment trapping, shade, and flood flow detention.

**Table 9: Summary of Oregon DEQ 2002 303(d) List for Streams within Wild River Segments**

Stream	River Mile	Parameter	Season	List Date	Status
Donner und Blitzen Subbasin					
Ankle Creek <sup>1</sup>	0 to 7.6	Temperature (64°F)	Summer	1998	303(d) List
Big Indian Creek	0 to 7.1	Temperature (64°F)	Summer	1998	303(d) List
Deep Creek	0 to 7.2	Temperature (64°F)	Summer	1998	303(d) List
Donner und Blitzen River	45.3 to 77.3	Temperature (64°F)	Summer	1998	303(d) List
Fish Creek	0 to 7.5	Temperature (64°F)	Summer	1998	303(d) List
Indian Creek	0 to 4.2	Temperature (64°F)	Summer	1998	303(d) List
Little Blitzen River	0 to 3.6	Temperature (64°F)	Summer	2002	303(d) List
Little Blitzen River	3.6 to 12.8	Temperature (64°F)	Summer	2002	Attained
Little Indian Creek	0 to 3.9	Temperature (64°F)	Summer	1998	Attained
Mud Creek	0 to 4.8	Temperature (64°F)	Summer	1998	303(d) List
Alvord Lake Subbasin					
Little Wildhorse Creek	0 to 2.5	Temperature (64°F)	Summer	1998	303(d) List

<sup>1</sup>OAR 340-041-0028 (2004) revised the stream temperature standard (7-day average maximum) for Lahontan cutthroat trout and redband trout from 64°F to 68°F. Therefore, this stream would meet the current stream temperature standard based on the supporting data used for listing.

#### 4.5.2.1.2 Management Objectives

- To comply with state and federal requirements to protect public waters.

#### 4.5.2.1.3 Management Direction

- Develop Water Quality Restoration Plans (WQRP) for all streams within Steens Mountain Wilderness and WSR segments identified as water quality limited under the CWA 303(d) in coordination with the DEQ.
- Develop and implement Best Management Practices (BMPs) for management and restoration activities to maintain or restore water quality, and to reasonably prevent, reduce, or mitigate localized or short-term effects to water quality through project specific planning.

#### 4.5.2.2 Water Quantity

##### 4.5.2.2.1 Current Management Situation

The WSRs Act reserves the minimum quantity of water (flow) necessary to maintain the ORVs for which the river was designated. A federal reserve water right is authorized by the WSRs Act with the priority date assigned to the date of designation. However, a federal reserve water right is not formally recognized by the Oregon Water Resources Department (OWRD) until assigned through the state's water rights adjudication process. BLM policy is to use the state's instream flow water right process to protect flow dependent ORVs for designated streams and rivers pursuant to the WSRs Act. In the event that flow dependent ORVs are threatened, the BLM will seek cooperative solutions to promote adequate flow to protect WSR ORVs prior to exercising a federal reserved water right.

Little Blitzen River, Big Indian Creek, Little Indian Creek, Mud Creek, Little Wildhorse Creek, Wildhorse Creek, and Kiger Creek WSRs are contained entirely within Steens Mountain Wilderness on public lands from headwaters to the downstream WSR and Steens Mountain Wilderness boundary. Therefore, instream flows are inherently protected. The headwaters of the Donner und Blitzen WSR, including Deep Creek and Fish Creek WSR segments are in private ownership. Portions of Ankle Creek contain private inholdings. However, these streams are within a portion of the Donner und Blitzen subbasin which is considered fully appropriated by the OWRD and will likely not be eligible for further allocation of water.

Several water developments, including small reservoirs and spring developments, occur within Steens Mountain Wilderness for livestock and wildlife water sources. Existing water developments for livestock management purposes are considered "grandfathered" uses, and will serve to appropriately manage livestock in accordance with the Wilderness Act. Some water developments in the No Livestock Grazing Area of Steens Mountain Wilderness may continue to provide benefits to Steens Mountain Wilderness and WSR values through wild horse and wildlife management, and sediment trapping associated with degraded upland condition, such as reduced ground cover.

##### 4.5.2.2.2 Management Objectives

- To maintain or improve ground water recharge and holding capacity of riparian/wetland areas to maintain or increase base flow conditions of water sources (streams and springs).

##### 4.5.2.2.3 Management Direction

- Inventory and assess existing water developments for beneficial uses such as livestock, wildlife, or wild horse management, and sediment catchment facilities.
- Maintain existing water developments for protection and management of existing uses and wilderness resources in accordance with regulations, policies, and wilderness management objectives.
- Reclaim or restore existing water developments that are determined to not provide for protection of or management of existing uses and wilderness resources through active or passive measures.

- Construct new water developments for protection and management of existing uses and wilderness resources in accordance with regulations, policies, and wilderness management objectives.
- Manage riparian/wetland areas through active or passive measures to maintain or increase the distribution and abundance of riparian/wetland vegetation.

#### 4.5.3 Soils and Biological Soil Crusts

##### 4.5.3.1 Current Management Situation

The soils in the valley bottoms and drainages are generally deep (40 to 60 inches) to very deep (greater than 60 inches) over bedrock and somewhat poorly to well drained. The soils formed in alluvium and slopes range from two to ten percent. The surface textures are silt loams and loams about 30 inches thick over silty clay loams and silty clays. The water erosion hazard is slight to moderate and the wind erosion hazard is low to moderate.

The soils on canyon sides and hillsides are generally moderately deep (20 to 40 inches) to deep over bedrock, and are well drained. Slopes range from 20 to 60 percent and soils formed in colluvium. The surface textures are usually very gravelly loams or a very stony clay loam about ten inches thick, over clay loams and very stony loams. The water erosion hazard is moderate to severe and the wind erosion hazard is slight.

The upland soils are typically shallow (less than 20 inches deep) to moderately deep over bedrock, and well drained. The soils formed in place from basalt and slopes range from two to 30 percent. The surface textures range from very cobbly clay loams to extremely stony silt loams, about six to eight inches thick over clay loams or very stony clays. The water erosion hazard is moderate to high and the wind erosion hazard is slight to moderate.

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 name is used, there remains an important distinction between these formations and physical or chemical crusts (Belnap 2003).

Biological soil crust data specific to the Planning Area and the CMPA has not previously been collected. New monitoring studies are proposed for the Pueblo-Lone Mountain Allotment and the CMPA, including portions of Steens Mountain Wilderness and WSRs, to provide better data for future management actions.

##### 4.5.3.2 Management Objectives

- To manage soils to maintain, restore, or improve soil erosion classes, watershed health, and areas of fragile soils.
- To increase understanding of the management of Northern Great Basin biological soil crusts.

##### 4.5.3.3 Management Direction

- BMPs (Appendix F of the Proposed RMP/FEIS) will be implemented to protect and manage soils and biological soil crusts for all ground disturbing activities including but not limited to livestock grazing, road maintenance, and trail maintenance and construction.
- Collect biological soil crust data within Steens Mountain Wilderness and WSRs to inform future management decisions.

#### 4.5.4 Vegetation

##### 4.5.4.1 Current Management Situation

**Steens Mountain Wilderness:** Steens Mountain Wilderness is located within the Basin and Range Physiographic Province in the northern part of the Great Basin. The lower elevations on the west side of Steens Mountain are dominated by Wyoming big sagebrush, mountain big sagebrush and low sagebrush, interspersed with western juniper. As the

elevation increases eastward, the juniper gradually decreases in abundance and snowberry and mountain mahogany start to appear with mountain big sagebrush on the mesic west and north facing slopes and ridgetops. Quaking aspen groves are abundant in all the large canyons and gorges as well as at the headwaters of some of the smaller streams above 6,000 feet in elevation. The riparian communities are dominated by black cottonwood, alder, willow, chokecherry, and birch. Above 8,500 feet in elevation, the mountain big sagebrush community gradually changes into subalpine communities dominated by grasslands, meadows, and snow accumulation areas.

The steep and rocky east face of Steens Mountain has patches of mountain mahogany, western juniper, and mountain big sagebrush. The lower ridgetops and slopes contain an overstory of mountain big sagebrush and rabbitbrush with an understory of bluebunch wheatgrass or Idaho fescue. The riparian areas flowing off the east rim are dominated by black cottonwood, narrow-leaf cottonwood, willow, dogwood, alder, rose, and aspen.

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. These two plant communities share a dramatic increase in western juniper over the last 120 years.

From Serrano Point south to Alvord Peak, the vegetation in Steens Mountain Wilderness is characterized by Wyoming big sagebrush and bitterbrush at the lower elevations and mountain big sagebrush and low sagebrush at the higher elevations and on the ridgetops. The headwaters of some of the streams in this area contain aspen groves, but the dominant vegetation in most riparian areas is rose, willow, birch, chokecherry, and dogwood. A summary of the special status plant species in Steens Mountain Wilderness and WSR corridors is listed in Attachment 2.

#### 4.5.4.2 Donner und Blitzen WSR System

**Donner und Blitzen River:** The lower part of the main Donner und Blitzen River is wider than the upper part, with riparian areas dominated by alder, willow, and dogwood. There are also many areas of spring fed marshes dominated by sedges. This area was assessed as having significant natural values. In the drier areas of the lower canyon, basin big sagebrush is the dominant overstory plant.

The canyon narrows significantly from the confluence with Fish Creek upstream to the South Fork of the Donner und Blitzen River. The riparian area contains alder, willow, dogwood, and chokecherry. The rocky slopes above the riparian area are dominated by basin big sagebrush and western juniper, with an understory of bluebunch wheatgrass. Above Blitzen Crossing, moist meadows containing meadow foxtail, Kentucky bluegrass, and sedges are interspersed with the willows and alder along the river.

The Page Springs meadow area was assessed as having significant natural values. The meadow is a good representative of a low elevation riparian community.

**Little Blitzen River:** The lower part of the Little Blitzen River, below the Riddle Brothers Ranch, is dominated by black cottonwood, willows, and alder. Meadows containing Kentucky bluegrass, sedges, rushes, and cheatgrass occur sporadically along the stream.

The vegetation within the Riddle Brothers Ranch is mostly in the form of meadows, which have been altered by irrigation from a series of ditches. The meadows are made up of both native and cultivated nonnative species. The native species include redtop, tufted hairgrass, Cusick's bluegrass, and Nebraska sedge. The nonnative species include timothy and Kentucky bluegrass. The riparian area that runs through the Riddle Brothers Ranch is dominated by black cottonwood, alder, and willow.

Upstream from the Riddle Brothers Ranch in the steep lower part of the Little Blitzen Gorge, the riparian area is still dominated by black cottonwood, alder, dogwood, willow, western juniper, chokecherry, and quaking aspen. In the drier areas above the riparian area, juniper, mountain mahogany, and big sagebrush are the dominant overstory species. The upper gorge contains large aspen groves in the spring areas and along the stream, with mountain big sagebrush communities on the drier bottoms and on the gorge walls. The north facing walls of the upper gorge contain gently sloping ledges with wet meadows. These meadows contain interesting plant communities as well as several special status plant species.

The areas in this segment assessed as having significant unique natural values include the Rooster Comb RNA/ACEC, the Little Blitzen RNA/ACEC, and the riparian/meadow complex at Riddle Brothers Ranch.

**South Fork of the Donner und Blitzen River:** The vegetation in the lower section of the South Fork of the Donner und Blitzen River is dominated by basin big sagebrush, juniper, and Idaho fescue on the side slopes, with alder, willow, chokecherry, and currant along the stream. This area is considered to have unique natural values in the canyon riparian vegetation. Farther upstream, the canyon widens into a broad basin dominated by large meadows in the bottom and willows along the stream. The meadows are dominated by native species such as meadow barley, mannagrass, tufted hairgrass, Nebraska sedge, woolly sedge, and rushes. The headwaters area is privately owned but the springs and meadows are important because they represent a mix of low and high elevation springs and meadows.

The areas containing unique natural values include the river canyon between Blitzen Crossing and the confluence with Mud Creek; the small stream, aspen grove, and meadow at Huffman Camp; and the headwaters of the South Fork of the Donner und Blitzen River.

**Big Indian Creek:** The lower part of Big Indian Creek contains a narrow band of riparian area dominated by alder, dogwood, and willows. The upland areas contain juniper, mountain mahogany, and mountain big sagebrush, with an understory of Idaho fescue and bluebunch wheatgrass. Mountain mahogany increases in the uplands of the lower part of Big Indian Gorge. As the riparian bottom becomes wider, black cottonwood, aspen, and willow are the dominant species. The uplands are still dominated by mountain big sagebrush with an understory of needlegrass and Idaho fescue.

Near the headwall, the riparian area is dominated by willows and wet meadows containing sedges, tufted hairgrass, alpine timothy, bistort, moonworts, owl clover, and gentians. The cirques at the head of the gorge contain alpine ponds and many special status plant species.

Within Big Indian Gorge, the unique natural areas of particular interest include the mountain mahogany stands near the bend in the gorge, the headwater meadows, and the upper cirque.

**Little Indian Creek:** Little Indian Creek contains some of the most diverse riparian area in the entire river corridor. The narrow lower part of the canyon contains alder, birch, black cottonwood, chokecherry, dogwood, serviceberry, and hawthorn. As the canyon widens in the middle part of the segment, the riparian area is dominated by willows, wet meadows, and active beaver ponds. The meadows in this area are dominated by many species of sedges and are in good ecological condition. Other species common in this area include monkshood, groundsel, false hellebore, and grapeferns. Aspen stands integrate with the willow riparian area on the north facing slopes and contain vegetation such as blue wildrye, horsemint, and bearded wheatgrass. On the drier uplands, mountain big sagebrush and snowberry are the dominant overstory plants, with needlegrass and sedges in the understory.

The headwaters and cirques contain many diverse and unusual alpine and subalpine communities. Sedges and willows dominate these areas and aspen stands are present on the north facing slope.

Within Little Indian Creek, the vegetation communities assessed as having significant unique natural values include the lower riparian area, the beaver ponds, the south facing canyon side slopes, and the headwaters area containing alpine, subalpine, and aspen communities.

**Fish Creek:** The lower part of Fish Creek Canyon is steep and rocky with a very narrow riparian area. The riparian area is dominated by dogwood and willows, with an occasional black cottonwood. The steep upland slopes are dominated by juniper and big sagebrush, but mountain mahogany and aspen are present on the slopes as the elevation increases.

The middle part of the Fish Creek is not as steep as the lower part, but the riparian area is still narrow. Black cottonwood, willows, and dogwood are the dominant species in this area. In the uplands, the major species include juniper, mountain mahogany, mountain big sagebrush, basin wildrye, and bluebunch wheatgrass. On the north facing slopes, aspen groves are present on the more mesic sites. The segment from this point to the headwaters is all private land, except for Jackman Park Campground.

The upper part of the Fish Creek Canyon widens significantly into a basin containing large meadows, beaver ponds, and extensive aspen groves. The meadows contain large numbers of sedges and forbs and the riparian area is dominated by willows. The uplands contain mountain big sagebrush, snowberry, serviceberry, mountain brome, needlegrass, and paintbrush.

The headwaters of Fish Creek are dominated by meadows and low growing willows. Other species present include tufted hairgrass, alpine timothy, sneezeweed, false hellebore, and many sedges and rushes. The areas with unique natural values include the meadows and extensive aspen forests in the upper part of the canyon and the meadows at the headwaters.

**Mud Creek:** The lower and middle parts of Mud Creek contain a somewhat narrow riparian area with patches of willows and meadows containing sedges, rushes, Kentucky bluegrass, and many species of forbs. The adjacent upland area is dominated by juniper and mountain big sagebrush. The upper part of Mud Creek opens up into extensive aspen groves and meadows at the headwaters, with mountain big sagebrush in the uplands.

**Ankle Creek:** The lower part of Ankle Creek is similar to the lower part of Mud Creek. Willows and meadows dominate the riparian area and juniper and mountain big sagebrush dominate the adjacent uplands. The middle part of Ankle Creek is also dominated by meadow areas, but there are fewer willows in the riparian area than in the lower part. The uplands are dominated by mountain big sagebrush. The headwaters contain extensive meadow areas dominated by sedges and rushes as well as large aspen groves.

**South Fork Ankle Creek:** The riparian vegetation on the South Fork of Ankle Creek is primarily made up of meadows containing sedges, rushes, and forbs with occasional patches of willows. Mountain big sagebrush is the dominant vegetation on the adjacent uplands.

#### 4.5.4.3 Wildhorse WSR System

**Wildhorse Creek:** The vegetation in the upper portion of Wildhorse Creek from 9,000 feet to approximately 7,600 feet in elevation is mostly wet meadows containing sedges interspersed with dry, rocky slopes containing sedges, Steens Mountain thistle, arnicas, and scattered patches of mountain big sagebrush. Special status plant species that are known to exist in this area are Steens Mountain paintbrush and Steens Mountain penstemon. From 7,600 feet in elevation to approximately 6,000 feet, the riparian area is dominated sparingly in some areas by black cottonwood and in other areas by quaking aspen. Willows are also present as well as western juniper in this part of the segment. Mountain big sagebrush is the dominant vegetation on the dry slopes above the riparian area. From 6,000 feet down to the bottom of the segment at 5,000 feet in elevation, the riparian area consists mostly of willows with some western juniper and mountain big sagebrush. Mountain big sagebrush and western juniper are the dominant vegetation types on the dry slopes of the lowest part of Wildhorse Creek.

**Little Wildhorse Creek:** The vegetation in the upper portion of Little Wildhorse Creek from 9,000 feet down to 8,000 feet in elevation consists mostly of wet and dry meadows dominated by various species of sedges and arnicas. On the rocky slopes above Little Wildhorse Lake the dominant vegetation is mountain big sagebrush and wax currant. The special status plant species that are known to exist in this area include Hayden's cymopterus, Steens Mountain draba, weak-stemmed stonecrop, foetid sedge, new sedge, teacher's sedge, Cusick's hyssop, Kruckberg's sword fern, Nevada spring beauty, Steens Mountain paintbrush, and Steens Mountain penstemon. The middle part of the segment from 8,000 feet in elevation down to 7,400 feet is characterized by narrow riparian areas with extensive wet meadows dominated by sedges. The dry, rocky slopes above the creek are dominated by sedges, Steens Mountain thistle and mountain big sagebrush. The lower portion of the drainage near the confluence with Wildhorse Creek is also a narrow band of riparian area containing sedges and Steens Mountain thistle. The slopes above the lower riparian area are dominated by mountain big sagebrush.

#### 4.5.4.4 Kiger WSR

**Kiger Creek:** The lower part of Kiger Creek contains large aspen groves on the moist, gentle slopes above the creek and mountain big sagebrush mixed with western juniper on the dryer slopes. Willows are densely packed along the creek, with sedge dominated meadows in the open areas. The upper portion of Kiger Creek consists of many riparian tributaries originating from large snowfields and springs. The streamside vegetation in the upper gorge is dominated by willow thickets surrounded by large groves of quaking aspen. The spring areas contain meadow vegetation such as sedges and forbs. High elevation vernal ponds perched on the west side of the upper gorge were formed when glaciers retreated at the end of the ice age. The dry, rocky slopes above the stream in the upper gorge are dominated by mountain big sagebrush.

#### 4.5.4.5 Riparian Areas

##### 4.5.4.5.1 Current Management Situation

Riparian vegetation communities are influenced by landform, stream gradient, water availability, soil, and elevation, as well as historic and recent disturbance factors including fire, flooding/erosion, grazing, and recreation. Riparian vegetation communities within Steens Mountain Wilderness and WSR corridors generally consist of trees, shrubs, and herbaceous vegetation. Woody vegetation (trees and shrubs) may include cottonwood, aspen, willow, alder, dogwood, and chokecherry, among others. Herbaceous vegetation consists of a variety of sedges, rushes, or grasses. The general vegetation discussion includes a description of riparian vegetation for the WSRs. The observed expansion and competition of western juniper in riparian areas is of particular concern relative to maintenance and restoration of riparian vegetation communities and associated values such as fish and wildlife habitat, and water quality and quantity.

The majority of public land perennial stream reaches and associated riparian areas on public land in Steens Mountain Wilderness and WSRs were evaluated using Proper Functioning Condition (PFC) assessments. Table 10 summarizes PFC assessments conducted in the CMPA between 1997 and 2000, which includes Steens Mountain Wilderness and WSRs. Table 11 indicates that the WSR segments are properly functioning and contain the attributes necessary for riparian maintenance or recovery, or are in an upward trend. The BLM (USDI 1998) presents the concept of physical function of riparian areas, referred to as PFC, as a minimal threshold for managing associated values such as water quality, fish and wildlife habitat, aesthetics, and livestock forage. PFC is a qualitative assessment that considers hydrology, vegetation, and soil/landform attributes and rates riparian function as follows:

- **Proper Functioning Condition:** Riparian/wetland areas are properly functioning when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid in floodplain development; improve flood-water retention and ground water recharge; develop root masses that stabilize streambanks against cutting action; 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 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. Stream reaches determined to be FAR are further assessed for Trend – upward, not apparent, or downward.
- **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.

PFC does not necessarily equate to potential natural community (PNC), advanced ecological status, or desired future condition. Rather, PFC demonstrates the level of resilience required for a system to function and allow for maintenance and recovery of desired values such as water quality and fish habitat.

**Table 10: Proper Functioning Condition Assessment Summary for Public Land Stream Reaches Within the CMPA Conducted Between 1998 and 2000**

Rating / Trend	Miles	Percent
Proper Functioning Condition	185	75%
Functional - At Risk / Upward Trend	33	13%
Functional - At Risk / Non-Apparent Trend	21	9%
Functional - At Risk / Downward Trend	4.5	2%
Non-Functioning	3	1%
Total	246.5	100%

**Table 11: Proper Functioning Condition Assessment Summary for Public Land WSR Segments**

Stream	Rating/Trend (miles)			Percent		
	PFC	FAR/Trend	NF	PFC	FAR	NF
Donner und Blitzen River	9.25	4.25 / Upward	---	69%	31%	0%
Little Blitzen River	13.75	---	---	100%	0%	0%
South Fork Donner und Blitzen River	10	3.75 / Upward	---	73%	27%	0%
Big Indian Creek	11.25	---	---	100%	0%	0%
Little Indian Creek	4.25	---	---	100%	0%	0%
Fish Creek	6.5	---	---	100%	0%	0%
Mud Creek	3.5	1.75 / Upward	---	67%	33%	0%
Ankle Creek	2.75	5.25 / Upward	---	34%	66%	0%
South Fork Ankle Creek	---	1.50 / Upward	---	0%	100%	0%
Little Wildhorse Creek	2.5	---	---	100%	0%	0%
Wildhorse Creek	7.25	---	---	100%	0%	0%
Kiger Creek	4.25	---	---	100%	0%	0%

Estimates to the 0.25 mile. PFC, FAR, and Nonfunctioning (NF); Trend: Upward, Not Apparent or Downward.

#### 4.5.4.5.2 Management Objectives

- To maintain, restore, or improve riparian/wetland vegetation communities toward an advanced ecological status<sup>1</sup> condition at the reach or area scale relative to wilderness management and other resource specific management objectives.

#### 4.5.4.5.3 Management Direction

- Assess reach or area scale riparian/wetland vegetation community to evaluate site potential and capability, and evaluate opportunities and needs for maintenance, restoration, or improvement to maintain or progress toward an advanced ecological status or other defined ecological status, in accordance with wilderness management and other resource specific management objectives.
- Collect and propagate native riparian vegetation for restoration purposes. Implement restoration or improvement of riparian vegetation communities through planting and protection, as necessary, based on watershed or project level assessment and planning, in accordance with wilderness management and other resource specific management objectives as determined may be needed through MRDG.

#### 4.5.4.6 Human Altered Plant Communities

**Western Juniper:** Western juniper is a long lived tree species capable of living 1,000 years or more. 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) and structural characteristics such as standing and down dead trees, decadent living trees, bole cavities, stripbark, and branches covered with lichens. These stands account for less than three percent of the western juniper woodlands across eastern Oregon. While special characteristics of old growth woodlands provide habitat for plant and wildlife species, the encroachment of western juniper into mountain big sagebrush and quaking aspen plant communities is a major concern across large areas of the Planning Area, including Steens Mountain Wilderness and WSRs.

<sup>1</sup>Advanced Ecological Status: A biotic community with a high coefficient of similarity to a defined or perceived PNC for an ecological site, usually late seral or PNC ecological status.

Historically, western juniper was limited to rocky ridge tops and shallow soil areas where fires rarely occurred. Past livestock management practices 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 120 years. Recent expansion of western juniper into mountain big sagebrush, riparian woodlands, and quaking aspen and mountain mahogany stands has been at the expense of the associated vegetation. Western juniper has encroached into some stands to the point that all associated woody vegetation has been replaced. Sections of the Donner und Blitzen WSR, Mud and Ankle Creek WSRs, and Kiger Creek WSR have been influenced by juniper. Large stands of quaking aspen and riparian woodlands along these creeks have been replaced by western juniper.

The uplands are also being converted to western juniper woodlands. This total type conversion alters the habitat for many plant and animal species. There are also physical changes that occur to riparian areas and uplands. As western juniper trees approach the maximum density, the amount of bare ground increases. This increases the amount of sediment that is moved down slope toward the riparian areas. If the riparian area has also been converted to western juniper, there is a greater likelihood of sediment reaching the stream. Treatment of these stands, especially small isolated pockets, may require protection from wild and domestic large herbivores until new suckers or plants can reach heights above the browse line. Treatment also helps to increase ground cover and reduce the movement of soil down slope.

**Cheatgrass:** Approximately two percent of Steens Mountain Wilderness has been mapped as dominated by cheatgrass, a nonnative plant species. This number has probably increased since the time data were collected for mapping. Since the late 1980s, five large fires have burned on the east side of Steens Mountain. Some of this ground has been converted to cheatgrass following the fire. Cheatgrass is an invasive nonnative annual grass that has altered the fire regime for some sagebrush vegetation types on the east side of Steens Mountain. Cheatgrass dominated areas tend to burn more frequently compared with the native shrublands and grasslands, diminishing the occurrence of associated woody plants. Increases of cheatgrass have also altered the phenological 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. Cheatgrass invasion substantially reduces biodiversity and the land's value for livestock forage and wildlife habitat. Many of these sites have crossed an ecological threshold. Passive management actions will not return the site to the historic plant community. Removing fire, grazing, or other disturbance factors will not change the character of the plant community. Reversal of this ecological cycle requires human intervention or alteration of current land management.

#### 4.5.4.7 Management Objectives

- To maintain or improve the ecological status of native plant communities, consistent with wilderness and WSRs guidance.
- To maintain or improve late seral stage ecological characteristics in old growth western juniper woodlands consistent with wilderness and WSRs guidance.
- To reduce the component of western juniper and other associated woody plant species in quaking aspen and mountain mahogany stands, consistent with wilderness and WSRs guidance.
- To reduce the influence of post settlement (stands with trees less than 120 years old) western juniper to restore riparian and sagebrush habitats, consistent with wilderness and WSRs guidance.

#### 4.5.4.8 Management Direction

- Develop a restoration strategy for areas where western juniper and cheatgrass encroachment is unnaturally threatening ecological function and species diversity using the MDRG and methods compatible with wilderness and WSRs designation.

### 4.5.5 **Noxious Weeds**

#### 4.5.5.1 Current Management Situation

Noxious weeds are present in limited amounts within Steens Mountain Wilderness and WSRs. The Burns District has an ongoing weed management program which involves education/awareness, prevention, inventory, treatment, and

monitoring. Disturbance, especially along roads and other transportation corridors is the primary contributor to the introduction and spread of weeds. Biological spread through birds or mammals also plays a minor role. The district's weed management program incorporates a variety of treatment options including manual, chemical, mechanical, and biological methods of control.

#### 4.5.5.2 Management Objectives

- To reduce existing and prevent new noxious weeds infestations in Steens Mountain Wilderness and WSRs. Priority will be given to lands with high quality natural resource values or disturbed areas (roads, ROWs, waterholes, and recreation sites).
- To improve awareness in BLM staff, permittees, private land inholders, and the public about what they can do to help identify weed infestations or prevent the spread noxious weeds in Steens Mountain Wilderness and WSRs.

#### 4.5.5.3 Management Direction

- Identify and prioritize areas with noxious weed infestations in Steens Mountain Wilderness and WSRs and implement the treatment method(s) that best provides for weed management or eradication, while protecting wilderness character.
- Continue with current outreach activities, which include handouts, displays, and posting information on noxious weed identification and preventing the spread of noxious weeds. Consider targeting key public use areas like developed recreation sites or trailheads where there is a specific noxious weed concern.
- Maintain partnerships with local groups and government agencies to combine efforts in the control and prevention of noxious weed infestations.
- Control new infestations in the first year of discovery whenever possible.

### 4.5.6 **Fish**

#### 4.5.6.1 Current Management Situation

The BLM is responsible for managing a wide array of habitats used by native and introduced (Lahontan cutthroat trout) fish species. The ODFW is responsible for managing fish and wildlife populations. The BLM manages fish 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.

Ten species of native fish (see Attachment 2) are likely to be found in the Steens Mountain Wilderness and WSRs. Three species or populations (redband trout, Malheur mottled sculpin, and Catlow tui chub) are considered tracking, or sensitive by the BLM. Lahontan cutthroat trout is the only fish found in the Steens Mountain Wilderness or WSRs listed as threatened by both the State of Oregon and the federal government. The ODFW does not currently stock any of the rivers in the Steens Mountain Wilderness or WSRs with hatchery stock fish. At one time, a hatchery strain of Lahontan cutthroat trout was stocked in Wildhorse Lake, but this has been discontinued; there are no plans to restart this stocking. These fish seem to be self-sustaining in Wildhorse Lake. Fish and fish habitat are ORVs in all WSR segments except for Wildhorse and Little Wildhorse Creeks. The primary focus for managing fish habitat is relative to redband trout and populations of Lahontan cutthroat trout protected under the Endangered Species Act (ESA). Management of these species will provide the necessary habitat for other co-existing native aquatic species.

**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 in the Trout Creek Mountains were introduced into Pike, Mosquito, Little McCoy, Big Alvord, Little Alvord, Cottonwood, and Willow Creeks on the east side of the Steens. Surveys conducted in 1991 confirmed that many of the introduced Lahontan cutthroat trout still exist.

A population of hatchery-produced Lahontan cutthroat trout also inhabits Wildhorse Lake, and Wildhorse Creek. Since these fish originated from hatchery stock, they are not considered pure-strain Lahontan cutthroat trout and are not considered a protected species.

Pursuant to the ESA, Lahontan cutthroat trout is federally listed as threatened throughout its range. The BLM and 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 (USDI 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.

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 subspecies. Drought conditions coupled with extremely low temperatures and limited riparian cover may cause stream segments to freeze completely during winter.

**Redband Trout:** Redband trout are a subspecies of rainbow trout which have been segregated into 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). The USFWS (Federal Register 2000) recognizes the redband trout within the Steens Mountain Wilderness and WSRs 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 77° 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 overhanging vegetation.

Redband trout are found in the Donner und Blitzen WSR system and Kiger Creek WSR, as well as Home Creek and Threemile Creek in the Steens Mountain Wilderness. In the Donner und Blitzen WSR, the gauging weir upstream from Page Springs Campground may limit upstream movement of redband trout and other native fish species. Nonnative fish species, such as carp and sunfish, which may compete for resources or prey upon redband trout are present downstream of the gauging weir. The weir provides an effective barrier to prevent these nonnative fish species from migrating upstream and competing with the native fish species that are present.

**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. Due to its restricted distributions and threats to remaining habitat, the subspecies is considered a species of special concern by the American Fisheries Society (Williams et al. 1989), and is a BLM tracking species.

Catlow tui chub occur in Home Creek and Threemile Creek that drain the west flank of the Catlow Rim. The Catlow tui chub has a restricted range, but appears to be locally abundant in streams and in Threemile Reservoir. Threemile and Home Creeks are partially in the Steens Mountain Wilderness.

Little is known about the habitat relationships of the Catlow tui chub. Their preference for low gradient reaches of 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.

**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.

Distribution includes the Donner und Blitzen River and tributary streams on Steens Mountain. 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 26° 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.

**Redband Trout Reserve :** Portions of the Donner und Blitzen WSR located in Steens Mountain Wilderness provide habitat for 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 Steens Mountain Wilderness.

The management of this area is guided by the Steens Act, the WSRs Act, and the Wilderness Act, in addition to the required consultation with the SMAC and the ODFW. Recreation will 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 through the RMP/EIS process.

#### 4.5.6.2 Management Objectives

- To maintain, restore, or improve special status species habitats.
- To conserve special status animal species and the ecosystems on which they depend. To the extent possible and practical, fish community connectivity and interrelationships will be emphasized in most habitats.
- To maintain genetic integrity of redband trout in the RTR.
- To increase the distribution and abundance of redband trout in the RTR through maintenance or restoration of habitat quality and quantity.

#### 4.5.6.3 Management Direction

- Management of special status species habitat should include passive and active measures associated with development and implementation of other resource management actions to maintain, restore, or improve specific habitat attributes identified through watershed assessment and site specific activity plans to balance a variety of resource management and uses.
- 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.
- Coordinate and cooperate with the ODFW and the Malheur National Wildlife Refuge (Malheur NWR) in developing and revising Native Fish Conservation Plan(s) for the Donner und Blitzen River subbasin in support of the ODFW's Native Fish Conservation Policy.

- Riparian habitats will be managed toward 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 WSRs Act, as appropriate.
- Alternatives will 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. Any proposal for the removal or modification of the Page Springs weir along the Donner und Blitzen WSR will also need to be evaluated for compliance with Section 7 of the WSRs Act.

#### 4.5.7 Wildlife

##### 4.5.7.1 Current Management Situation

Steens Mountain Wilderness and the WSRs contain a wide diversity of wildlife habitat with many species of amphibians, reptiles, birds, and mammals found in the area. Parts of Steens Mountain Wilderness and the Donner und Blitzen WSR are adjacent to the extensive wetlands found on the nearby Malheur NWR. This accounts for some of the wetland special status species that also occur along the WSR, as this corridor is used as a travel route. A summary of the special status species in Steens Mountain Wilderness and WSR corridors is listed in Attachment 2.

The ODFW is responsible for managing wildlife species populations through management objectives specified in their respective management plans; the BLM is responsible for managing the habitat that supports these populations. The ODFW and BLM work cooperatively together on the management of wildlife and wildlife habitat under a statewide Memorandum of Understanding (MOU) that was signed by both agencies in 2001.

The only special status species in the area that is federally listed is the bald eagle (listed as Threatened). Bald eagles are winter-spring residents, having been sighted up the Donner und Blitzen River Canyon. A winter roost exists in this area. The Columbia spotted frog is a Candidate for listing. Populations have been found from Page Springs Campground up to Fish Lake, McCoy Creek, Little Fish Creek, and Grove Creeks. Other areas are still being inventoried for the presence of this species. Other species such as Greater sage-grouse have been petitioned to be listed, but no determination has yet been made. Several leks are located in Steens Mountain Wilderness. Most of Steens Mountain Wilderness is sage-grouse nesting, early and late brood rearing habitat with some areas along Catlow Rim and below Alvord Peak used as winter habitat. Black rosy finches, a rare occurrence in Oregon, nest in the subalpine area.

Nesting waterfowl make light use of the Lower Donner und Blitzen WSR with common mergansers and dabbling ducks the predominant nesting species. Some nesting by Canada geese occurs. Sub-zero temperatures freeze canals and ponds on the Malheur NWR, causing waterfowl using the refuge to move onto the lower portion of the Donner und Blitzen WSR. Most of these birds are mallards, bufflehead, common goldeneye, and Canada geese.

Game birds include chukar, California quail, mourning dove, sage-grouse, common snipe, and waterfowl. Pheasants occur near Page Springs Campground. Nesting raptors include golden eagle, prairie falcon, great-horned owl, long-eared owl, American kestrel, northern harrier, red-tailed hawk, and ferruginous hawk. Northern goshawk, sharp-shinned hawk, and Cooper's hawk are species that also nest in the area but they are uncommon. Turkey vultures and ravens nest in cliffs along the deep canyons. American peregrine falcons are observed rarely as migrants. Nongame birds using the river corridor include yellow warbler, belted kingfisher, northern flicker, western wood peewee, western kingbird, and many other species.

Game mammals include mule deer, pronghorn antelope, Rocky Mountain elk, California bighorn sheep (a special status species), and cougar. The ODFW believes that many of the canyons are potential summer and winter bighorn sheep range. Future transplants to all areas may occur if domestic sheep are ever removed from the private land around Fish Lake. Steens Mountain Wilderness and WSRs provide year-long habitat for all of these species, with seasonal elevational movements triggered by weather conditions.

Nongame mammals include golden-mantled ground squirrel, canyon mouse, deer mouse, harvest mouse, marmot, voles, several species of bats, coyotes, bobcat, and many other species. Beaver are found in many stream segments. Pika may be found at the head of the gorges, but are a rare sight.

Amphibians and reptiles include Pacific treefrog, western rattlesnake, gopher snake, sagebrush lizard, western fence lizard, and others.

#### 4.5.7.2 Management Objectives

- To the extent possible, wildlife species will be allowed to maintain a natural balance with their habitat and each other. Depending on wilderness conditions, however, management actions may be necessary at times for the preservation of sensitive, rare, threatened or endangered species.
- To evaluate habitat requirements and conditions for the reintroduction of extirpated species into historic habitat in Steens Mountain Wilderness and WSR corridors.
- To continue cooperation and coordination with other state and federal agencies on the management of wildlife, wildlife habitat, and protection of wilderness character in Steens Mountain Wilderness and WSRs.
- To manage forage production to support wildlife population levels identified by the ODFW, while minimizing effects to wilderness resources.
- To manage quaking aspen and western juniper plant communities to meet habitat requirements for wildlife.
- To manage big sagebrush communities to meet the life history habitat requirements of sagebrush dependent species and other wildlife.

#### 4.5.7.3 Management Direction

- Identify site specific areas in Steens Mountain Wilderness and WSRs where naturally occurring critical habitat conditions required by sensitive, rare, threatened or endangered wildlife species are not being met. Develop and implement habitat management actions where necessary to preserve these wildlife species, while still protecting wilderness resources.
- Continue coordination with the ODFW and other federal and state agencies on wildlife habitat management and monitoring as appropriate. Where necessary develop and implement habitat management actions necessary to provide critical habitat (i.e. deer winter range) for these populations, while still protecting wilderness resources.
- In Steens Mountain Wilderness, actions such as transplants, trapping, distribution of medicine, emergency situations, and maintenance of existing guzzlers may be authorized on a case-by-case basis in accordance with the Steens Act, the Wilderness Act, and Appendix B of House Report 101-405 of the 101st Congress.
- 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 “1998 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 wild sheep habitats.
- Initiate cooperative efforts with private landowners and current sheep and goat permittees to reduce the chance of mixing of domestic and wild sheep.

### 4.5.8 **Paleontological Resources**

#### 4.5.8.1 Current Management Situation

Paleontological resources are defined as the fossilized remains of plants and animals. Of particular interest and importance 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 Steens Mountain Wilderness. Paleontological localities are not known nor are they likely to occur within WSR corridors.

Most of the finds in Steens Mountain Wilderness have been exposed by wind or water erosion, and are widely dispersed. Several are the subject of ongoing academic research. Exposures of Miocene sedimentary rocks are observable 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.

An assessment of known paleontological localities was conducted in May of 1999 within Steens Mountain Wilderness. 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 lake environment in a slightly warmer, more temperate climate than exists in the area 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. Funding is currently being sought for challenge cost share inventory and assessment with the South Dakota School of Mining and Technology for a portion of Steens Mountain Wilderness that has not been inventoried for paleontological resources.

Public education and interpretation have not been implemented on a large scale. No interpretive materials have been developed, except for a paleontological poster that is used for display at special events and in the public reception area at the Burns DO.

#### 4.5.8.2 Management Objectives

- To 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.

#### 4.5.8.3 Management Direction

- Use predictive modeling and sample inventory for identifying significant paleontological localities which may be in conflict with other resource uses.
- Excavate significant paleontological localities in cooperation with universities, museums and other federal agencies in compliance with all laws, regulations or other requirements, if compatible with wilderness and WSRs designations and the MRDG.
- Record and salvage eroding paleontological material at localities in east central and the southeast part of Steens Mountain Wilderness once every five years in compliance with all laws, regulations, or other requirements.
- Law enforcement surveillance will be focused on the east side of Steens Mountain Wilderness near the East Steens Road. Protective measures at significant localities will be used as appropriate.
- Create paleontology interpretive opportunities for public education including but not limited to brochures and portable or static interpretive displays for local, regional, and national education, where applicable.
- Any permanent interpretive facilities will be constructed outside Steens Mountain Wilderness. Interpretation projects will be implemented only if they will not affect the paleontological values at the subject locality.
- Monitor known paleontological sites within Steens Mountain Wilderness and WSRs after wildland fire in order to study fire effects and to prevent post-fire looting.

#### 4.5.9 Cultural Resources

##### 4.5.9.1 Current Management Situation

**Riddle Brothers Ranch National Historic District:** None of the Riddle Brothers Ranch National Historic District falls within Steens Mountain Wilderness. A large portion of the historic district does fall within the Little Blitzen River WSR corridor and has been identified as an ORV. In 1991 the Riddle Brothers Ranch was designated a National Historic District. A Cultural Resource Management Plan was completed for the ranch in 1995. Since then, the Frederick Riddle House, cookhouse, barn, and Benjamin Riddle House have been restored. Other historic structures in the historic district such as the Frederick Riddle root cellar, blacksmith shop/tackroom, and Benjamin Riddle root cellar are being maintained in their current condition. The Walter Riddle House was destroyed by wildfire in 1994. All that remains is a stone fireplace. A number of detailed photos exist of the building that could guide any future reconstruction efforts.

Approximately 500 people visit the ranch each year. Due to snow and poor road conditions, access is normally limited to May through November. A volunteer caretaker stays onsite from June 1 through October 15 in a small cabin on the west side of the Little Blitzen River. The grey house, a BLM administrative building, and the corrals at the Frederick Riddle complex are also used by BLM employees and volunteers for administrative purposes. Three portable restrooms provide sanitation for the caretaker and the public. A well at the grey house provides potable water for the caretaker. When the caretaker is onsite, visitors are allowed to drive into the ranch two days a week (normally on one week and weekend day). Otherwise, visitors must park outside the ranch entrance gate and walk in. Only day use is allowed and the entrance gate is locked by the caretaker each night at dusk. As an additional security measure, a gate on the Cold Springs Road near Desert Meadows is locked. Motorized access past this gate is by permit only. Law enforcement also patrols the ranch.

Current fire protection at the ranch headquarters complex is provided by a greenbelt of vegetation around most of the historic and caretaker structures. The greenbelt is maintained by watering and frequent mowing by the caretaker. The watering system is comprised of a large number of fire hoses arrayed throughout the complex with smaller garden hoses to various sprinklers. This system is cumbersome to manage, a safety hazard for visitors, and does not blend with the historic setting of the ranch.

Interpretation at Riddle Brothers Ranch National Historic District has been approved and funded and will be completed in 2005. The interpretive panels will be installed at the south gate just outside of the Historic District and Little Blitzen WSR corridor.

**Other Cultural Resources:** Approximately six percent of designated Steens Mountain Wilderness has been inventoried for cultural resources. With the exception of Riddle Brothers Ranch, much inventory work is needed in the WSR corridors. Under current management, sites in conflict with other resource uses are mitigated on a case-by-case basis. Funding for the creation of a predictive model to aid in locating significant sites in conflict with other resource uses is currently being sought. Inventories have been conducted atop Steens Mountain in recreation use areas and in the Alvord Valley. Inventory data are used in site evaluation, effects assessment, interpretation, and public education.

##### 4.5.9.2 Management Objectives

###### **Riddle Brothers Ranch Historic District:**

- To protect the cultural resources in the Riddle Brothers Ranch National Historic District and to manage the ranch in compliance with the Cultural Resource Management Plan.
- To maintain, restore, or reconstruct historic structures in the existing Riddle Brothers National Historic District as identified in the Cultural Resource Management Plan.
- To provide adequate facilities to meet public health and safety needs, provide for resource protection, and for administrative needs. All facilities should be in character with the ranch setting.

**Other Cultural Resources:**

- To preserve, protect, and manage other cultural resources in accordance and in compliance 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.

4.5.9.3 Management Direction**Riddle Brothers Ranch Historic District:**

- Continue to manage visitor use in the Historic District as described in the current management situation.
- Reduce fire hazards around the main building complex and caretaker's cabin at the northwest end of the Historic District by watering and mowing lawns around the structures and keeping dried grasses cut down approximately 75 feet beyond the lawn perimeter. Encroaching juniper trees will be felled if within 75 feet of the historic or administrative buildings. Trees will be cut up for firewood and slash will be disposed by hand piling and burning during late fall.
- Reduce fire hazards around the Benjamin Riddle House complex by clearing brush and high grass in a 50-foot circle around the complex. A fireline will be dug to mineral soil and will be maintained on the perimeter of the cleared area. If reconstructed, the Walter Riddle Cabin will be protected in a similar manner.
- Consider and analyze in a NEPA document the installation of an underground lawn watering system that will continue to provide fire protection, improve visitor safety, and will be more in character with the historic structures and setting.
- Develop a self-guided tour brochure that could be distributed at the Burns DO, the Riddle Brothers Ranch National Historic District, and other appropriate outlets. No trail construction will be necessary for the tour. Historic structures, features and equipment will be identified in the field by a number or letter incised into the side of a low juniper post.
- The access road into and through the Historic District will continue to be bladed once a year.
- Consider and analyze in a NEPA document the installation of a more permanent restroom that has an appearance more in character with the historic structures than the existing portable toilets.

**Other Cultural Resources:**

- Use predictive modeling and inventories, locate significant sites that may be in conflict with other resource uses. As funding allows, attempt to inventory 500 acres per year until Steens Mountain Wilderness and WSRs cultural resource inventories have been completed. High priority areas will include the headwaters of Big Indian, Little Indian, and the entire Little Blitzen WSR corridors.
- Use inventory data, site evaluations, condition assessments, site management plans, and interpretation in public education.
- Research significant cultural sites in cooperation with universities, the Burns Paiute Tribe, other tribes, and other heritage partners and in compliance with all laws regulations and other requirements.
- Utilize BLM law enforcement staff to monitor illegal collecting and excavation activities in Steens Mountain Wilderness and WSR corridors especially Little Blitzen River and Donner und Blitzen WSRs.
- As needed, implement physical, administrative, and data recovery measures where needed to mitigate effects, in compliance with all laws regulations and other requirements.
- Monitor known cultural sites in Steens Mountain Wilderness and WSRs after wildland fire in order to study fire effects and to prevent post-fire looting.

#### **4.5.10 Native American Traditional Practices**

##### 4.5.10.1 Current Management Situation

Prior to Euro-American settlement, Steens Mountain Wilderness and WSRs were 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 Steens Mountain Wilderness or WSRs. Evidence of prehistoric use of Steens Mountain is widespread and recent excavations at the Mortar Riddle Site reveal the use of the Little Blitzen WSR as early as 7,900 years ago. 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.

Traditionally used resources in Steens Mountain Wilderness and WSRs include a wide variety of plant and animal foods, as well as materials for making tools and shelter. Edible roots include biscuitroot, bitterroot, 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, marmots, pronghorn antelope, and bighorn 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 and willows are found in riparian settings, while grasses for basketry and food seeds are encountered in upland plant communities. 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. Basalt toolstone sources are found in Steens Mountain Wilderness and WSR corridors.

The BLM has signed agreements with the Burns Paiute Tribe and Tribes of Warm Springs and Umatilla Indian Reservations. These memoranda have been established to formalize consultation and cooperation that include Steens Mountain Wilderness and the WSRs. The Burns Paiute Tribe and other tribes are consulted on various projects, especially those involving large scale vegetation manipulation. Coordination and consultation with American Indian tribes are documented.

##### 4.5.10.2 Management Objectives

- To monitor and protect traditional sites, landforms, burial sites, resources, and other areas of interest in consultation with the Burns Paiute Tribe and other tribes.

##### 4.5.10.3 Management Direction

- BLM staff will continue to consult/coordinate with the Burns Paiute Tribe and other tribes to identify and manage traditional practice areas in Steens Mountain Wilderness and WSRs. Traditional Cultural Properties would be nominated. Burial sites, if discovered, will be monitored. Coordination and consultation with American Indian tribes will be documented.
- Integrate maintenance and protection of native subsistence species into vegetation management activities.
- The BLM will identify plants of cultural, traditional, and economic importance during botanical and cultural inventories, and will input information into the Freedom of Information Act-exempt Geographical Information System (GIS) layer.
- Monitor known traditional sites in Steens Mountain Wilderness and WSRs after wildland fire in order to study fire effects and to prevent post-fire looting.

## 4.5.11 Visual Resources

### 4.5.11.1 Current Management Situation

The Federal Land and Policy Management Act (FLPMA) of 1976 requires the BLM to consider the effects of management actions on the visual quality of the landscape. The BLM uses Visual Resource Management (VRM) classes which are determined from visual resource inventories. VRM class objectives range from Class I, which requires the preservation of the existing character of the landscape, to Class IV and provides for management activities that require major modifications to the landscape.

Class I categories are normally assigned to areas where a management decision has been made to preserve the natural landscape as in Congressionally designated areas such as Steens Mountain Wilderness and WSRs with a Wild river classification. Class I 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.

### 4.5.11.2 Management Objectives

- To protect, maintain, improve, or restore visual resource values by managing all BLM administered lands in Steens Mountain Wilderness and WSR corridors in accordance with the VRM Class I objectives.

### 4.5.11.3 Management Direction

- Steens Mountain Wilderness and all WSRs corridors are designated as VRM Class I, which requires the preservation of the existing character of the landscape, with very limited management activity.
- A Visual Contrast Rating Worksheet (BLM Form 8400-4) will be used to assess visual changes from key observation points before implementing any project that may affect visual resources.

## 4.5.12 Energy and Minerals

### 4.5.12.1 Current Management Situation

BLM administered land within WSRs and Steens Mountain wilderness are withdrawn from mineral exploration and development under the terms of the WSRs Act and Wilderness Act. In addition, all WSRs and the Steens Mountain Wilderness are right-of-way, realty use, and renewable energy exclusion areas. There are no pre-designation claims, leases, or permits with grandfathered or valid existing rights in the WSRs of Steens Mountain Wilderness.

## 4.5.13 Wild Horses

### 4.5.13.1 Current Management Situation

The South Steens Herd Management Area (HMA) is the only HMA that occurs in Steens Mountain Wilderness and the Donner und Blitzen WSR Corridor. It extends on the west side of the Donner und Blitzen River, from near Page Springs Campground, south to Roaring Springs Ranch private land. Due to the legislated land exchanges in the Steens Act, the HMA presently includes the part of the WSR that extends onto private land. The HMA is on the east side of the Donner und Blitzen River from a fenceline between Indian Creek and Mud Creek, south onto Roaring Springs private land and out to the east rim overlooking Wildhorse Valley. The HMA also includes the portion of Steens Mountain Wilderness on North Catlow Rim. The current Appropriate Management Level (AML) range is 159 to 304 horses in this HMA with 3,648 animal unit months (AUMs) being allocated for this herd. Wild horses are not considered an ORV for any of the WSR corridors.

A lawsuit in 1996 ordered the BLM to fence the WSR corridors to restrict livestock entry. The fencing was completed in 1997. Due to the fencing along the west boundary of the Donner und Blitzen WSR, South Steens wild horses were not able to access the river in as many areas as they did before 1997. This fencing has also reduced the number of HMA areas that wild horses could access on the east side of the Donner und Blitzen River. While this portion of the HMA is probably not a year long use area for wild horses, recent surveys have found fewer than 20 wild horses using the area. Much of this area was private land prior to the legislated land exchanges and many fences were constructed to control livestock, which may have also kept wild horses from using the area. Recent fence building near Bradeen Crossing and

Burnt Car has reduced access for livestock and wild horses to the river and water. Reduced access to watering areas along the river systems puts more pressure on upland waterholes and springs. Monitoring will need to be conducted to determine ways to distribute horse use throughout the HMA to reduce overuse of spring areas.

Appropriate herd management activities include periodic census inventories and gathering of excess wild horses, as well as potential herd management projects such as fencing or water developments.

#### 4.5.13.2 Management Objectives

- To designate/retain/adjust the HMA.
- To designate/retain/adjust the Herd Areas in inactive status.
- To maintain/adjust AMLs and year long forage allocations for the HMA.
- To maintain a thriving natural ecological balance within the HMA.
- To maintain/improve year-round water sources to sustain the wild horse herd.

#### 4.5.13.3 Management Direction

- The South Steens HMA will be reduced in acreage and its boundary changed to reflect the legislated Steens land exchanges.
- The South Steens Herd Area will be increased in size to reflect the change in land ownership resulting from the legislated Steens land exchanges.
- The current AMLs and wild horse forage allocations will be maintained in all HMAs. Permanent increases or decreases in AML and forage allocations will be considered if monitoring data determine changes in long-term forage availability.
- Wild horse numbers will be managed through gathering, removal, and other approved methods of population control. The initiation of gathering or other methods of population control will be based on census data, herd health, rangeland health, and productivity, as determined by rangeland monitoring studies, climatic conditions, and the occurrence of catastrophic events such as wildfire and drought. Wild horse numbers will normally be reduced to the low end of the AML range when gatherings are conducted. A minimum decision requirement analysis will be completed as part of this process.
- Perimeter fences will be maintained and any wild horses that stray outside HMA boundaries will be removed or returned to the HMA. Gates in interior pasture division fences will be managed to maximize horse access to the HMA.
- Management will 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 if needed to protect wilderness resources; and seek cooperative management agreements for access to or acquire legal access to private water sources that are critical to wild horses.

### 4.5.14 **Areas of Critical Environmental Concern**

#### 4.5.14.1 Current Management Situation

There are five designated and one proposed RNAs/ACECs that fall almost entirely within Steens Mountain Wilderness and portions of the WSR corridors. All portions of the RNA/ACECs that fall within Steens Mountain Wilderness will be exclusion areas for new ROWs and energy or mineral activities. All ACECs in Steens Mountain Wilderness are also RNAs. ACECs in Steens Mountain Wilderness contribute to the protection and study of ecological processes within the Steens Mountain Wilderness. Key elements in these areas are monitored for effects from outside influences to the system,

such as recreation or grazing. The protection of these sensitive areas contributes to the naturalness of Steens Mountain Wilderness and the understanding of natural processes. Below is a summary of each RNA/ACEC.

**East Kiger Plateau:** Approximately 1,216 acres in size, this RNA/ACEC is almost entirely within Steens Mountain Wilderness. This area was designated for the protection of unique plant communities. There are no roads in this RNA/ACEC and the area is designated as closed to motorized and mechanized vehicle use. The portion of this RNA/ACEC that falls within the No Livestock Grazing Area is closed to grazing and the collection of plant materials will be allowed by permit only. In the portion of the RNA/ACEC that falls within the High Steens WSA new ROWs or other realty use authorizations will be avoided unless the activity is compatible with the purpose for which the area was designated. All but 40 acres of the RNA/ACEC will be open to livestock grazing; however, topography limits access to the RNA/ACEC for most livestock.

**Little Blitzen:** Approximately 2,255 acres in size, this RNA/ACEC is located entirely within Steens Mountain Wilderness and includes a portion of the Little Blitzen River WSR. The Steens Loop Road borders the RNA/ACEC on the south and east. There are no roads in the RNA/ACEC. This RNA/ACEC was designated for the protection of unique plant communities and is located within the No Livestock Grazing Area. The collection of plant materials will be allowed by permit only.

**Little Wildhorse Lake:** Approximately 241 acres in size, this RNA/ACEC is located entirely within Steens Mountain Wilderness and includes a portion of the Little Wildhorse Creek WSR. There are no roads in the RNA/ACEC. This RNA/ACEC was designated for the protection of unique plant communities and is located within the No Livestock Grazing Area. The collection of plant materials will be allowed by permit only.

**Rooster Comb:** Approximately 683 acres in size, this RNA/ACEC is located entirely within Steens Mountain Wilderness and includes a portion of the Little Blitzen River WSR. There are no roads in the RNA/ACEC. This RNA/ACEC was designated for the protection of unique plant communities and is located within the No Livestock Grazing Area. The collection of plant materials will be allowed by permit only. Overnight camping will be allowed in historically used areas when consistent with the purpose of the RNA/ACEC and the protection of wilderness resources.

**South Fork Willow Creek:** Approximately 186 acres in size, this RNA/ACEC is located entirely within Steens Mountain Wilderness. There are no roads in the RNA/ACEC. This RNA/ACEC was designated for the protection of unique plant communities and is located within the No Livestock Grazing Area. The collection of plant materials will be allowed by permit only.

**Big Alvord Creek:** Approximately 1,676 acres in size, this RNA/ACEC is located entirely within Steens Mountain Wilderness. This RNA/ACEC was designated for the protection of unique plant communities and is located within the No Livestock Grazing Area. The collection of plant materials will be allowed by permit only.

#### 4.5.14.1 Management Objectives

- To maintain or improve the natural condition of the unique plant communities or associations for which the RNA/ACECs were designated.
- To encourage research and education opportunities within the RNA/ACECs that do not degrade natural ecological processes or conditions.

#### 4.5.14.2 Management Direction

- Continue to monitor RNA/ACEC conditions and take actions as necessary should any resource concerns be identified.

### 4.6 Permitted Use Elements for Steens Mountain Wilderness and WSRs

This section addresses permitted nonconforming uses in Steens Mountain Wilderness and WSRs and those roads which are bounded by Steens Mountain Wilderness, but are not considered part of Steens Mountain Wilderness.

#### 4.6.1 Roads

##### 4.6.1.1 Current Management Situation

There are approximately 53 miles of roads in Steens Mountain Wilderness and 7.3 miles of roads in the WSR corridors that were closed to all forms of motorized and mechanized use as part of the Steens Act (Table 12 and Map W2).

There are approximately 49 miles of road that are open to the public and are bounded on both sides by Steens Mountain Wilderness. The Steens Loop Road is the main arterial road providing access from Highway 205 at Frenchglen, to the summit of Steens Mountain. Most of this road is maintained as a high standard gravel road that runs approximately 18 miles through Steens Mountain Wilderness and approximately 2.75 miles through WSR corridors. There is also an existing concrete bridge where the South Steens Loop Road crosses the Donner und Blitzen WSR. Portions of the Steens Loop Road are typically open May through November and are closed the rest of the year due to weather and poor road conditions. A total of approximately 7.5 miles of road that run through WSR corridors are also still open to the public (Table 12 and Map W2).

There are approximately 51 miles of roads in Steens Mountain Wilderness and 7.3 miles of roads in the WSR corridors classified as Service/Permit Use Routes, which may still be used by livestock operators to administer their BLM grazing permits, and by private landowners to access their inholdings (Table 12 and Map W2). These roads may also occasionally be used by BLM staff for administrative purposes, principally for emergency purposes. These roads are not open for use by the public. Grazing operators and private landowners have (or will have) individual authorizations describing the type of access allowed within Steens Mountain Wilderness and WSR corridors. The various route management categories describing route uses are defined in the Transportation section and Appendix M of the Proposed RMP.

**Table 12: Summary of Road Categories and Mileage**

Road Category	Miles
Roads closed to motorized vehicles and mechanized transport in Steens Mountain Wilderness	53
Roads closed to motorized vehicles and mechanized transport in WSRs	7.3
Roads adjacent to Steens Mountain Wilderness open to motorized vehicles and mechanized transport	49
Roads in WSR Corridors open to motorized vehicles and mechanized transport	7.5
Service/Permit Use Routes in Steens Mountain Wilderness	51
Service/Permit Use Routes in WSRs	7.3

##### 4.6.1.2 Management Objectives

- To maintain existing public and permittee roads and other related infrastructure that was provided for by Section 112 of the Steens Act in a manner that minimizes effects to wilderness resources.
- To manage roads within Steens Mountain Wilderness and WSR corridors consistent with identified Route Management Categories and Maintenance Levels in the Transportation Section of the Proposed RMP.

##### 4.6.1.3 Management Direction

- Maintain the Steens Loop Road and other approved roads at their assigned condition and maintenance standard as described in the Transportation section of the Proposed RMP and shown on the Map W2.
- Close two roads that were identified by the Proposed RMP/FEIS for protection of wilderness and WSR characteristics. These roads lead to the Steens Mountain Wilderness and WSR corridor boundary along the South Fork Donner und Blitzen River (Maps W2 and W3).

## 4.6.2 Grazing

### 4.6.2.1 Current Management Situation

**Steens Mountain Wilderness:** The Steens Act, in Section 202 (d) (1), states that except as provided in section 113(e)(2), grazing of livestock shall 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 101<sup>st</sup> Congress. Within Steens Mountain Wilderness, 94,959 acres of BLM administered lands fall within the No Livestock Grazing Area. The remaining acres will continue to be open to livestock grazing. There are 13 grazing allotments in Steens Mountain Wilderness. The three allotments with the most wilderness are Alvord Peak with 16,812 acres, South Steens with 16,497 acres, and Serrano Point with 11,020 acres. See Table 13 for a summary of the existing allotments within Steens Mountain Wilderness.

Infrastructure associated with grazing management will continue to be observable, including but not limited to fencing, cattleguards, pipelines, reservoirs, waterholes, and spring developments.

**Table 13: Summary of Grazing Allotments in Steens Mountain Wilderness**

Allotment	Acres of Allotment in Steens Mountain Wilderness	Percent of Allotment in Steens Mountain Wilderness
Alvord	5121	2
Alvord Peak	16812	69
Carlson Creek	8701	98
Chimney	373	3
East Ridge	474	9
Frazier Field	8732	43
Hardie Summer	40	2
Mann Lake	1145	3
Mann Lake FFR	814	50
Roaring Springs FFR	4794	75
Scharff FFR	40	15
Serrano Point	11020	79
South Steens	16497	19
<b>Total</b>	<b>74563</b>	

FFR=Fenced Federal Range

**Wild and Scenic River Corridors:** The majority of BLM administered lands in the designated WSR corridors falls within the No Livestock Grazing Area or developed recreation site exclosures. The remaining BLM lands outside the No Livestock Grazing Area are two small parcels including 89 acres in the uplands of Fish Creek, and 67 acres in the uplands of the South Fork Donner und Blitzen River. Some grazing may continue within the WSR corridors, but not generally in the active riparian zones.

### 4.6.2.2 Management Objectives

- To provide for a sustained level of livestock grazing where allowed in Steens Mountain Wilderness, while meeting S&Gs as described in the Proposed RMP/FEIS.
- To implement administrative solutions and rangeland projects to provide proper management for livestock grazing while meeting resource objectives and requirements for S&Gs (USDI 1997a).

- Unless specifically needed as a vegetation management tool, the utilization level as measured at the end of the growing season will not exceed 60 percent on nonnative seedings and 50 percent on native, herbaceous forage plants on a pasture average basis.

#### 4.6.2.3 Management Direction

- Within the wilderness area open to grazing, management actions will provide for sustainable livestock grazing in Steens Mountain Wilderness and WSRs that meets allotment management (natural resource) objectives and the S&Gs (USDI 1997a). Revision of Allotment Management Plans (AMPs) will be based on evaluations and rangeland health assessments, which will determine allowable AUMs and plant community management.
- Interim and long-term grazing management and stocking levels will 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, and frequency of grazing, or periodic rest or deferment) will be implemented. These will 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.
- Existing projects will be maintained if they continue to support livestock grazing. Projects that do not function to support grazing, wildlife, or wild horses will be abandoned and the sites rehabilitated (i.e. the removal of fencing in the No Livestock Grazing Area).

### 4.6.3 **Private Land Inholdings**

#### 4.6.3.1 Current Management Situation

Neither the Steens Act, the Wilderness Act, nor the WSRs Act provide federal land management agencies with the authority to regulate private land. The Steens Act did address providing reasonable access to private land inholdings surrounded by wilderness, which is described in more detail in the roads section above. There are approximately 4,668 acres of private and state lands within Steens Mountain Wilderness. There are approximately 4,022 acres of private land within WSR corridors, most of which occurs within the Fish Creek and Ankle Creek WSR segments.

#### 4.6.3.2 Management Objectives

- To encourage a cooperative working relationship between the BLM and private landowners within Steens Mountain Wilderness and WSR corridors.

#### 4.6.3.3 Management Direction

- Pursue cooperative agreements or projects with willing landowners that help protect or improve wilderness resources or ORVs in WSR corridors.

## 5 STEENS MOUNTAIN WILDERNESS AND WSRs MONITORING PLAN

### 5.1 Monitoring Strategy

Section 111(c) of the Steens Act requires the implementation of a monitoring program for federal lands in the CMPA including Steens Mountain Wilderness and WSRs.

Monitoring data for use by the BLM will generally be collected only by BLM personnel or contractors, except where specific agreements are in place to allow permittees, scientific and research institutions, or volunteers to collect data. All data must be collected under the standards established by the BLM, and are subject to constraints specific to each resource being monitored.

### 5.2 Visitor Use Monitoring

#### 5.2.1 Goals

1. To establish and maintain a wilderness recreational effects monitoring system, gathering baseline data that will assist with future planning by monitoring seven indicators: campsite condition, campsite density, perception of solitude, trail condition, length of visitor stay, recreational stock use, and motor vehicle and mechanical transport intrusions.
2. To evaluate the current condition of the resource in relation to management objectives in order to identify any problems.
3. To recognize trends and to evaluate the effectiveness of management programs in relation to wilderness use.

#### 5.2.2 Objectives

1. To locate, inventory, and document wilderness campsites.
2. To document the condition of wilderness campsites.
3. To evaluate campsite density per management area.
4. To evaluate wilderness solitude by the closeness of wilderness campsites to each other and by monitoring the number of inter-party wilderness encounters.
5. To determine the average length of visitor stay in the wilderness.
6. To establish the effects, or lack thereof, of recreational stock use on each backcountry campsite.
7. To evaluate change in trail width and depth and to analyze and document multiple trailing on established wilderness trails and campsite social trails.
8. To monitor the effects of winter recreation within Steens Mountain Wilderness.
9. To monitor for unauthorized motor vehicle and mechanical transport intrusions into Steens Mountain Wilderness and WSRs.

#### 5.2.3 Procedures

1. Campsites in Big Indian Gorge, Little Blitzen Gorge, Wildhorse and Little Wildhorse Canyons, Little Indian Gorge, Pike Creek Canyon, Cold Springs Canyon, Mud and Ankle Creeks and the Donner and Blitzen River will be monitored. Each campsite will be assigned a rating of minimum, moderate, high or extreme impact according to the Campsite Monitoring Form (OR020-8560-01). Camps will be plotted on maps. The wilderness will continue to be surveyed for additional campsites. The exception is at Wildhorse Lake where camping is only allowed at two established and designated campsites. Any sign of other campsites within Wildhorse Lake basin should be reported, dismantled and naturalized immediately. Also, any sign of campsites at Little Wildhorse Lake will be eliminated.
2. Recreational stock use and effects on campsites will be recorded on a Campsite Monitoring Form (OR020-8560-01).
3. Parties discovered camped within sight or sound of each other will be documented on an Occupied Campsite Form (OR020-8560-03) to evaluate degree of wilderness crowding and opportunities for Register (OR020-8560-05) pages will be used in conjunction with the compiled ranger data.
4. Inter-party wilderness encounters, on and off trail, will be documented and monitored on the Encounters Form (OR020-8560-04) to evaluate degree of wilderness crowding and opportunities for

- solitude. Comments made by visitors on the Trailhead Register (OR020-8560-05) pages will be used in conjunction with the compiled ranger data.
5. Trail counter data (to be installed in 2004) will be used in conjunction with completed Trail Register pages (OR020-8560-05) and ranger field observations to determine wilderness recreation use numbers.
  6. Average length of visitor stay will be determined by tallying information from Trailhead Registers at Big Indian, Little Blitzen, Wildhorse Lake, Pike Creek and the Donner und Blitzen River.
  7. Trail width and depth and multiple trailing will be monitored on established wilderness trails and will be recorded on the Trail Monitoring Form (OR020-8560-02). Established trails include Big Indian, Little Blitzen, Wildhorse Lake, Pike Creek, Mud/Ankle Creek, and the Donner und Blitzen River trail. A random number table was used to determine the points where the trail monitoring will be done. The numbers 1, 2, 4 and 7 were chosen from the random number table to reflect the approximate mile points where the trail monitoring will occur. At these points, a GPS reading will be taken and the monitoring conducted at these points. The exceptions are the Donner und Blitzen River trail where the trail is not seven miles long so only miles one, two and four will be used. Pike Creek trail is less than four miles long, so miles one and two will be used. On the Wildhorse Lake trail, the monitoring will be done along the steep upper slope and on the lower, flat meadow area.
  8. The Winter Recreation Monitoring Form (OR020-8560-06) will be completed by BLM personnel after each monitoring trip into the winter recreation area. The monitoring will include user activity and will also document any intrusions into the wilderness or WSA which will be noted as violations. The winter recreation area is defined as from the snowline on the North Steens Loop Road to the Kiger Gorge Overlook.
  9. A winter recreation registration box will be installed along the North Steens Loop Road upon closure of the road for the winter season to estimate use of walk up visitors and those who do not wish to get a winter use permit. This data will be used in conjunction with ranger field observations to evaluate degree of wilderness crowding and opportunities for solitude. This box will be retrieved when the Page Springs gate is opened.
  10. The Unauthorized Motor Vehicle Intrusions Monitoring Form (OR020-8560-07) will be completed by BLM personnel after any observation of unauthorized motor vehicle and mechanized transport use and intrusion into Steens Mountain Wilderness and WSRs from any road, or driven on any closed road within Steens Mountain Wilderness, unless authorized. Such monitoring will be year long, including winter months. The monitoring will include user activity and will also document any unauthorized vehicle intrusions into the wilderness, which are violations. The category of motor vehicle and mechanical transport will include, but not be limited to, OHVs, snowmobiles, and bicycles.

#### 5.2.4 Frequency

1. Campsite inventories will be completed twice during the season, using the Campsite Monitoring Form (OR020-8560-01).
2. Big Indian, Little Blitzen, Pike Creek, Donner und Blitzen River, Wildhorse Canyons, Cold Springs, Little Indian, Little Wildhorse, and Kiger Canyons and Mud and Ankle Creeks will be monitored twice – once in early summer and once in early fall. Other locations may be added if deemed necessary.
3. Recreational stock use and effects will be monitored twice a year with the regular campsite inventory.
4. The Occupied Campsite Form (OR020-8560-03) will be filled out whenever anyone camping in the wilderness is encountered, including the monitoring personnel.
5. The Encounters Form (OR020-8560-04) will be filled out for every day spent in the wilderness, regardless of whether someone is encountered or not.
6. Trail Register pages will be collected when a page becomes full, or nearly full. This is to prevent pages from being stolen or defaced. This includes the winter registration box.
7. Calibration of trail counters and the observation by rangers of visitor trailhead registration boxes will be done to achieve better wilderness use numbers. Trail counter calibration will be done once a month by either physically observing the number of people crossing over the counter or by BLM personnel walking over the counter a number of times and verifying the number of crosses with the counter. Registration boxes will be observed for a minimum of four hours a day twice a month to help determine visitor registration rates. In both cases, calibration will be done with the ranger out of view of the visitors.

8. The established GPS points on the trails will be monitored at the beginning and end of every summer season.
9. Winter recreation use will be monitored on the North Steens Loop Road to the Kiger Overlook, as snow conditions and personnel allow and preferably twice a month. The Nye Cabin Road and Dingle Creek Road will be monitored if use by snowmobiles has been observed.
10. Monitoring of unauthorized motorized vehicle and mechanical transport use intrusions into the wilderness will occur whenever such intrusions are observed. Also, a strategy will be developed for increased patrolling for intrusions if such levels increase to an unacceptable level.

### 5.2.5 Files

Completed forms, photographs, and maps will be kept in a file in the Burns DO. In addition, a wilderness database will be created for ease of organization and retrieval of monitoring information. Data collected will be summarized annually and compiled into a yearly monitoring report.

## 5.3 Steens Mountain Wilderness and WSRs Monitoring Indicators and Forms

### 5.3.1 Indicator 1: Campsite Condition

- Monitor using the Campsite Monitoring Form (OR020-8560-01).
- Monitored twice a year; once in early summer and again in early fall.
- Take photos of each campsite at the beginning of the summer season to measure off-season recovery rate and again in early fall to measure summer usage.
- Campsite condition is defined as a human or recreational stock-caused change in the site and is measured by comparison with an adjacent plot of land.
- Maintain a permanent file for each campsite in the Burns DO containing an updated Campsite Monitoring Form (OR020-8560-01), photos and a detailed map of the campsite.
- Attention should be paid to any changes in rating.
- Document ratings and map campsites on a large campsite inventory map. Symbols should go next to campsite number. Place a symbol next to the corresponding campsite number each year to easily indicate a change in status. Symbols are as follows:
  - Red circle: minimum impact
  - Blue triangle: moderate impact
  - Green square: heavy impact
  - Yellow star: extreme impact
  - Black rectangle: campsite has been naturalized and is being monitored

### 5.3.2 Indicator 2: Campsite Density

- Monitor density using the Campsite Monitoring Form (OR020-8560-01) as a guideline.
- Measured per each Management Area, the Gorges and the Uplands.
- A campsite is defined as an area of human flattened vegetation where it can be inferred that at least one person camped or spent a considerable amount of time.
- A campsite does not need to have a fire ring, structures, etc., in order to be labeled a campsite.
- All campsites found within the wilderness boundary will be inventoried, inspected, documented, labeled, and mapped on 7½ minute topographic maps.
- When a campsite has been rehabilitated by natural or human means and has been monitored for a period of three summer seasons without further use, it can be taken out of the system.
- If an area was rehabilitated, then camped in again, the campsite will be put back in the system.
- As new campsites are found, they will be inventoried, documented, and added to the campsite map.
- Once a year, preferably at the end of the summer season, the number of campsites per Management Area will be counted and analyzed by monitoring personnel. Special attention will be given to the number of new campsites located and any change in campsite rating.

### 5.3.3 Indicator 3: Perception of Solitude

1. Number of other parties camped within sight or continuous sound per canyon or Management Area (not including car camping on or near wilderness boundaries).

- Monitor using the Occupied Campsite Form (OR020-8560-03) and Trail Register (OR020-8560-05) pages.
- Campsites within sight or sound of each other are defined as two or more campsites situated 100 yards or less from each other.
- Monitor whenever an occupied campsite is seen, including that of monitoring personnel, within the wilderness boundary. This does not include car camping on wilderness boundaries or along roads bounded by wilderness.
- Document also if no campsites are seen within sight or sound of a particular camp.
- If the same group previously monitored is seen on a different day, document them again as a new entry.
- Record a given camp only once a day.
- Visitor comments (i.e. "I camped next to a party of 8 on Tuesday") can be used as reliable monitoring information if their entire trip can be documented. This includes dates, camp locations, and the number of occupied campsites within sight or sound every night of their trip.
- Rangers should not go out of their way to camp near someone.
- Completed forms will be filed and an analysis completed at the end of each summer season.

2. Number of wilderness encounters per day on or off trail, per canyon or Management Area.

- Monitor using the Encounter Form (OR020-8560-04).
- An encounter is defined as a situation within the wilderness boundary when two or more separate parties pass each other, talk to each other, or are close enough to hear each other. This includes all areas except campgrounds.
- Count people viewed from a distance as an encounter.
- Monitor number of encounters every day spent in the wilderness, along with specific location and party size. If no one is encountered on a given day, this too should be documented.
- Visitor comments (i.e. "There were six people at the headwall of the gorge yesterday") can be used as reliable monitoring information if their whole trip can be documented. This includes dates, camp locations and the number of encounters during their trip.
- Completed forms will be filed and analysis completed at the end of each summer season.

### 5.3.4 Indicator 4: Trail Conditions

- Monitor trail width, trail depth, and multiple trailing of established wilderness and campsite social trails using the Trail Monitoring Form (OR020-8560-02).
- Established wilderness trails include Little Blitzen, Big Indian, Donner und Blitzen River, Pike Creek, and Wildhorse Lake. The Mud/Ankle Creek trail will be monitored in the future if and when single track trail conditions exist.
- Monitor campsite social trails and map them on the Campsite Monitoring Form (OR020-8560-01).
- For established wilderness trails, use the established GPS points along each trail to be monitored and continue to use these same points every year.
- Monitor condition of established trails twice a year, once at the beginning of the summer season and once at the end.
- Monitor any newly discovered or created established trails similarly.

### 5.3.5 Indicator 5: Length-of-Stay

- Assess length-of-stay primarily by retrieval of visitor Trail Register pages, as well as information gathered from wilderness ranger visitor contacts.
- Place visitor registration books at the following trailheads: Big Indian, Little Blitzen, Donner und Blitzen River, Pike Creek, the South Steens equestrian campground, Mud/Ankle Creek, and Wildhorse Lake.

- Post a sign at each trailhead that explains why it is important to sign in.
- Analyze information annually.

### 5.3.6 Indicator 6: Recreational Stock Use

- Monitor recreational stock use in the recreational stock section of the Campsite Monitoring Form (OR020-8560-01).
- Recreational stock effects that will be assessed include tree root exposure due to stock, tree girdling, and evidence of stock by the presence of feed and manure.
- Analyze the relationship between frequent recreational stock use and campsite impact ratings annually.
- Evidence of cows, specifically manure, is not to be used as evidence of recreational stock within the campsite.

### 5.3.7 Indicator 7: Unauthorized Motor Vehicle and Mechanical Transport Intrusions

- Monitor unauthorized motorized vehicle and mechanical transport intrusions into the wilderness on the Unauthorized Motor Vehicle Intrusions Monitoring Form (OR020-8560-07).
- Intrusions into the wilderness which have not been authorized, including closed roads, by any type of motor vehicle and mechanical transport including, but not limited to, OHVs, snowmobiles, and bicycles, will be assessed.
- Monitoring will occur year round, including winter months, and will be increased in areas where unauthorized intrusions are observed.
- Analyze the need to restrict or discontinue motorized vehicle and mechanical transport use in certain areas based on the number of unauthorized motor vehicle and mechanical transport intrusions into the wilderness over the established time period.

**Steens Mountain Wilderness  
Campsite Monitoring Form**

**LOCATION**

1. Campsite #                      2. Survey Time and Date:                      3. Former Names
4. Township                      Range:                      Section:                      ¼ Section                      ¼ ¼ Section
5. GPS Coordinates:                      5a. Elevation
6. Closest Trailhead

---

**DESCRIPTION**

7. General Description
8. Tent Sites (# of tent sites and location within the campsite):
9. Other Notes (Cultural Resources, Prominent Natural Features, Interesting Hikes):

---

**WATER**

10. Type and location of freshwater source:
11. Distance from campsite to water:

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**MONITORING**

12. Recent Ranger Updates
- Dates:                      Ranger:                      Length of Site Check:

- 
13. Can sounds/noises be heard from adjacent campsites?
14. Number of campsites within 100 yards:
15. Distance from campsite to trail:
16. Firewood availability:
17. Distance to nearest campsite (over 100 yards not to be monitored):
18. Outfitter/Guide use:
- 19: Visitor record (visitors seen, contacted, and inferred):
20. Wildlife Observations:
21. Photo Point:

**Steens Mountain Wilderness  
Campsite Monitoring Form**

**22. MAP OF CAMPSITE (Draw a detailed map that includes measurements, compass directions, social trails, geologic and natural features, tent site locations, and mineral soil exposure.)**

**Steens Mountain Wilderness  
Campsite Monitoring Form (continued)**

	Inside Campsite					Outside Campsite				
<b>23. Vegetation Cover</b>	0-5%	6-25%	26-50%	51-75%	76-100%	0-5%	6-25%	26-50%	51-75%	76-100%
<b>24. Mineral Soil Exposure</b>	0-5%	6-25%	26-50%	51-75%	76-100%	0-5%	6-25%	26-50%	51-75%	76-100%

<i>Human-caused ratings</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>Impact Index</i>
<b>25. Vegetation Loss</b>	No difference in cover	Difference of one coverage class	Difference of two or more coverage classes	x 2 =
<b>26. Mineral Soil Increase</b>	No difference in cover	Difference of one coverage class	Difference of two or more coverage classes	x 3 =
<b>27. Human Caused Tree Damage</b> # of trees scarred = # of trees felled =	0-25% of all trees in campsite scarred or felled or have broken lower branches	26-50% of all trees in campsite scarred or felled or have broken lower branches	More than 50% of all trees in campsite scarred or felled or have broken lower branches	x 3 =
<b>28. Development</b>	None	1-2 rock or log structures	More than 2 structures	x 1 =
<b>29. Cleanliness</b> # of fire rings = Litter?	No more than evidence of fire. No fire ring or litter.	One fire ring, some litter, one burnt log or up to 50% of rocks in campsite scarred	More than one fire ring, or a large amount of litter, or any sign of human waste, or greater than 50% of rocks in campsite scarred, or more than one burnt log	x 1 =
<b>30. Social Trails</b> # of trails =	No more than one discernable trail	Up to 3 discernable trails	More than 3 discernable trails	x 2 =
<b>31. Camp Area = square feet</b>	0-500 sq. feet	501-1500 sq. feet	More than 1500 sq. feet	x 3 =

<i>Recreational Stock Ratings</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>Impact Index</i>
<b>32. Root Exposure</b>	0-25%	26-50%	More than 50%	x 3 =
<b>33. Tree Girdling</b>	0-1 tree girdled	2 to 3 trees girdled	More than 3 trees girdled	x 3 =
<b>34. Evidence of Recreational Stock</b>	None	Manure or feed only	Manure, feed and/or tree damage present.	x 3 =

**35.** Minimum Impact 20 - 29 Moderate Impact 30 - 39 Heavy Impact 40 - 49 Extreme Impact 50+  
Total Impact Index Total =  
( include recreational stock totals )

**36.** Minimum Impact 9 - 12 Moderate Impact 13 - 15 Heavy Impact 16 - 19 Extreme Impact 20+  
Total Impact Recreational Stock Total =

## Steens Mountain Wilderness Campsite Monitoring Form Instructions

A permanent file located in the wilderness office will be maintained that will contain Campsite Monitoring Forms, photos, and a map of the campsite. In addition, there should be a separate file for each area (see below #1) including a 7½ minute map with all area campsites marked by GPS points. Campsites will be monitored twice a year, once at the beginning and once at the end of the summer season.

- 1) Campsite #: Record current campsite number. This is a three or four digit identifier unique to each campsite. The first two digits refer to a particular area or drainage and are as follows:

Wildhorse Lake: WH  
Cold Springs Canyon: CS  
Mud Creek: MC  
Ankle Creek: AC  
Big Indian: BI  
Little Blitzen: LB  
Donner und Blitzen River East: BRE  
Donner und Blitzen River West: BRW  
Pike Creek: PC

The third and fourth numbers will be numbers that reflect the order in which the campsite was discovered. Other areas will be added as needed.

- 2) Survey date: Enter the exact time and date the campsite was monitored. Record as DAY-MONTH-YEAR-TIME. Both are crucial in organizing field photos with a digital camera.
- 3) Former names: For comparison with past inventories, record any nicknames or former names. For newly discovered campsites, a name may be assigned if desired.
- 4) Township, range, section and quarter section: Fill in the correct grid information.
- 5) GPS coordinates: Enter coordinates. Take reading in the same place as the campsite photo.
- 6) Closest trailhead: Record the closest trailhead. Established trailheads include Big Indian, Wildhorse Lake, Little Blitzen, Donner und Blitzen River, Mud/Ankle Creek, Pike Creek.
- 7) General description: Give a description of the campsite including size, impact, vegetation type, and anything else you can think of.
- 8) Tent Sites: Enter the number of tent sites, condition of sites, and general location of each site.
- 9) Other notes: Include information on cultural resources, natural features, nearby hikes, etc.
- 10) Freshwater sources: Record name of river, creek or drainage. Document up to two sources.
- 11) Distance from campsite to water: This is the distance in feet the campsite is from a perennial or annual river, spring, creek or lake. Measure the distance from the middle of the campsite.
- 12) Recent ranger updates: Include the date, your first and last name, and the length of time you spent monitoring the campsite.
- 13) Sounds from adjacent campsites: Include any human or recreational stock noises heard from any other nearby campsite. Record on the Occupied Campsite Form (OR020-8560-03).
- 14) Number of campsites within 100 yards: Record number and name of any campsite, regardless if the other campsite is occupied by a camping party or not. Record on the Occupied Campsite Form (OR020-8560-03).

- 15) Distance from campsite to an established trail system: Measure the distance in feet from the nearest trail to the campsite. If the nearest trail is miles away, round to the nearest tenth of a mile. Differentiate between an established trail and a social trail and measure from the middle of the campsite. Current established trail systems include Donner und Blitzen River, Wildhorse Lake, Big Indian, Mud/Ankle Creek, Little Blitzen, and Pike Creek.
- 16) Firewood availability: Walk around the campsite and note the different types of possible firewood on the ground. Record the nearest distance in feet from the center of the campsite to the closest available wood. This should be enough to make a small fire for one night, approximately 2 cubic feet of varying sizes of wood, including kindling. Do not count already collected firewood. Also make note of the type of firewood available in the area.
- 17) Distance to nearest campsite: This is meant to be a check for future seasons. Only monitor the distance up to 100 yards. Leave the section blank when distances are greater than this.
- 18) Outfitter/Guide use: Record encounters with guides as well as groups that are known to use the campsite.
- 19) Visitor record: Document number of visitors seen, contacted, and/or inferred at the campsite. Be sure to also document on the Occupied Campsite (OR020-8560-03) and Encounters Forms (OR020-8560-04).
- 20) Wildlife observations: Includes any wildlife sightings, big or small, furry or feathered observed at the campsite. Also include any intriguing tracks.
- 21) Photo point: Take photos at the same location where the GPS reading was taken, preferably the center of the campsite. Take four photos at each campsite which point towards the four cardinal directions; north, east, south and west.
- 22) Campsite Map: Draw a detailed map of the campsite. Include measurements, compass directions, social trails, geologic features, locations of tent sites, and any mineral soil exposure. Keep a permanent map of each campsite in each campsite file. Make a copy of the map and mark in pencil any changes to the campsite. The map drawing may be done only once per season.
- 23) Vegetative cover (Inside campsite): Study the ground on the inside of the campsite thoroughly. Speculate, on average, what percentage of the ground is covered by vegetation. Do not count trails going through camp. Do count satellite areas outside the campsite into the equation such as recreational stock areas, tent pads, kitchen areas, etc. Circle 0-5%, 6-25%, 26-50%, 51-75%, or 76-100%.  
  
Vegetative cover (Outside campsite): Study the ground at least 20 feet outside of the campsite thoroughly. Speculate, on average, what percentage of the ground is covered by vegetation. Circle 0-5%, 6-25%, 26-50%, 51-75%, or 76-100%.
- 24) Mineral soil exposure (Inside campsite): Study the ground on the inside of the campsite thoroughly. Speculate, on average, what percentage of the ground has mineral soil exposed. Mineral soil is defined as bare soil with no vegetation growing anywhere. If there are sprouts of any kind growing, then it does not count as mineral soil. Do not count trails going through camp. Do count satellite areas outside the campsite into the equation such as recreational stock areas, tent pads, kitchen areas, etc. Circle the correct percent of mineral soil that is exposed; 0-5%, 6-25%, 26-50%, 51-75%, or 76-100%.  
  
Mineral soil exposure (Outside campsite): Thoroughly study the ground at least 20 feet outside of the campsite. Speculate, on average, what percentage of the ground has mineral soil exposed. Circle the correct percent of mineral soil exposed. Circle 0-5%, 6-25%, 26-50%, 51-75%, or 76-100%.
- 25) Root Exposure: Calculate the percentage of trees with roots exposed from human use. Do not count trees that have naturally exposed roots. Count trees with damaged roots before scarred trees. Do not count a tree for both root exposure and scarring. Find impact index.
- 26) Tree Girdling: Defined tree damage encircling the tree. Count tree girdling before scarring and root exposure. Do not count any girdled tree for root exposure and scarring. Find impact index.
- 27) Evidence of recreational stock: Be sure that the evidence points to horse, mule, llama or other pack animal dung, not a wild animal or cattle. Find impact index.

- 28) Vegetation loss: Take note of the difference in coverage classes from number 23, vegetation cover. Circle the appropriate box. Under the Impact index, multiply the rating number above the box you circled by the number already in the Impact index box. For example, if you recorded campsite vegetative cover was 50% inside the campsite and 75% outside the campsite, this would be a difference of one coverage class with a rating of 2. You would then multiply the 2 by 2, for a total of 4.
- 29) Mineral soil increase: Take note of the difference in coverage classes from number 24, mineral soil exposure. Circle the appropriate box. Under the impact index, multiply the rating number above the box you circled by the number already in the impact index box. For example, if you recorded the average percentage of mineral exposed was 25% inside the campsite and 5% outside the campsite, this would be a difference of one coverage class with a rating of 2. You would then multiply the 2 by 3, for a total of 6.
- 30) Tree damage: Record the number of trees scarred inside as well as immediately outside the campsite. Scarred trees include anything nailed or inserted in a tree, or anything carved into a tree. One nail found in a tree counts as scarring. Girdling does not count, as there is a separate section for recreational stock use. Record number of felled trees within and immediately outside of the campsite. Calculate the percentage of scarred and/or felled trees and circle the appropriate percentage. Multiply the rating by 3 to get the impact index.
- 31) Development: This counts as any human made structure and includes, but is not limited to rock chairs, altars, backrests, log benches, meat hangers, seats or tables. Circle the category and calculate the impact index.
- 32) Cleanliness: Count the number of fire rings and document whether or not litter is present. Count all fire rings and sites of repeated fires, with or without rock rings. Faint scars or sites of one time use should not be counted. If there is more than one fire ring, a large amount of litter, more than one burnt log or any evidence of human waste, rating 3 should be circled and the impact index would be a 3.
- 33) Social Trails: Any trail, besides the main trail that leads to the campsite. These are side trails which provide access to water, other campsites, viewpoints, firewood, bathroom places, etc. Find impact index. Draw all social trails on the map drawn of each campsite.
- 34) Camp area: This is the total camp area in square feet measured by using a tape measure. Measure satellite areas (stock areas, tent pads, etc.) outside the campsite and add them to the total campsite size. Calculate the impact index.
- 35) Add up all of the impact indexes to find the total index. Designate impact by circling either minimum, moderate, heavy or extreme impact.
- 36) Add up the three recreational stock indexes to find the total recreational stock impact index. Designate impact by circling either minimum, moderate, heavy or extreme recreational stock impact.



## **Steens Mountain Wilderness Trail Monitoring Form Instructions**

### **A. Trail width:**

- 1 = Slight. Trail widening is greater than 24 inches, but is occurring in dry and sandy or upland soils with little impact to vegetation and little soil compaction. Trail is likely to become wider.
- 2 = Moderate. Trail widening is occurring 24 to 36 inches, and is occurring in an area of sensitive riparian vegetation, causing moderate damage to riparian vegetation and sod, some moderate soil erosion is occurring along dry areas where soil productivity is affected. Potential for increased damage likely.
- 3 = Severe. Trail widening is greater than 36 inches within a wet riparian/meadow area or adjacent stream crossing causing significant damage to sod and active erosion is occurring. Condition is in an active state and has a potential to become worse.

### **B. Trail depth:**

- 1 = Slight. Slightly depressed trail is evident. Slight root exposure is noticeable.
- 2 = Moderate. Tread depth shows active erosion and the trail is incising. Tread is less than 12 inches below ground surface. Evidence of scour and sediment is leaving the trail and a moderate amount may be entering stream channels where trail is adjacent to streams. Beginning stages of gullying is starting to form.
- 3 = Severe. Trail is actively eroding, gullies are present. Tread is greater than 12 inches below ground surface. Evidence of sediment transport into stream channels at crossings is apparent. Trail is in an eroded state and difficult to tread.

### **C. Multiple trailing:**

- 0 = None
- 1 = Slight. Multiple trailing is occurring, though not in an advanced condition.
- 2 = Moderate. Two to three trails have formed, some moderate damage has occurred to sod and riparian vegetation, some erosion within the trail troughs. Condition is worsening.
- 3 = Severe. Two to three trails have formed, have deeply incised troughs, loss of sod and damage to riparian vegetation is occurring.







# Steens Mountain Wilderness Winter Recreation Monitoring Form

Name(s): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Area(s) Visited: \_\_\_\_\_  
What Road, Mile Mark, Elevation or Landmark

Road Conditions: \_\_\_\_\_

Snow Conditions/Elevations: \_\_\_\_\_

Your Activity: \_\_\_\_\_  
Snowmobiling, Skiing, Snowshoeing, Driving

Number & Type of Vehicles Encountered: \_\_\_\_\_

User Activity & Numbers - Snowmobiling: \_\_\_\_\_ Skiing: \_\_\_\_\_ Snowshoeing: \_\_\_\_\_

Describe User Activity: \_\_\_\_\_  
# people encountered, track type(s), location, etc.

Wildlife Observed: \_\_\_\_\_  
Type(s), Numbers, Tracks, Location

Wilderness/WSA Violations: \_\_\_\_\_

Other Comments: \_\_\_\_\_

Landmark Notes:    1<sup>st</sup> Cattle Guard .2 mi            2<sup>nd</sup> Cattle Guard: 1.6 mi            3<sup>rd</sup> Cattle Guard (Lake Creek Turnoff): 6.7 mi  
                          4<sup>th</sup> Cattle Guard: 9.5 mi            5<sup>th</sup> Cattle Guard: 12.3 mi            6<sup>th</sup> Cattle Guard (Fish Lake): 13.7 mi

Elevations:            Page Springs Gate: 4200'            Juniper Line: 5400'            Fish Lake: 7400'            Kiger Gorge Overlook Turnoff: 8800'

\*\*Attach photos, if any to this form

**Steens Mountain Wilderness  
Unauthorized Motor Vehicle Intrusions  
Monitoring Form**

**Name(s) of Observer(s):** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_

**Area(s) Location(s):** \_\_\_\_\_

**Road Name(s):** \_\_\_\_\_

**GPS or Map Legal Description(s):** \_\_\_\_\_

**Number of Unauthorized Vehicles /Tracks Encountered:** \_\_\_\_\_

**Vehicle Description(s)/License Number(s):** \_\_\_\_\_

**Describe User Activity:** \_\_\_\_\_

**Wilderness Violation(s):** \_\_\_\_\_

**Other Comments:** \_\_\_\_\_

**\*\*\*Attach photos to this form**

## 5.4 Ecosystem Monitoring

### 5.4.1 Air Quality

The Fuel Analysis, Smoke Tracking, and Report Access Computer System, an emissions information system, is used in Oregon to quantify prescribed fire emissions and to track changes in emissions and emission production in the state. An air monitoring network has been developed for Oregon that is used to determine whether the national ambient air quality standards are met. However, no monitors are located within the AMU, including Steens Mountain Wilderness or WSRs.

### 5.4.2 Water Resources

**Water Quality:** Water temperatures along perennial streams in Steens Mountain Wilderness and WSRs will be periodically measured with continuous recording devices to monitor long-term maintenance or restoration of water quality. Riparian vegetation, as discussed under the vegetation section, will be monitored as a surrogate measure of water quality and serve as short-term and intermediate monitoring of maintenance and restoration. Monitoring of project specific management or restoration activities will be developed and implemented through the respective activity planning process.

**Water Quantity:** Water developments in Steens Mountain Wilderness will be inventoried, mapped, photographed, and evaluated for beneficial use, and maintenance or reclamation/restoration needs.

### 5.4.3 Soils and Biological Soil Crusts

The monitoring studies within the CMPA including Steens Mountain Wilderness and WSRs would be similar to the Pueblo-Lone Mountain Allotment studies and will be established and read by either the range conservationist for the allotment and a Burns District biologist or may have an entire BLM Interdisciplinary Team (ID Team) present. Provisions for these monitoring efforts are included in the soils and biological soil crust sections of the Proposed RMP. The Proposed RMP provides for monitoring of the indicators of rangeland health, including biological soil crusts. The BLM will use the data resulting from this monitoring to inform decisions regarding management of grazing and other resource uses (USDI 2001a).

### 5.4.4 Vegetation

**No Livestock Grazing Area:** Photo points will be taken at key locations approximately every five years to evaluate the trend of each site (see RMP Monitoring Plan in Appendix Q of the Proposed RMP for more details).

**Special Status Species:** For a list of Special Status Plant Species see Attachment 2.

**BLM Sensitive Species:** Establish and read transects in the habitats to determine the trend of individual plants or populations. Read transects every one or two years, depending on the situation. The number of transects will vary with the number of species on the BLM Sensitive plant species list.

**BLM Assessment and Tracking Species:** Ocular reconnaissance monitoring of each species every five to ten years. Check to see if populations are still present, how many plants are there, and whether there are any visible threats to the plants or their habitat.

**Riparian:** Photo point monitoring will be used to monitor general condition and trend of riparian vegetation. Riparian vegetation community composition and relative abundance will be monitored at selected sites to evaluate maintenance or improvement at the reach or area scale using standard methodologies such as those described in Monitoring Vegetation Resources in Riparian Areas (Winward 2000). Additional monitoring, depending on site specific issues or concerns, may include qualitative or quantitative measures of bank stability/disturbance, channel cross section profiles, and riparian canopy cover/shade.

#### 5.4.5 Noxious Weeds

Noxious weed monitoring will consist of annual surveys of high probability areas for weed introduction, systematic inventories to identify new weed introductions, and other inventories to determine the density and distribution of existing weed populations.

#### 5.4.6 Fish

Fish habitat monitoring is primarily in the context of water quality and riparian vegetation condition, management, and monitoring. Additionally, the BLM independently or in coordination with the ODFW or USFWS periodically assesses fish and aquatic habitat using established inventory and monitoring protocols. Management and monitoring of fish population and distribution is under the jurisdiction of the ODFW or USFWS; the BLM will coordinate and cooperate with these agencies relative to fisheries management and monitoring in wilderness and WSRs.

#### 5.4.7 Wildlife

Monitoring of wildlife habitat will occur as described in the monitoring section for Riparian and Rangelands in the Proposed RMP Monitoring Plan Appendix Q. Other methods will include shrub utilization transects to determine the amount of livestock use on shrubs used mainly by big game species. Monitoring will also include ODFW survey data on the locations and numbers for various wildlife species, allowing for evaluation of the adequacy of wildlife forage allocations.

#### 5.4.8 Paleontological Resources

Monitoring will entail measurement, description, and photo documentation of disturbed areas within localities and recording evidence of illegal collection and excavation. These data will serve as baseline information to compare to subsequent monitoring visits. All localities within Steens Mountain Wilderness will be monitored once every five years.

#### 5.4.9 Cultural Resources

**Riddle Brothers Ranch National Historic District:** The Benjamin Riddle House and associated structures will be visited annually to assess maintenance needs. The caretaker will report any historic structure/feature maintenance needs to the Burns DO cultural resources staff. The caretaker will monitor visitor use and act as a deterrent to illegal theft of historic and prehistoric artifacts.

**Other Cultural Resources:** National Register Eligible sites most susceptible to effects from recreation and livestock grazing will be monitored once every five years. Sites susceptible to illegal looting or excavation will be monitored every year. Other National Register Eligible sites will be monitored once every ten years.

Monitoring will entail measurement, description, and photo documentation of disturbed areas within sites and recording evidence of looting and illegal excavation. These data will serve as baseline information to compare to subsequent monitoring visits.

#### 5.4.10 Native American Traditional Practices

A monitoring plan of identified traditional practice sites will be developed in order to determine condition, adverse effects, deterioration, and use of such sites. Procedures will be developed to track consultation and to document all written, telephone, electronic, and in-person communications, with yearly review for adequacy.

#### 5.4.11 Visual Resources

The visual contrast rating system described in BLM Manual Handbook H-8431-1 will be used when assessing proposals for projects in wilderness and WSRs. No other monitoring is planned.

#### 5.4.12 Energy and Minerals

No mineral or energy proposals will be authorized in Steens Mountain Wilderness and WSRs; therefore, no monitoring will be required or necessary.

### **5.4.13 Wild Horses**

Wild horses and their habitat will be monitored to determine the need for and timing of gathers, which animals to remove, and whether to maintain or adjust AMLs. Habitat monitoring will include collecting climatic data, conducting vegetation utilization studies, recording actual use by horses and livestock, and determining vegetation condition, trend, and areas of use by livestock and horses. Animal monitoring will include periodic horse counts, determination of horse locations and seasonal movements/use areas, annual reproduction rates, herd age structure, sex ratios, physical traits (size, color, weight, unique markings), and establishment and reassessment of herd baseline genomes.

### **5.4.14 Areas of Critical Environmental Concern**

Visual monitoring of key elements for each natural area (six areas). This is to determine if outside elements are affecting the key elements of the natural area (i.e. recreation, grazing, etc.) Photo points will be established in key areas if necessary.

## **5.5 Permitted Uses**

### **5.5.1 Roads**

Monitoring will occur on Service/Permit Use Routes to assure they do not become more developed than they were at the time of designation. They will also be signed indicating that the routes are closed to public motorized access and open only to livestock operators and private landowners under special authorization or for administrative use by the BLM. Wilderness satisfaction information will be gathered to help determine effects to visitors from motorized activity. Other closed routes (those closed to all motorized and mechanized activity) will also be signed and monitored to make sure they are not used by motorized vehicles or mechanical transport. Where needed, physical barriers will be used to close routes, and monitored for effectiveness. Open roads will be monitored for maintenance needs. Service/Permit Routes may also be repaired as needed to provide reasonable motorized use. Photographs documenting route conditions at multiple locations will be used to determine whether motorized routes within Steens Mountain Wilderness and WSRs are staying at a desired condition. Stream crossings will be monitored for effects to riparian vegetation, wildlife mortality along routes will be documented, and noxious weed sightings will be reported and treated.

### **5.5.2 Grazing**

Monitoring of livestock grazing in Steens Mountain Wilderness includes recording actual use, measurements of forage utilization, climate, and trend. These monitoring data are utilized to determine the attainment of the five standards of rangeland health. Trend in rangeland condition is monitored to provide data for periodic evaluation to determine effectiveness of current grazing management practices in attaining resource objectives.

### **5.5.3 Private Land Inholdings**

No monitoring of private land will occur other than the monitoring of access routes into such inholdings across BLM administered lands.

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## 6 REFERENCES

- Bailey, R.M. and C.E. Bond. 1963. *Four Species of Freshwater Sculpins, Genus Cottus, From Western North America*. Occasional Paper of the Museum of Zoology, University of Michigan. 634:1-27.
- Behnke, R.J. 1992. *Native Trout of Western North America*. American Fisheries Society Symposium 17. Bethesda, Maryland.
- Belnap. 2003. <http://www.soilcrust.org/> and <http://www.soilcrust.org/crust101.htm>. USGS Canyonlands Field Station, Southwest Biological Science Center, 2290 SW Resource Blvd., Moab, UT 84532 (435)719-2331.
- Bond, C.E. 1974. Fishes. *Endangered Plants and Animals of Oregon*: 1. Special Report No. 205. Oregon State University Agricultural Experiment Station. Corvallis, Oregon.
- Evans, R. D. And J. R. Johansen. 1999. *Microbiotic Crusts and Ecosystem Processes*. Critical Reviews in Plant Science. 18(2):183-225.
- Federal Register. 2000. *Endangered and Threatened Wildlife and Plants; 12-Month Finding for a Petition to List the Great Basin Redband Trout as Threatened or Endangered*. Volume 65, Number 54. March 20, 2000.
- Gamperl, K.C. and K. Rodnick. 2003. *Metabolic and Thermal Physiology of Eastern Oregon Redband Trout: Recommendations for Appropriate Numeric Temperature Criteria*. Final Report for Oregon Department of Environmental Quality.
- Hall, F.C. 2001. *Ground-based Photographic Monitoring*. General Technical Report. PNW-GTR503. Portland, OR; U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 340p.
- Hilty, J.H., J.D.Eldridge, R. Rosentreter, M.C. Wicklow-Howard, and M. Pellant. 2004. *Recovery of Biological Soil Crusts Following Wildfire in Idaho, USA*. Journal of Range Management 57:89-96.
- Johnson, D., D. Richard Lycan, J. Sweet, M. Heuhaus, and A. Schaedel. 1985. *Atlas of Oregon Lakes*. Oregon State University Press, Corvallis, Oregon.
- Kunkel, C.M. 1976. *Biology and Production of the Redband Trout in Four Southeastern Oregon Streams*. Master's Thesis, Oregon State University, Corvallis, Oregon.
- Li, H.W., G.A. Lamberti, T. Pearsons, C.Tait, J. Li, and J. Buckhouse. 1994. *Cumulative Effects of Riparian Distribution along High Desert Trout Streams of the John Day Basin, Oregon*. Transactions of the American Fisheries Society.
- Markle, D.F. and D.L. Hill, Jr. 2000. *Taxonomy and Distribution of the Malheur Mottled Sculpin, Cottus benderei*. Northwest Science 74(3):202-211.
- Oregon Administrative Rule. No date. Chapter 340, Division 041. *Water Quality Standards: Beneficial Uses, Policies, and Criteria for Oregon*. Department of Environmental Quality. Salem, Oregon.
- Ponzetti, J.M. and B.P. McCune. 2001. *Biotic Soil Crusts of Oregon's Shrub Steppe: Community Composition in Relation to Soil Chemistry, Climate, and Livestock Activity*. The Bryologist 104(2):212-225.
- Scott, W.B. and E.J. Crossman. 1973. *Freshwater Fishes of Canada*. Bulletin 184, Fisheries Research Board of Canada. Ottawa, Canada.
- Tait, C.K., J. Li, G. Lamberti, T. Pearsons, and H. Li. 1994. *Relationships between Riparian Cover and the Community Structure of High Desert Streams*. Journal of the North American Benthological Society. 13: 45-56.
- Thurrow, R. 1988. *Wood River Fisheries Investigations*. Job Performance Report. Project F-73-R-10. Idaho Department of Fish and Game. Boise, Idaho.

- United States Department of the Interior. 1995a. USFWS. *Biological Opinions - Section 7 Consultation for the 1995-1996 Grazing Authorization on the Alvord and Mann Lake Allotments and Lahontan Cutthroat Trout*. U.S. Fish and Wildlife Service.
- \_\_\_\_\_. 1997. BLM. *Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands in Oregon and Washington*. August 1997.
- \_\_\_\_\_. 1998. BLM. *Proper Functioning Conditions Assessments*.
- \_\_\_\_\_. 1999. USFWS. *Biological Opinions - Section 7 Consultation for the 1999-2004 Grazing Activities on the Pueblo Mountain Allotment*. United States Fish and Wildlife Service.
- \_\_\_\_\_. 2001a. Office of Hearings and Appeals. *Settlement Agreement*. ONDA v. BLM OR-020-97-01 and OR-020-96-01. November 2001.
- \_\_\_\_\_. 2001b. BLM-USGS. *Biological Soil Crust: Ecology and Management*. TR-1730-2.
- \_\_\_\_\_. 2001c. USFWS. *Biological Opinions - Section 7 Consultation for Ongoing Implementation of the Pueblo-Lone Mountain Allotment Management Plan*. United States Fish and Wildlife Service.
- \_\_\_\_\_. 2002. BLM. *Summary of the Analysis of the Management Situation*. April 2002. Hines, Oregon.
- \_\_\_\_\_. 2004. USFWS. *Biological Opinions - Section 7 Consultation for Grazing Authorization on the Alvord and Mann Lake Allotments and Lahontan Cutthroat Trout*. U.S. Fish and Wildlife Service.
- Williams, J.E., J.E. Johnson, D.A Hendrickson et al. 1989. *Fishes of North America Endangered, Threatened or of Special Concern*. American Fisheries Society. Bethesda, Maryland. 14(6): 2-20.
- Zoellick, B. 1995. *Summer Water Temperatures and the Distribution of Redband Trout in Four Streams in the Owyhee Mountains*. Unpublished information presented at Idaho Chapter Annual Meeting of American Fisheries Society. Boise, Idaho.

# Attachment 1

## Public Use Management

### **Steens Mountain Wilderness and WSRs Condition Standards**

Seven specific standards have been developed for use in evaluating the Management Areas with monitoring that is conducted to assess the baseline and ongoing wilderness condition. These include the following:

1. **Campsite Condition** - campsite changes.
2. **Campsite Density** - number of campsites in a given area.
3. **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.
4. **Trail Condition** - changes in trails, including width, depth, and number of social trails.
5. **Length-of-Stay** - trail register and Wilderness Ranger interviews on the length-of-stay.
6. **Recreational Stock Use** - root exposure, manure in campsites, and tree girdling.
7. **Unauthorized Motorized Vehicle and Mechanical Transport Intrusions** - unauthorized vehicles and mechanical transport on closed roads or off of roads into the wilderness.

### **Indicators**

Certain indicators will be monitored on a regular basis and the results of the monitoring will be used to adjust the management option levels needed to meet the guideline that has been set for each indicator. Two different Management Areas, the Gorges and the Uplands, were identified for Steens Mountain Wilderness, each with their own desired conditions. The same indicators are used, however the guidelines for the indicators are different for each of the Management Areas.

### **Management Option Levels**

This section describes the management options that are planned; to be used to help 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 informational 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).

### **Management Option Levels by Standard**

The monitoring data are applied to the guidelines shown in Tables 2 through 8 to determine whether each Management Area or individual canyon within the Gorges Management Area meets the guidelines. Each standard and its management options will be implemented, based on the degree to which the 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 campsite effects. Conditions range from “minimum”, showing the least effects, to “extreme”, showing the highest effects.

<b>Campsite Condition - Management Options</b>			
<b>Indicator</b>	<b>Level I Options</b>	<b>Level II Options</b>	<b>Level III Options</b>
Number of campsites within a Management Area or individual canyon that are within a Campsite Condition.	<ul style="list-style-type: none"> <li>- Voluntary dispersal of use through education efforts by agency personnel, volunteers, and publications.</li> <li>- Inform visitors of opportunities outside Steens Mountain Wilderness.</li> <li>- Emphasize Leave No Trace education efforts.</li> <li>- Increase wilderness information specialist (WIS) program and ghost rider program efforts.</li> </ul>	<ul style="list-style-type: none"> <li>- Discourage the inclusion of information in publications or guidebooks that directs visitors to high use areas.</li> <li>- Inform users about alternative areas.</li> <li>- Implement area-wide non-quota permit system to increase visitor education.</li> <li>- Limit improvements of trailhead access to areas where crowding is a concern.</li> <li>- Limit improvement of trail access in areas where crowding is a concern.</li> <li>- Restrict campfire use to previously used areas.</li> <li>- Limit camping to designated campsites in high use zones to minimize establishment of new campsites.</li> <li>- Close and rehabilitate selected campsites where campsite density is high.</li> <li>- Limit group sizes to reduce effects to campsites.</li> <li>- Implement regulations to restrict recreational stock from being tied to trees in campsites.</li> </ul>	<ul style="list-style-type: none"> <li>- Shorten length-of-stay period.</li> <li>- Implement permit quota system for specific areas that are exceeding guidelines.</li> <li>- Implement area-wide permit quota system at trailheads or at individual destinations.</li> <li>- Implement closure of specific areas to the use of campfires and remove fire rings.</li> </ul>

**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 repeated 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 will be determined for each lake basin.

<b>Campsite Density - Management Options</b>			
<b>Indicator</b>	<b>Level I Options</b>	<b>Level II Options</b>	<b>Level III Options</b>
Number of existing campsites within a ManagementArea or individual canyon.  or  Number of established campsites within a lake basin area.	<ul style="list-style-type: none"> <li>- Voluntary dispersal of use through education efforts by agency personnel, volunteers, and publications.</li> <li>- Inform visitors of opportunities outside Steens Mountain Wilderness.</li> <li>- Emphasize Leave No Trace education efforts.</li> <li>- Agency personnel educate users to utilize existing campsites in high use areas.</li> </ul>	<ul style="list-style-type: none"> <li>- Discourage the inclusion of information in publications or guidebooks that directs visitors to high use areas.</li> <li>- Inform users about alternative areas.</li> <li>- Implement area-wide non-quota permit system to increase visitor education.</li> <li>- Limit improvements of trailhead access to areas where crowding is a concern.</li> <li>- Limit improvement of trail access in areas where crowding is a concern.</li> <li>- In site specific areas, increase the distance from campsite to water resources.</li> <li>- Restrict campfire use to previously used areas.</li> <li>- Limit camping to designated campsites in high use zones to minimize establishment of new campsites.</li> <li>- Close and rehabilitate selected campsites where campsite density is high.</li> </ul>	<ul style="list-style-type: none"> <li>- Shorten length-of-stay period.</li> <li>- Implement permit quota system for specific areas that are exceeding guidelines.</li> <li>- Implement area-wide permit quota system at trailheads or at individual destinations.</li> </ul>

**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 Steens Mountain Wilderness and WSR 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 12 people) are monitored by the same methodology. Crowding perception is monitored through surveys of Steens Mountain Wilderness and WSR 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.

<b>Perception of Solitude - Management Options</b>			
<b>Indicator</b>	<b>Level I Options</b>	<b>Level II Options</b>	<b>Level III Options</b>
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.	<ul style="list-style-type: none"> <li>- Voluntary dispersal of use through education efforts by agency personnel, volunteers, and publications.</li> <li>- Inform visitors of opportunities outside Steens Mountain Wilderness.</li> <li>- Inform visitors of the type of experience (i.e. high encounter rate, numerous campsites, etc.) they are likely to have.</li> <li>- Inform visitors of areas or times best to visit that will reduce crowding.</li> </ul>	<ul style="list-style-type: none"> <li>- Discourage the inclusion of information in publications or guidebooks that directs visitors to areas.</li> <li>- Inform users about alternative areas.</li> <li>- Implement area-wide non-quota permit system to increase visitor education.</li> <li>- Limit group size in areas of concentrated use.</li> <li>- Limit improvements of trailhead access to areas where crowding is a concern.</li> <li>- Limit improvement of trail access in areas where crowding is a concern.</li> <li>- In specific areas, increase the distance that campsites must be away from water.</li> </ul>	<ul style="list-style-type: none"> <li>- Institute parking fees at high use trailheads.</li> <li>- Shorten length-of-stay period.</li> <li>- Implement backcountry use fees for high use areas.</li> <li>- Implement permit quota system for specific areas that are exceeding guidelines.</li> <li>- Implement area-wide permit quota system at trailheads or at individual destinations.</li> </ul>

**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.

<b>Trail Condition - Management Options</b>			
<b>Indicator</b>	<b>Level I Options</b>	<b>Level II Options</b>	<b>Level III Options</b>
Number of social trails within a Management Area or individual canyon.  or  Width and depth of system trails.	<ul style="list-style-type: none"> <li>- Voluntary dispersal of use through education efforts by agency personnel, volunteers, and publications.</li> <li>- Inform visitors of opportunities outside Steens Mountain Wilderness.</li> <li>- Emphasize Leave No Trace education efforts.</li> <li>- Agency personnel educate users to utilize existing campsites in high use areas.</li> </ul>	<ul style="list-style-type: none"> <li>- Discourage the inclusion of information in publications or guidebooks that directs visitors to high use areas.</li> <li>- Inform users about alternative areas.</li> <li>- Implement area-wide non-quota permit system to increase visitor education.</li> <li>- Limit improvements of trailhead access to areas where crowding is a concern.</li> <li>- Limit improvement of trail access in areas where crowding is a concern.</li> <li>- In site specific areas, increase the distance campsites must be away from water.</li> <li>- Limit camping to designated campsites in high use zones to minimize establishment of new campsites.</li> <li>- Close and rehabilitate selected trails where trail density is high.</li> </ul>	<ul style="list-style-type: none"> <li>- Shorten length-of-stay period.</li> <li>- Implement permit quota system for specific areas that are exceeding guidelines.</li> <li>- Implement area-wide permit quota system at trailheads or at individual destinations.</li> </ul>

**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 will be based on information collected by voluntary reporting at trailheads and interviews by the Wilderness Rangers.

<b>Length-of-Stay - Management Options</b>			
<b>Indicator</b>	<b>Level I Options</b>	<b>Level II Options</b>	<b>Level III Options</b>
Length-of-stay within a Management Area or individual canyon.	<ul style="list-style-type: none"> <li>- Voluntary reduction in the lengths-of-stay through education efforts by agency personnel, volunteers, and publications.</li> <li>- Inform visitors of opportunities outside Steens Mountain Wilderness.</li> <li>- Emphasize Leave No Trace education efforts.</li> <li>- Increase WIS program and ghost rider program efforts.</li> </ul>	<ul style="list-style-type: none"> <li>- Discourage the inclusion of information in publications or guidebooks that directs visitors to high use areas.</li> <li>- Inform users about alternative areas.</li> <li>- Implement area-wide non-quota permit system to increase visitor education.</li> <li>- Limit improvements of trailhead access to areas where length-of-stay is a concern.</li> <li>- Limit improvement of trail access in areas where length-of-stay is a concern.</li> <li>- Limit camping to designated campsites in high use zones, to minimize establishment of new campsites.</li> </ul>	<ul style="list-style-type: none"> <li>- Shorten length-of-stay period.</li> <li>- Implement permit quota system for specific areas that are exceeding guidelines.</li> <li>- Implement area-wide permit quota system at trailheads or at individual destinations.</li> <li>- Implement closure of specific areas to the use of campfires and remove fire rings.</li> </ul>

**Recreational Stock Use Standard**

The effects of recreational stock use on vegetation, meadows, and riparian areas are determined by monitoring the amount of manure in campsite areas, the condition of tree roots, and presence of tree girdling in campsite areas.

<b>Recreational Stock Use - Management Options</b>			
<b>Indicator</b>	<b>Level I Options</b>	<b>Level II Options</b>	<b>Level III Options</b>
Amount of recreational stock use within a Management Area or individual canyon.	<ul style="list-style-type: none"> <li>- Educate public on proper use of recreational stock in the backcountry.</li> <li>- Voluntary dispersal of use through educational efforts.</li> <li>- Inform visitors of opportunities outside these areas.</li> <li>- Emphasize Leave No Trace education efforts for all backcountry users, with emphasis for recreational stock users.</li> </ul>	<ul style="list-style-type: none"> <li>- Limit the number of recreational stock-per-party in areas that are exceeding guidelines.</li> <li>- Require certified weed free feed/hay be used for recreational stock in place of grazing.</li> <li>- Prohibit picketing in areas where guidelines are exceeded.</li> <li>- Implement and enforce special rules to prohibit tying recreational stock to trees.</li> <li>- Restrict grazing within areas that are exceeding guidelines to no more than one-third of the grazing season.</li> <li>- Establish an "on" date for recreational stock use or a season of use.</li> <li>- Develop a rotational system within a Management Area or individual canyon that would allow recreational stock grazing only within specified areas.</li> <li>- Limit length-of-stay by recreational stock within areas that are exceeding guidelines.</li> </ul>	<ul style="list-style-type: none"> <li>- Close specific areas that are exceeding guidelines to use by recreational stock.</li> <li>- Close Management Area or individual canyons to grazing by recreational stock.</li> </ul>

**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 Steens Mountain Wilderness off road or on any closed road or from the offset boundary of any road bounded on both sides by Steens Mountain Wilderness or any road which runs parallel to the Steens Mountain Wilderness. Unauthorized intrusions can include any type of motor vehicle and mechanical transport including, but not limited to, OHVs, snowmobiles, and bicycles. Unauthorized intrusions are determined from evidence of vehicle tracks in Steens Mountain Wilderness or from actual sightings of vehicles in Steens Mountain Wilderness.

<b>Unauthorized Motor Vehicle and Mechanical Transport Intrusions - Management Options</b>		
<b>Indicator</b>	<b>Level I Options</b>	<b>Level II Options</b>
Number of intrusions into Steens Mountain Wilderness by unauthorized motor vehicles and mechanical transport on closed roads or off of roads.	<ul style="list-style-type: none"> <li>- Disperse educational information regarding motor vehicle and mechanical transport regulations in Steens Mountain Wilderness with efforts by agency personnel, volunteers, and publications.</li> <li>- Increase signing of Steens Mountain Wilderness boundary and area closures.</li> <li>- Inform visitors of driving opportunities outside Steens Mountain Wilderness.</li> <li>- Emphasize Leave No Trace education efforts.</li> <li>- Agency personnel educate users and other agency personnel about regulations regarding motor vehicles and mechanical transport in Steens Mountain Wilderness.</li> <li>- Post regulations regarding motor vehicle and mechanical transport use restrictions in Steens Mountain Wilderness at campgrounds, trailheads, and other areas appropriate for public information.</li> <li>- Cite any known violators driving in Steens Mountain Wilderness.</li> </ul>	<ul style="list-style-type: none"> <li>- Restrict public use for certain recreational activities.</li> <li>- Develop controls at access points to exclude motor vehicles and mechanical transport from Steens Mountain Wilderness.</li> <li>- Increase law enforcement and other routine patrols.</li> </ul>

# Attachment 2

## Special Status Species

**Table A2-1 Special Status Fish Species Summary Table**

Common Name	Scientific Name	Status			Native
		BLM	State <sup>1</sup>	Federal <sup>2</sup>	
Lahontan cutthroat trout	<i>Oncorhynchus clarki henshawi</i>		T	T	X
Great Basin redband trout	<i>Oncorhynchus mykiss</i>	Tracking		S	X
Mountain whitefish	<i>Prosopium williamsoni</i>				X
Malheur mottled sculpin	<i>Cottus bairdi ssp.</i>	Sensitive			X
Catlow Valley tui chub	<i>Gila bicolor ssp.</i>	Tracking		S	X
Longnose dace	<i>Rhinichthys cataractae</i>				X
Speckled dace	<i>Rhinichthys osculus</i>				X
Redside shiner	<i>Richardsonium balteatus</i>				X
Largescale sucker	<i>Catostomus macrocheilus</i>				X
Bridgelip sucker	<i>Catostomus columbianus</i>				X

<sup>1</sup>State Status (ODFW): E-endangered; T-threatened

<sup>2</sup>Federal Status (USFWS): T-threatened; S-Species of special concern with conservation agreements.

**Table A2-2 Special Status Plants Species Summary Table**

Common Name	Scientific Name	BLM Status	ONHP Status
alpine fescue	<i>Festuca brachyphylla</i>	T	L3
alpine lily	<i>Lloydia serotina</i>	T	L3
Back's sedge	<i>Carex cordillerana</i>	A	L2
Bellard's kobresia	<i>Kobresia bellardii</i>	A	L2
capitate sedge	<i>Carex capitata</i>	T	L2
Cusick's hyssop	<i>Agastache cusickii</i>	A	L2
Cusicks's draba	<i>Draba cusickii</i>	T	L2
dark alpine sedge	<i>Carex subnigricans</i>	T	L2
Davidson's penstemon	<i>Penstemon davidsonii var. praeteritus</i>	T	L4
desert needlegrass	<i>Achnatherum speciosum</i>	A	L2
discooid goldenweed	<i>Ericameria discoidea var discoidea</i>	T	L4
Drummond willow	<i>Salix drummondiana</i>	T	L4
ephemeral monkey flower	<i>Mimulus evanescens</i>	S	L1
foetid sedge	<i>Carex vernacula</i>	A	L2
gray moonwort	<i>Botrychium minganense</i>	A	L2
hairstemmed rush	<i>Juncus capillaris</i>	T	L3
Hayden's cymopterus	<i>Cymopterus nivalis</i>	A	L2
Hayden's sedge	<i>Carex haydeniana</i>	T	L4
Kruckeberg's holly fern	<i>Polystichum kruckebergii</i>	T	L4
lance-leaved grapefern	<i>Botrychium lanceolatum ssp. lanceolatum</i>	A	L2

ANDREWS MANAGEMENT UNIT/STEENS MOUNTAIN COOPERATIVE MANAGEMENT AND PROTECTION AREA  
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Common Name	Scientific Name	BLM Status	ONHP Status
least rush	<i>Juncus hemiendytus var. abjectus</i>	T	L3
long-flowered snowberry	<i>Symphoricarpos longiflorus</i>	A	L2
moonwort	<i>Botrychium lunaria</i>	A	L2
moss gentian	<i>Gentiana prostrata</i>	A	L2
mosslike dwarf rush	<i>Juncus bryoides</i>	T	L3
narrowleaf cottonwood	<i>Populus angustifolia</i>	T	L4
new sedge	<i>Carex nova</i>	A	L2
nodding melic	<i>Melica stricta</i>	T	L4
pinnate grapefern	<i>Botrychium pinnatum</i>	A	L2
Rocky Mtn. Helianthella	<i>Helianthella uniflora var. uniflora</i>	T	L3
short-fruited willow	<i>Salix brachycarpa var brachycarpa</i>	T	L4
short-lobed penstemon	<i>Penstemon seorsus</i>	T	L3
Sierra willow	<i>Salix orestera</i>	T	L3
Sierran springbeauty	<i>Claytonia nevadensis</i>	T	L4
sky pilot	<i>Polemonium viscosum</i>	T	L4
slender gentian	<i>Gentianella tenella</i>	A	L2
Steens Mountain paint brush	<i>Castilleja pilosa var. steenensis</i>	S	L4
teacher's sedge	<i>Carex praeceptorum</i>	T	L3
weak-stemmed stonecrop	<i>Sedum debile</i>	T	L4
wedge-leaf saxifrage	<i>Saxifraga adscendens var. oregonensis</i>	A	L2
white-flowered penstemon	<i>Penstemon pratensis</i>	T	L3

*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.

Table A2-3 Special Status Wildlife Species Summary Table

Common Name	Scientific Name	Status			
		Fed	BLM	OR	ONHP
<b>Amphibian</b>					
Columbia spotted frog	<i>Rana luteiventris</i>	FC			L2
western toad #	<i>Bufo boreas</i>		BT		L3
<b>Bird</b>					
American white pelican	<i>Pelecanus erythrorhynchos</i>		BA		L2
bank swallow	<i>Riparia riparia</i>		BT		L4
black rosy finch	<i>Leucosticte atrata</i>		BT		L4
black tern	<i>Chlidonias niger</i>	SoC	BT		L4
black-throated sparrow	<i>Amphispiza bilineata</i>		BT		L2
bobolink	<i>Dolichonyx oryzivorus</i>		BT		L4
broad-tailed hummingbird	<i>Selasphorus platycercus</i>		BT		L4
Columbia sharp-tailed grouse #	<i>Tympanuchus phasianellus columbianus</i>	SoC	BS		L1
ferruginous hawk	<i>Buteo regalis</i>	SoC	BS		L2
flammulated owl	<i>Otus flammeolus</i>		BS		L4
Forster's tern	<i>Sterna forsteri</i>		BT		L3
Franklin's gull	<i>Larus pipixcan</i>		BA		L2
great egret	<i>Casmerodius albus</i>		BT		L3
Greater sage-grouse	<i>Centrocercus urophasianus</i>	SoC	BS		L2
greater sandhill crane	<i>Grus canadensis ssp.</i>		BT		L4
horned grebe	<i>Podiceps auritus</i>		BT		L4
least bittern	<i>Ixobrychus exilis</i>	SoC	BA		L2
loggerhead shrike	<i>Lanius ludovicianus</i>		BT		L4
mountain quail #	<i>Oreortyx pictus</i>	SoC	BT		L4
northern bald eagle	<i>Haliaeetus leucocephalus</i>	FT		ST	L1
northern goshawk	<i>Accipiter gentilis</i>	SoC	BS		L3
olive-sided flycatcher	<i>Contopus cooperi</i>		BT		L3
peregrine falcon	<i>Falco peregrinus ssp.</i>		BS	SE	L1
pinyon jay	<i>Gymnorhinus cyancephalus</i>		BT		L4
sage sparrow	<i>Amphispiza belli</i>		BS		L4
snowy egret	<i>Egretta thula</i>		BA		L4
Swainson's hawk	<i>Buteo swainsoni</i>		BT		L4
white-faced ibis	<i>Plegadis chihi</i>	SoC	BT		L4
willow flycatcher	<i>Empidonax traillii adastus</i>	SoC	BT		L4
yellow-billed cuckoo	<i>Coccyzus americanus</i>	FC	BS		L2

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

Common Name	Scientific Name	Status			
		Fed	BLM	OR	ONHP
<b>Fish</b>					
Catlow Valley tui chub	<i>Gila bicolor ssp.</i>	SoC	BT		L3
Great Basin redband trout	<i>Oncorhynchus mykiss ssp.</i>	SoC	BT		L3
Lahontan cutthroat trout	<i>Oncorhynchus clark henshawi</i>	FT		ST	L1
Malheur mottled sculpin	<i>Cottus bairdi ssp.</i>	SoC	BS		L3
<b>Mammal</b>					
California bighorn sheep	<i>Ovis canadensis ssp.</i>	SoC	BT		L4
California wolverine	<i>Gulo gulo</i>	SoC		ST	L2
Canada lynx*	<i>Lynx canadensis</i>	FT			L2
fringed myotis	<i>Myotis thysanodes</i>	SoC	BT		L3
gray wolf	<i>Canis lupus</i>	FE		SE	L2-ex
long-eared myotis	<i>Myotis evotis</i>	SoC	BT		L4
long-legged myotis	<i>Myotis volans</i>	SoC	BT		L3
pallid bat	<i>Antrozous pallidus</i>	SoC	BT		L3
Preble's shrew	<i>Sorex preblei</i>	SoC	BT		L3
silver-haired bat	<i>Lasionycteris noctivagans</i>	SoC	BT		L3
spotted bat	<i>Euderma maculatum</i>	SoC	BA		L2
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SoC	BS		L2
western small-footed myotis	<i>Myotis ciliolabrum</i>	SoC	BT		L3
white-tailed antelope ground squirrel	<i>Ammospermophilus leucurus</i>		BT		L3
white-tailed jackrabbit	<i>Lepus townsendii</i>		BT		L3
Yuma myotis	<i>Myotis yumanensis</i>	SoC	BT		L4
<b>Reptile</b>					
desert horned lizard	<i>Phrynosoma platyrhinos</i>		BT		L3
long-nosed leopard lizard	<i>Gambelia wislizenii</i>		BT		L4
Mojave black-collared lizard	<i>Crotophytus bicinctores</i>		BT		L3
northern sagebrush lizard	<i>Sceloporus graciosus</i>	SoC	BT		L4

Status:

FE=Federal Endangered: A species which is in danger of becoming extinct within the foreseeable future throughout all or a significant portion of its range.

FT=Federal Threatened: A species that is likely to become endangered within the foreseeable 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=BLM 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=BLM 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=BLM Tracking: Species that may become of concern in the future, but more information is needed to determine status for management purposes.

ONHP (Oregon Natural Heritage Program):

- 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.

Ex = Extirpated - no longer within the original range of the species in Oregon. Outside of the recovery zone for gray wolves.

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