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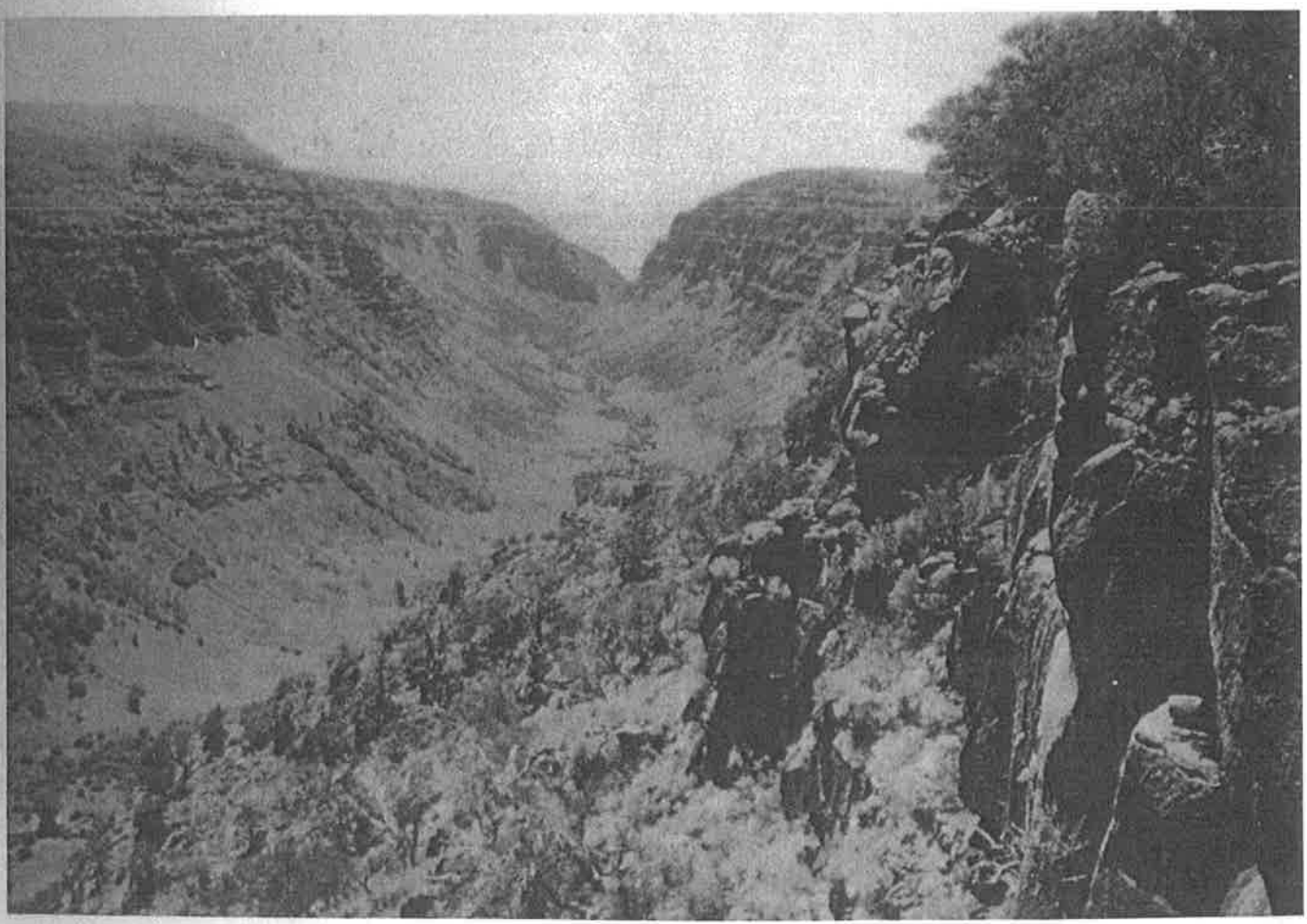
U.S. Department of the Interior
Bureau of Land Management

Burns District Office
HC 74, 12533 Hwy 20 West
Hines, Oregon 97738

June 1992

National Wild & Scenic River Donner und Blitzen
Management Plan Environmental Assessment



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

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT OFFICE
HC 74-12533 Hwy 20 West
Hines, Oregon 97738

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

8300(026)

June 5, 1992

Dear River User:

Enclosed, for your review and comment, is a copy of the proposed Donner und Blitzen National Wild and Scenic River Management Plan.

This is a combined management plan and environmental assessment (EA) for the Donner und Blitzen River.

The proposed management plan was completed after building a foundation by starting with the designation of interim boundaries in 1989, selecting a Citizen Advisory Group, developing a resource assessment, identifying issues, developing alternatives, and analyzing effects. This plan discusses management options along with a preferred alternative.

Please review and comment on the proposed management plan and the EA.

Your support and involvement in the Donner und Blitzen National Wild and Scenic River is appreciated.

If you have any questions during the review process, please feel free to write our office at the above address, or call me at (503) 573-5241.

Please return your comments no later than July 10, 1992. Comments will be analyzed and a final plan completed by August 15, 1992.

Thank you for your interest in your public lands.

Sincerely,

Glenn T. Patterson

Glenn T. Patterson
Andrews Resource Area Manager

Enclosure (as stated)

NATIONAL WILD & SCENIC RIVER

DONNER UND BLITZEN

MANAGEMENT PLAN
ENVIRONMENTAL ASSESSMENT
(EA-OR-020-2-72)

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT - OREGON

PREPARED BY
FRED Y. MCDONALD, RESOURCE SPECIALIST
LUCILLE M. ROBERTS, EDITORIAL ASSISTANT

Executive Summary
National Wild and Scenic River Plan

Donner und Blitzen

This river plan establishes a comprehensive set of actions to provide the Donner und Blitzen River with a level of resource protection, management, and public use consistent with the Wild and Scenic Rivers Act. The plan covers 74.8 miles of the Blitzen River and its tributaries.

The river plan develops management guidelines for public land within the designated corridor. It also focuses on recreational activities and facilities, and will address other resource values and activities within the corridor that may affect or be affected by the Wild and Scenic Rivers designation.

Issues were identified and developed through input from the public and working with a Citizen Advisory Group.

Four alternatives are presented in the plan:

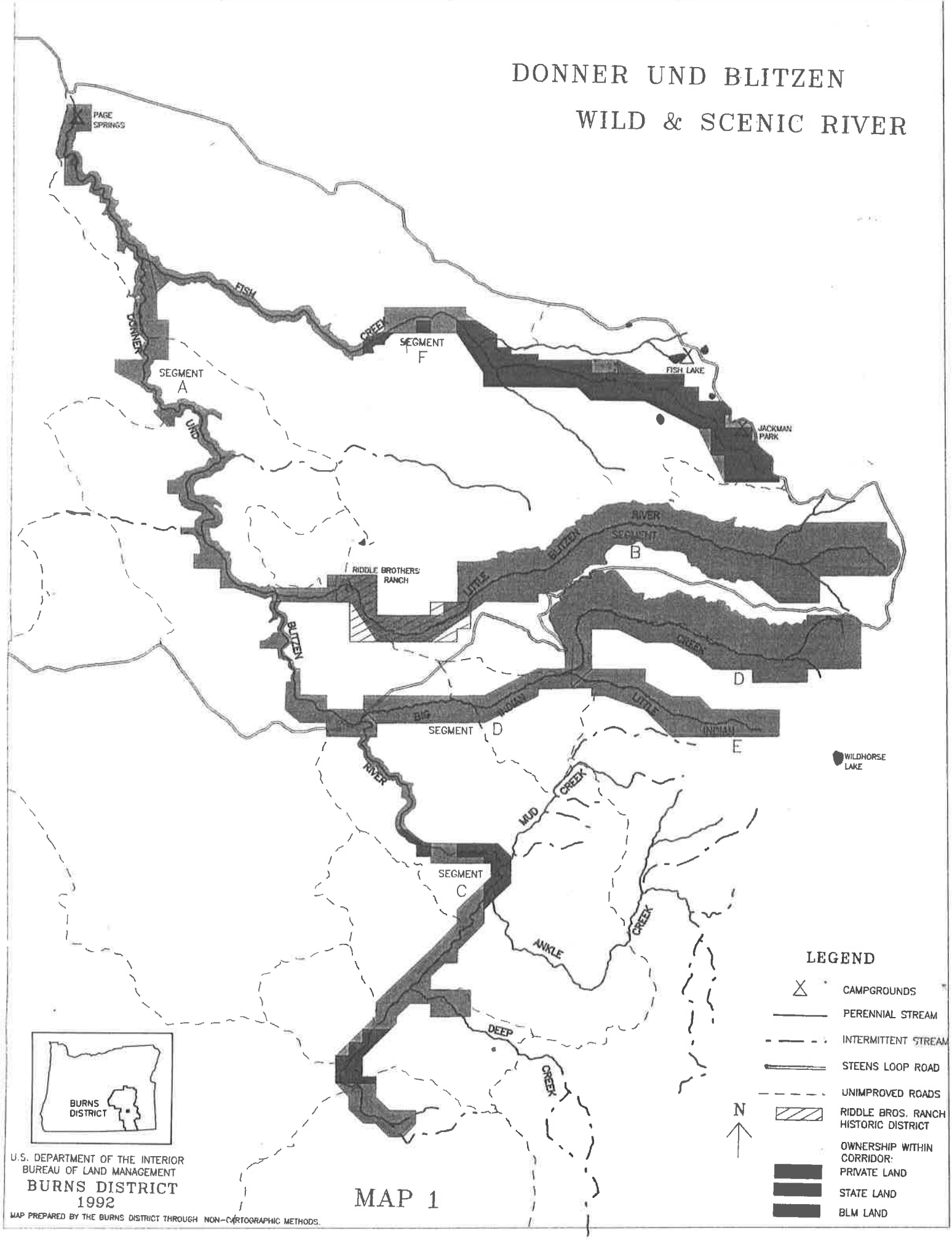
1. Emphasis on protection of the natural resources with compatible designs for facility development and recreational opportunities.

2. Provide minimum protection to the resource values within the corridor as required by law and maximize resource utilization.

3. Provide for maximum resource protection with little or no utilization of the resources.

4. No-action, continue present management.

Alternative 1, the preferred alternative, provides for recreation improvements, while protecting the existing qualities of the river corridor. Campgrounds, restrooms, trailheads, staging areas and accessibility would be provided to enhance recreation opportunities. Alternative 2 contains proposals for minimum protection of the natural features while providing additional developments for recreation and livestock management. Alternative 3 emphasizes maximum resource protection for the outstandingly remarkable values. Alternative 4, the no-action alternative, proposes continuation of present management with little or no future development in the plan area.


DONNER UND BLITZEN
WILD & SCENIC RIVER
PAGE SPRINGS
DONNER UND BLITZEN RIVER
FISH CREEK
SEGMENT A
SEGMENT F
FISH LAKE
JACKMAN PARK
SEGMENT B
RIDDLE BROTHERS RANCH
LITTLE BLITZEN
BLITZEN
CREEK D
LITTLE INDIAN
SEGMENT D
BIG INDIAN
E
WILDHORSE LAKE
RIVER
MUD CREEK
SEGMENT C
ANKLE CREEK
DEEP CREEK
LEGEND
CAMPGROUNDS
PERENNIAL STREAM
INTERMITTENT STREAM
STEENS LOOP ROAD
UNIMPROVED ROADS
RIDDLE BROS. RANCH HISTORIC DISTRICT
OWNERSHIP WITHIN CORRIDOR:
PRIVATE LAND
STATE LAND
BLM LAND
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BURNS DISTRICT
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992
MAP PREPARED BY THE BURNS DISTRICT THROUGH NON-CARTOGRAPHIC METHODS.
MAP 1
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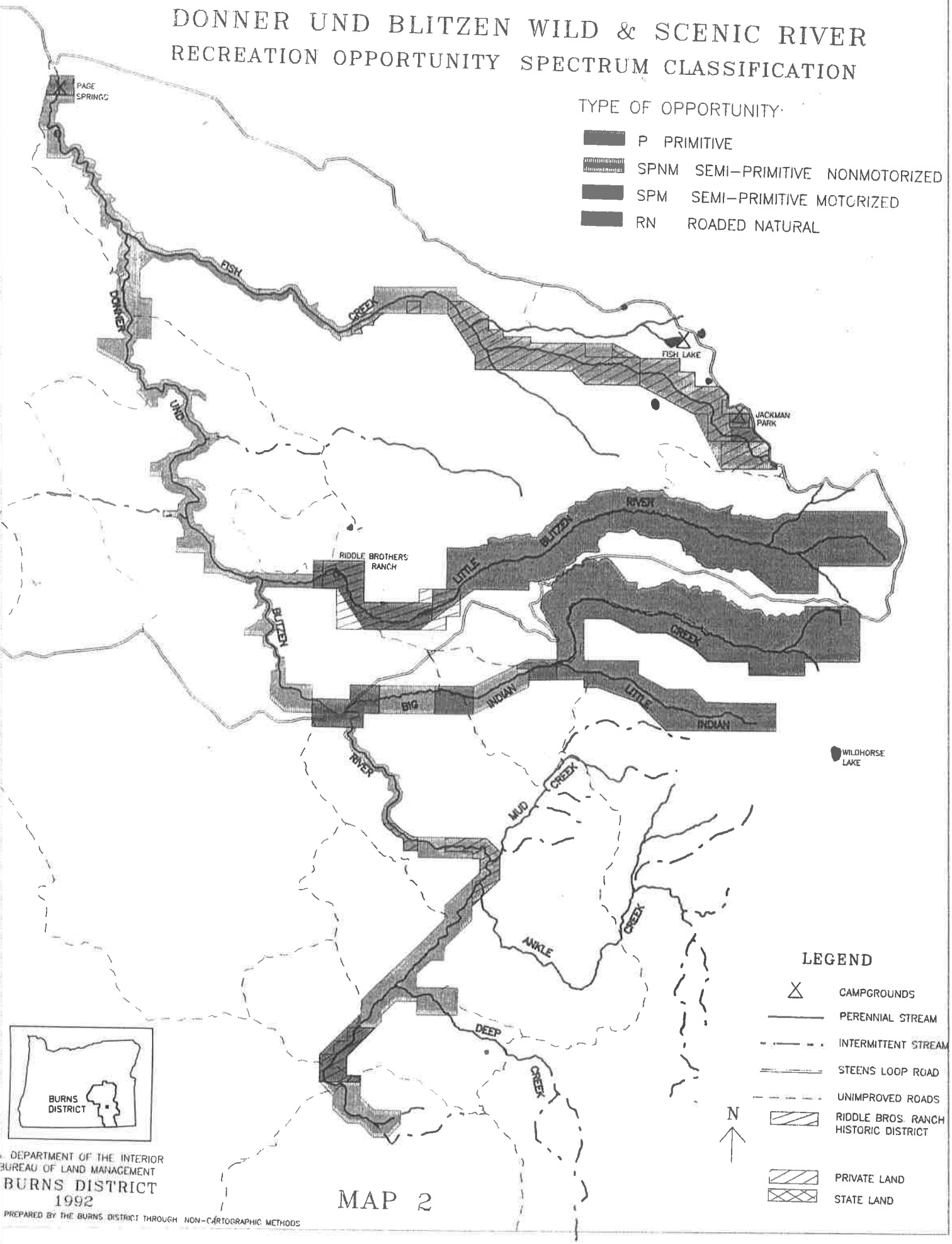
MILES

DONNER UND BLITZEN WILD & SCENIC RIVER
RECREATION OPPORTUNITY SPECTRUM CLASSIFICATION



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MAP 2

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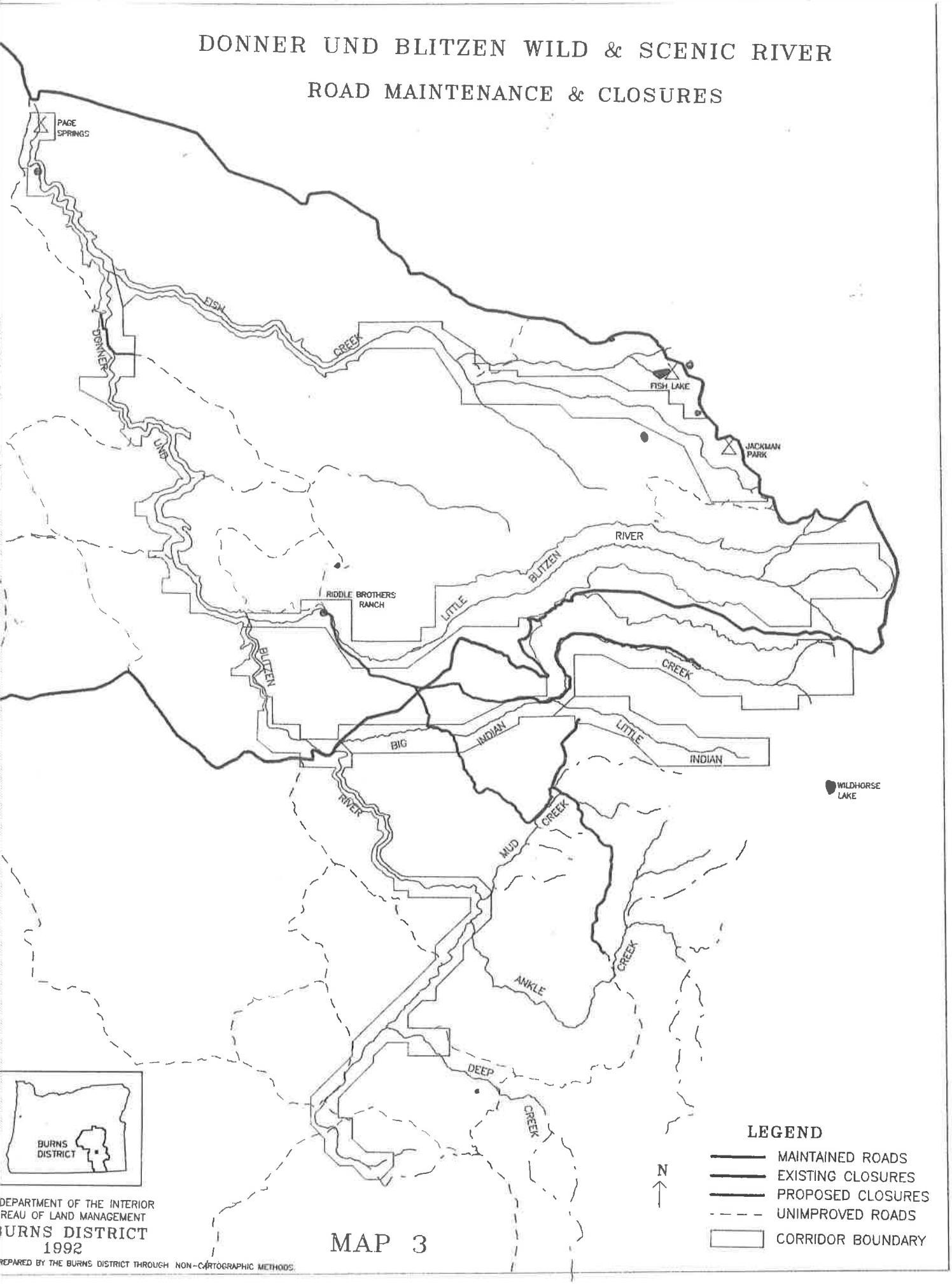
DONNER UND BLITZEN WILD & SCENIC RIVER

ROAD MAINTENANCE & CLOSURES



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MAP 3

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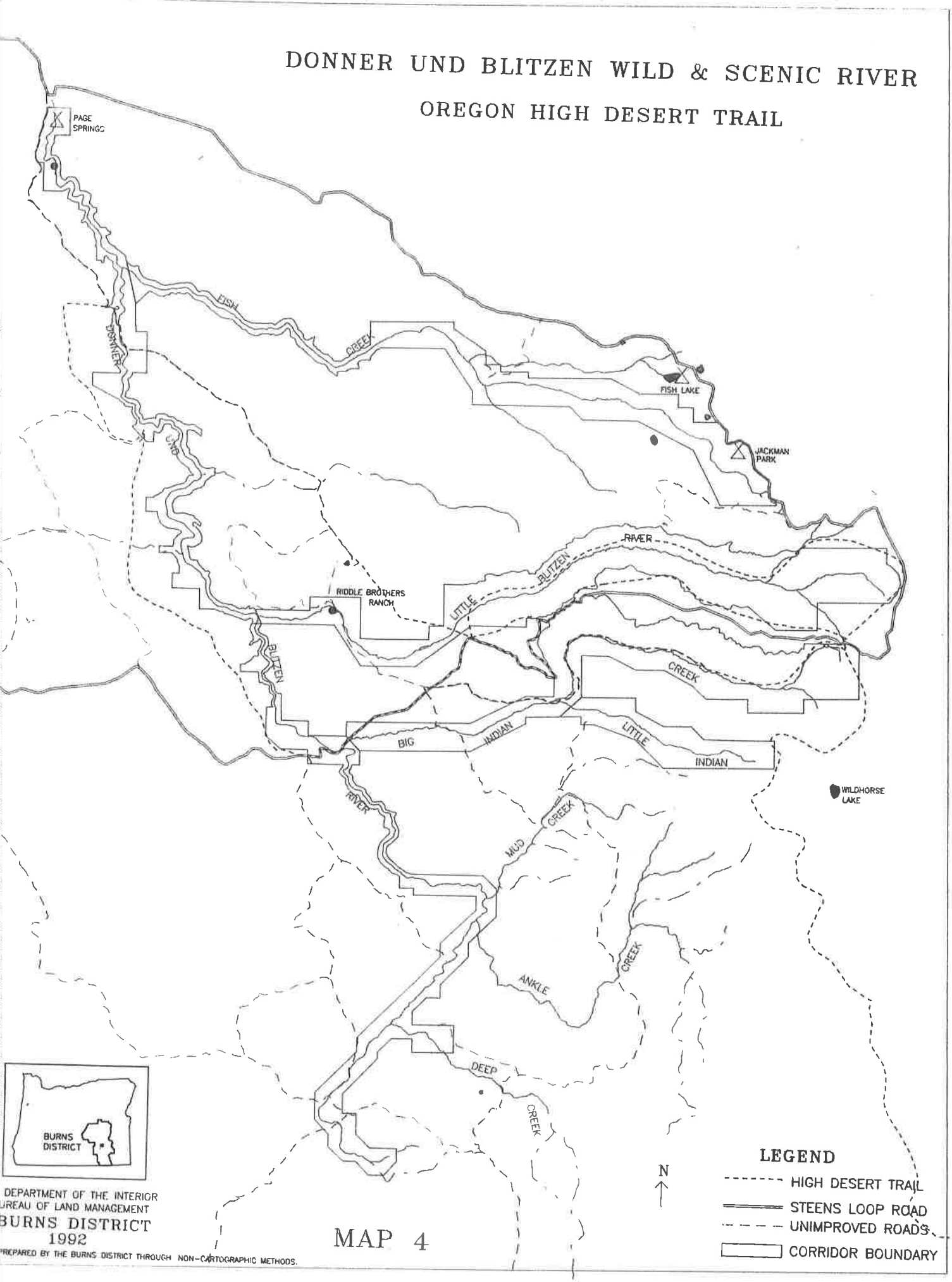
MILES

DONNER UND BLITZEN WILD & SCENIC RIVER

OREGON HIGH DESERT TRAIL



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MAP 4

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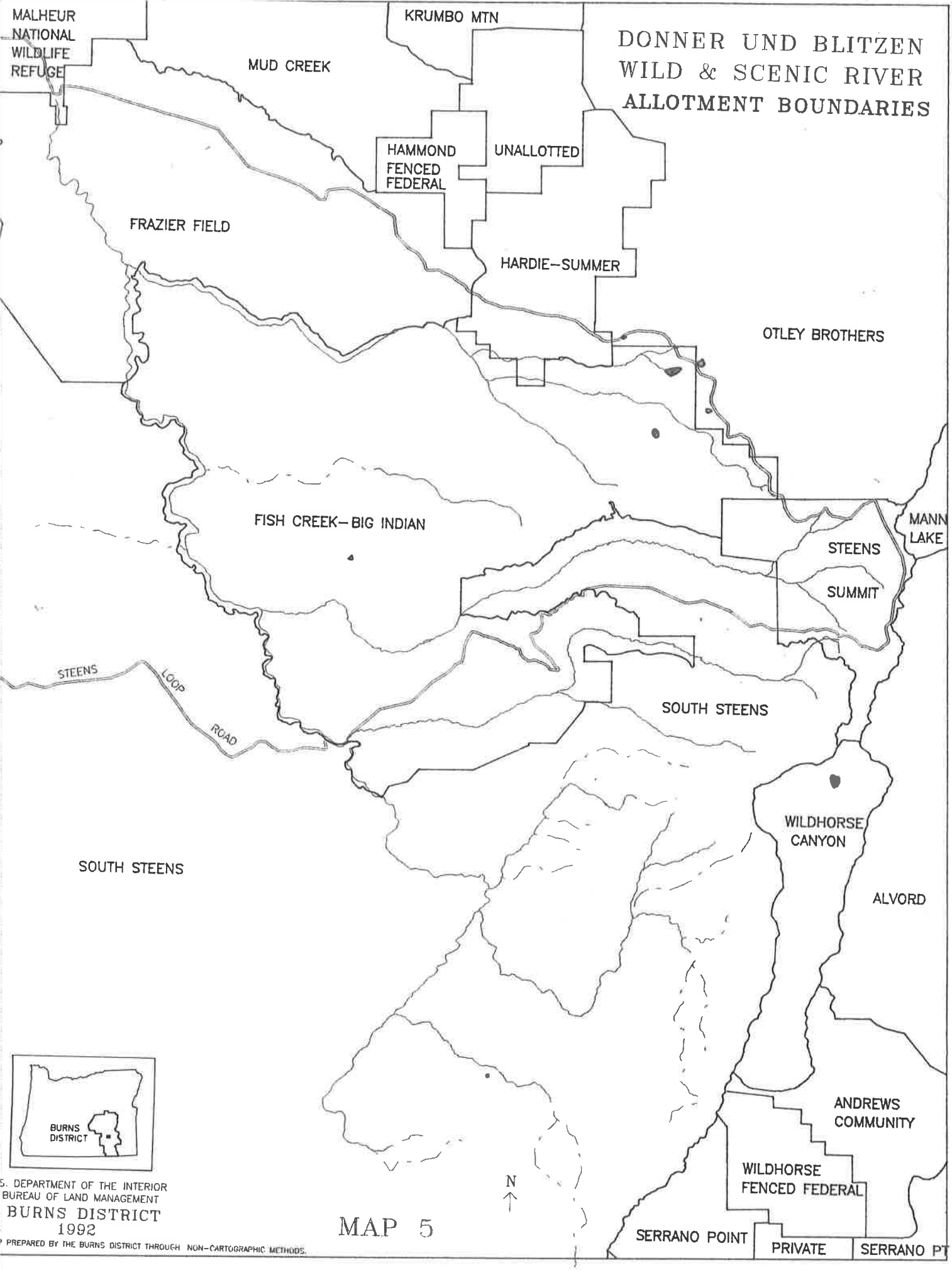

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1992
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Table of Contents

CHAPTER 1
INTRODUCTION

LOCATION

The Donner und Blitzen River, known as the Blitzen River and its tributaries, is located approximately 70 miles south of Burns, Oregon. The river and its tributaries originate on the west slopes of the Steens Mountain and flow in a northwesterly direction before entering the 185,000-acre Malheur National Wildlife Refuge. The Refuge is dependent upon the water generated on the Steens. Much of the river's length is situated in deeply carved canyons. The preliminary boundary configuration includes 22,625 acres.

BACKGROUND

Native Americans, including the Northern Paiute, inhabited the Steens Mountain region as long as 8,000 to 10,000 years ago.

During the period of 1826 to 1829, the first recorded history began with the exploration and exploitation of the area 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 U.S. 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 "Donner und Blitzen," which is German for thunder and lightning.

Cattle were driven into the area in 1872. By the 1900's, 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 in 1934, over 100,000 sheep and cattle grazed the Steens Mountain.

In the 1940's and 1950's, recreational use started to occur on the Steens. In 1962, the Steens Mountain Loop Road, which allowed vehicle access to the top of the mountain, was completed. Recreational use has become a primary activity since the completion of the loop road. In 1972, the U.S. Bureau of Land Management (BLM), recognizing the importance of the recreational opportunities, designated the Steens as "recreation lands."

Big Indian Canyon.

In 1991, 47,916 visitors came to the Steens to participate in a variety of recreational activities. A lot of this recreational use occurred in and adjacent to the Blitzen River and its tributaries.

On October 28, 1988, Congress passed Public Law 100-557, titled, "The Omnibus Oregon Wild and Scenic Rivers Act of 1988." This act amends the Wild and Scenic Rivers Act of 1968 and adds 40 new rivers to be designated as National Wild and Scenic Rivers. The Donner und Blitzen River located in southeastern Oregon, was added to the system and was cited in the Act as follows:

"(A) The 16.75-mile segment of the Donner und Blitzen from its confluence with the South Fork Blitzen and Little Blitzen;
"(B) The 12.5-mile segment of the Little Blitzen from its headwaters to its confluence with the South Fork Blitzen;
"(C) The 16.5-mile segment of the South Fork Blitzen from its headwaters to its confluence with the Little Blitzen;
"(D) The 10-mile segment of Big Indian Creek from its headwaters to its confluence with the South Fork Blitzen;
"(E) The 3.7-mile segment of Little Indian Creek from its headwaters to its confluence with the Big Indian Creek, and
"(F) The 13.25-mile segment of Fish Creek from its headwaters to its confluence with the Donner und Blitzen."

The designated portion of the Donner und Blitzen River is to be managed by the U.S. Department of Interior, Bureau of Land Management, Burns District Office located at HC-74, 12533 Highway 20 West, Hines, Oregon 97220.

OUTSTANDINGLY REMARKABLE VALUES

Through the development of the resource assessment, the river-related values, or features, were identified either as outstandingly remarkable or contributing substantially to the river setting or ecosystem. This includes the following categories:

Scenic
Geologic

Recreational
Fish and Wildlife
Vegetation
Cultural (Traditional practices/prehistoric)
Cultural (Historic)
Other Values

Scenic

The designated river corridor for the Donner und Blitzen River contains 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, elevation, 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 viewer experiences the scenery. It is one of the greatest qualities of this river system. In the upper elevations, river users have an opportunity for a primitive experience viewing textbook examples of glaciated canyons and deep basalt formations of the main Blitzen River. These viewsheds are largely untouched and in a natural condition.

Portions of the river system fall within the Steens Mountain Scenic Area of Critical Environmental Concern (ACEC). Fifty thousand five hundred acres were designated to protect and enhance the viewshed of the Steens. With such a diversity of landscapes within a river system, the visual qualities result in an outstandingly remarkable value.

Geologic

Steens Mountain is unique because it is the northern-most, uplifted fault block within the Basin and Range Province. It is the largest fault block within the State of Oregon, with well-defined escarpments and graben valleys.

Surface rock in the area is predominantly Steens Basalt, which consists of thin, multiple flows of basalt approximately 15 million years old. The basalt has a cumulative thickness of several thousand feet. Thin patches of rhyolite ash-flow tuffs occur sporadically throughout the area.

The area is unique within its geographic region because the upper 2,000 feet of the Steens was shaped during the ice age. The ice age brought heavy snows and ice to the Steens, capping the mountain in a blanket of white at least 6 miles down the west side. Glaciers formed in the creek and streambeds, and the intense weight of the snowcap caused depressions on the surface of the mountain. The glaciers carved and gouged down over 2,500 feet to a layer of very hard basalt.

A second glacial advance was confined to the upper sections of the gorges and scarp. The second advance created smaller cirques, or hanging valleys, in the highest areas of the existing gorges.

The area today provides textbook examples of u-shaped glaciated canyons. These geological features result in an outstandingly remarkable value.

Recreational

A use survey, conducted in 1988 for the Steens Mountain Recreation Lands (which includes the Blitzen River and its tributaries), showed that Steens Mountain is visited by recreationists of geographically diverse origins. Sixty-four percent of the visitors to the Steens are from western Oregon, 19 percent from eastern Oregon, and 17 percent from outside states such as Washington, Idaho, California, and Nevada.

The Steens Mountain is a destination area due to its unique resource characteristics and associated recreation opportunities. Visitors travel long distances to recreate because of the following attributes:

The river canyons offer high scenic quality in the form of glaciated canyons, along with a variety of diverse vegetation due to climatic conditions.

The river provides a rare 2 to 4-day backpack trip or horseback experience for individuals with moderate skill levels. Portions of the Oregon High Desert Trail are within sections of the river canyons.

Existing recreation uses that are exceptional in quality include fishing, hunting, hiking, photography, wildlife, and scenic viewing. Due to the small size of the stream, the river segments are not used for boating.

All but a small section of the Donner und Blitzen River lies within the Steens Mountain Recreation Lands. The 1972 designation of the Steens Mountain Recreation Lands recognized the importance of the outstanding recreational opportunities within the area. With the quality and types of recreational activities available, this results in an outstandingly remarkable value.

Fisheries

The Blitzen River supports a wild, native redband trout population. The redband trout and Malheur mottled sculpin is listed by the U.S. Fish and Wildlife Service (USFWS) as a Candidate 2 Threatened and Endangered species. Historically, the Blitzen River has provided excellent angling for

native redband trout and is recognized by anglers as one of Oregon's finest wild trout streams. Currently, no known Native American cultural use of fisheries is identified in this river system.

Fish species in the Blitzen River above Page Springs Dam are redband trout, mountain whitefish, longnose dace, and mottled sculpin. The redband trout is the most common species found in the system. The presence of these species is indicative of good stream habitat, small to moderate stream size, and good water quality.

The recreational values associated with the native fisheries is extremely high. One section of the Donner und Blitzen River has been designated "catch and release" to maintain quality angling and a healthy population of native fish.

The quality and importance of the native fisheries habitat results in an outstandingly remarkable value.

Wildlife

The Blitzen River drainage is highly valued for its abundant wildlife. The river area and adjacent uplands are used by 250 (estimated) wildlife species. Currently, no known Native American cultural use of wildlife is identified in this river corridor. Mule deer winter along the lower 4 miles of the Blitzen River and the lower 4 miles of Fish Creek. Deer summer in the upper parts of the area. The ridge between Big Indian and Little Indian Canyons 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. Pronghorn antelope use the open terrain adjacent to the corridor in certain areas.

Raptors nest along the canyon rims of the 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 River Gorge. Chukars and valley quail are found along the river at the lower elevations, while sage grouse summer in the upper areas of the river in flatter terrain.

The summer inventories of 1991 determined the diversity of habitats. Studies were done on aquatic habitat, riparian conditions, sensitive plant species, and unique plant and habitat communities.

As a result of these inventories, the wildlife species associated with the river system will be managed as an outstandingly remarkable value.

Vegetation

The Blitzen River and its tributaries contain a diversity of plant communities. 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.

There are a large number of sensitive plant species which have been documented within the river corridor as well as others whose presence is suspected. These include species which are endemic to Steens Mountain, species which occur in Oregon only on the Steens, and other species of special interest. Sensitive species occur in all segments of the river except for Segment A. Additional vegetation information can be found in the Vegetation Section, page 23, and in Appendix F.

A botanical inventory was conducted in the summer of 1991 which obtained a thorough inventory of the river corridor for sensitive plant species, unique natural areas, and created a general species list for the river segments.

As a result of these inventories, the variety of vegetation communities, and the large number of sensitive species present, the vegetation associated with the river system will be managed as an outstandingly remarkable value.

Cultural *(Traditional Practices/Prehistoric Sites)*

The river corridor was used by Native Americans, including the Northern Paiute and their predecessors. The area was used for hunting, fishing, and gathering of plants for food and other uses by means of transportation corridors along ridges and water courses.

Currently, no known Native American traditional practices are identified.

Thirty-five river miles have been inventoried, including high priority areas with concentrated recreation use within each river segment. The entire 74 miles will be inventoried as part of the recreation and cultural programs. There are portions of the river system where prehistoric sites are known to be

present. This includes the Riddle Brothers Ranch National Register Historic District which remains largely unstudied (inventory scheduled for the summer of 1992). Conditions for moderate to high prehistoric site potential exist throughout the corridor. Locations of importance to Native Americans for traditional practices and other purposes may be identified in consultation with the appropriate tribe(s).

Through inventory data, evaluations of potential site use and on-going consultation with the Burns Paiute Tribe, the values associated with prehistoric sites and traditional practices will be managed as significant resources, although outstandingly remarkable values are not known to be present.

Cultural *(Historic Sites)*

Cultural resource inventories (see previous section) and existing data indicate that historic sites and resources on Steens Mountain, including the river corridor, reflect the turn-of-the-century period of settlement, homesteading, and subsequent livestock raising endeavors. Old cabins and tree carvings located along river segments are considered to have important resource values and may be managed for public uses as appropriate.

The Riddle Brothers Ranch Historic District, located along the Little Blitzen River, is listed on the National Register of Historic Places. This district covers 1,120 acres of public land located along the Little Blitzen River (Segment B) of which approximately 850 acres lies within the designated river corridor. The site is still a private working ranch under a title transfer agreement with Clemens Ranches, Inc.

Three complexes of structures are included within 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.

A cultural resource management plan (CRMP) is being implemented that provides guidance on how to manage this historic district in conjunction with the Wild and Scenic River. The plan assesses the need for general structure maintenance, restoration, and rehabilitation. It also addresses public uses which are compatible with the historic character of the ranch and the requirements of a wild river environment.

These cultural resource qualities are important to the overall character of the river and will be managed as an outstandingly remarkable value for the Riddle Brothers Ranch Historic District.

OTHER MANAGEMENT DESIGNATIONS

There are portions of four Wilderness Study Areas (WSAs) within the designated Wild and Scenic River corridor. These include the High Steens WSA (2-85-F), Little Blitzen Gorge WSA (2-86-F), Blitzen River WSA (2-86-E), and South Fork Donner und Blitzen River WSA (2-85-G). Within the designated river, there are three ACECs (two of which are Research Natural Areas/Areas of Critical Environmental Concern [RNA/ACECs]): The Rooster Comb RNA/ACEC, The Little Blitzen RNA/ACEC, and The Steens Scenic ACEC.

The South Steens Horse Management Area (HMA) includes over 250,000 acres adjacent to portions of the Blitzen River. The Herd Management Plan calls for a minimum number of 159 horses and a maximum number of 304 animals.

The special management areas located within the Donner und Blitzen National Wild and Scenic River enhance the area's uniqueness through these existing BLM-managed programs. These values are important to the character of the river. The Rooster Comb and Little Blitzen RNA/ACECs have been established for the protection of botanical values. The Steens Scenic ACEC has been set aside to protect the visual resources. Wild horses are managed under the Wild and Free-Roaming Horse and Burro Act of 1971.

The Riddle Brothers Ranch National Register Historic District is located predominantly within the river corridor (see previous section). The historic resources within the ranch are managed to provide for public use as long as the resources are protected and maintained.

PURPOSE AND SCOPE

This Wild and Scenic River Management Plan establishes a comprehensive set of actions to provide the Donner und Blitzen River and its tributaries with a level of resource protection and management for a wild river environment, consistent with the National Wild and Scenic Rivers Act.

The River Management Plan, when completed, will meet the requirements of the National Environmental Quality Act and the Oregon Omnibus Wild and Scenic Rivers Act of 1988.

PLAN ORGANIZATION

An interdisciplinary-team approach with an overall team leader is being used in the development of the Donner und Blitzen River Management Plan. Staff specialists from the

following disciplines are included: Recreation, Wildlife, Fisheries, Cultural Resources, Geology, Botany, and Range.

An ad hoc, or Citizens Advisory Group, has also been formed for the development of the management plan. This volunteer group consists of the following individuals, which represent different segments of the public as well as other agencies:

Gary Ivy	Malheur National Wildlife Refuge
Wayne Bowers	Oregon Department of Fish and Wildlife
Rick Miller	Oregon Trout
Kate Joost	Oregon Rivers Council
Ken Thompson	Livestock Industry
Dick Vander Schaaf	The Nature Conservancy
Dayle Robertson	Private Lands, Range Permittee
Mark Smith	SOILS (Save our Industries and Lands)

The final river management plan will include a combined plan and environmental assessment (EA).

METHOD OF PLAN PREPARATION

The management development is being molded after 2 years of consultation between the BLM, U.S. Forest Service (USFS), and Oregon State Parks.

An interagency agreement was signed between the three agencies to format and outline the management plan development. All designated rivers under the Oregon Omnibus Wild and Scenic Rivers Act of 1988 will follow the outlines established as a result of the interagencies' agreement. This includes interim boundary designation, development of the resource assessment (which serves as a foundation of the river management plan), and development of the river management plan itself.

RELATIONSHIP TO FEDERAL AND STATE PLANS

Portions of the Blitzen River and its tributaries are identified throughout the Andrews Land Use Plan of 1982 and the Steens Mountain Recreation Area Management Plan (RAMP) of 1985 as having specific management actions to be initiated within the Plan. These actions include enhancement of wildlife, fisheries, riparian habitat, botanical, wilderness, cultural, and recreational values.

The Donner und Blitzen Wild and Scenic River is not designated as a State Scenic Waterway. Its Federal designation is consistent with the Oregon State Comprehensive Outdoor Recreation Plan and the Harney County Land-Use Plan.

PUBLIC INVOLVEMENT

To date, public outreach or involvement for the development of the management plan has included the following:

April 8, 1989	Interim boundaries designated for the Donner und Blitzen National Wild and Scenic River
April 20, 1989	Open house meeting to collect input on the interim boundary
September 11, 1990	Draft resource assessment sent to interested publics
December 1990	Advisory Group established to help in the development of the plan
January 9, 1991	First meeting with Advisory Group
March 14, 1991	Second meeting with Advisory Group
May 13-14, 1991	Field trip with Advisory Group to Blitzen River
September 10-11, 1991	Field trip with Advisory Group to Blitzen River
October 29, 1991	Final resource assessment sent to interested publics

MANAGEMENT OBJECTIVES AND CONSTRAINTS

The Blitzen River and its tributaries will be managed to preserve its wild and primitive qualities. Visitor and resource management will strive to enhance opportunities for high quality, primitive recreation experiences. This will be permitted to the extent that the values, for which Congress designated the river as a component of the Wild and Scenic Rivers Act, are not degraded.

The following objectives will guide future management and use of the designated corridor of the Blitzen River and its

tributaries. In accomplishing these objectives, the BLM will involve and cooperate with other public agencies, private interests, and resource users:

1. Protect and/or enhance the outstandingly remarkable values identified in the Congressional Record and the resource assessment.

2. Provide for safe, healthy, and lawful use of the river resources.

3. Provide for a variety of recreational resources/ experiences while allowing for other compatible resource management opportunities.

4. Provide for adequate facilities, access, and information/educational opportunities.

Constraints which, because of laws, regulations, policy, or other planning commitments, influence the development of management actions are:

1. Andrews Resource Area Land Use Plan

2. Private land ownership within the river corridor

3. Grazing permits within allotments on public land

4. Existing Research Natural Area/Area of Critical Environmental Concern within the river corridor

5. Steens Mountain Recreation Area Management Plan

6. Riddle Brothers Ranch Historic District Cultural Resource Management Plan

7. Steens Mountain Recreation Area Interpretive Prospectus

8. Wild and Free-Roaming Horse and Burro Act - 1971

9. Interim Management Policy Guidelines for Land Under Wilderness Review

ISSUES

This section identifies critical issues to be considered in the management plan. Within the established framework of the objectives, the following must be determined:

1. The level of development within the river corridor to protect or enhance the outstandingly remarkable values.
2. Infrastructure needed to support public use such as campgrounds, roads, trails, etc.
3. The types of resource activities which are compatible.

These issues were developed and generated through input from the public and working with the Citizens Advisory Group.

Issue 1 - Resource Protection

The Blitzen River and its tributaries have resource values of national significance. Different resource opportunities can be utilized as long as they do not adversely affect these values which have been set forth by Congress as part of the National Wild and Scenic Rivers System.

Considerations:

1. Recreation management
2. Fish and wildlife management
3. Riparian management
4. Grazing management - Livestock and Wild Horses
5. Cultural resource management

Issue 2 - Recreation Development/Visitor Management

Recreational use within the river corridor and surrounding area has increased substantially over the past 10 years. The Blitzen River and its tributaries are within the Steens Mountain Recreation Lands.

Visitors are drawn to the area because of the combination of high scenic values and a rugged back country which offers a primitive experience.

Sanitation, litter, impacts to unique natural areas, sensitive plants, and animals are a growing concern within the river corridor.

Considerations:

1. Recreation facility development
2. Road maintenance
3. Off-road vehicle use/Road Closures
4. Trails
5. Public outreach (information/education)
6. Search and rescue
7. Law enforcement

Issue 3 - Land Ownership

Although the majority of the river corridor is owned and managed by the BLM (19,313 acres), there are 3,312 acres of private land owned by five different landowners. (The State of Oregon has 40 acres within the corridor.) The river corridor cannot be effectively managed by the BLM alone. BLM should look at different ways to manage the river as a whole and cooperate between all affected interests.

Considerations:

1. Private landowners
2. Management cooperation between agencies an affected parties
3. Land exchanges/purchases/easements
4. Administrative boundaries

Issue 4 - Other Management Actions/Considerations

There are other resource management considerations which have a definite affect on the Blitzen River and its tributaries. Some natural occurrences, such as the spread of juniper, are impacting the uplands thus affecting the watershed of the river. Others, such as existing designations, land-use plans, and decisions implemented, will influence the development of this river management plan.

Considerations:

1. Water Quality/Water Quantity
2. Juniper encroachment
3 Fire management
4. RNA/ACECs
5. WSAs

SUMMARY OF ALTERNATIVES

Alternative 1 (The preferred alternative)

This alternative provides for recreation and resource improvements, while protecting and enhancing the outstandingly remarkable values of the river corridor. Resource improvements enhancing the condition of riparian habitat, aquatic habitat, and the unique natural areas will be initiated as a result of the inventories and baseline data. Recreational developments, such as campgrounds, parking areas, trailheads, and vehicle access, would be provided or maintained to support recreation opportunities. Information/ educational media will be developed for the recreation users.

Alternative 2

This alternative provides for the minimum protection of the natural resources as required by law, and at the same time, allows for utilization of the resources, recreation opportunity, and development. This alternative will require a greater level of administration and control.

Alternative 3

This is opposite to Alternative 2. It will provide proposals for maximizing the protection of the river corridor. The outstandingly remarkable values will be protected at the expense of other resource uses. It will also require a greater level of administration and control.

Alternative 4 (No-action alternative)

This alternative proposes continuation of present management protecting only the river values, with little or no enhancement of the outstandingly remarkable values or future development for the recreational user.

CHAPTER 2
AFFECTED ENVIRONMENT

RIVER SEGMENTS

As a result of recalculating the river miles and acres within the corridor, using the Moss Geographical Information System (GIS), these figures are different than what is described in the Act on page 2 under the Introduction section.

There is a new total of 74.8 river miles encompassing 22,625 acres. These new figures will be used to manage the river corridor.

ACCESS

Access to the Donner und Blitzen River is via Highway 205, south of Burns, and the Steens Mountain Loop Road. Since the construction of the Loop Road in 1962, this has been the primary access to the recreation lands and the river corridor. Primitive access roads leading directly to the river are limited and very difficult to drive. Refer to Map 1 on page V showing roads within or adjacent to the river corridor.

The following is the breakdown of roads by river segment:

Segment A	0.5 miles of Page Springs Campground Road. 1.2 miles of primitive road.
Segment B	2.1 miles of primitive road.
Segment C	0.8 miles of the southern portion of the Steens Mountain Loop Road. 2.75 miles of the Huffman Camp Road. 0.25 miles of primitive road to Bill Taber Cabin.
Segment D	5.9 miles of primitive road.
Segment E	No roads.
Segment F	1.0 miles of primitive road. 0.75 mile of the northern portion of the Steens Mountain Loop Road.

LANDOWNERSHIP AND DEVELOPMENT

LANDOWNERSHIP

Ownership of the river and river corridor is divided among Federal, State, and private holdings. Of the 22,625 acres, 19,273 acres are Federal land, 40 acres are State land, and 3,312 acres are private lands.

		River Miles	Acreages
Segment A	BLM	14.2	2,530
	Private	—	—
	State	—	—
Segment B	BLM	13.8	6,196
	Private	—	—
	State	—	—
Segment C	BLM	13.8	2,769
	Private	3.8	730
	State	—	—
Segment D	BLM	11.9	5,178
	Private	—	—
	State	—	—
Segment E	BLM	4.1	1,363
	Private	—	—
	State	—	—
Segment F	BLM	6.4	1,237
	Private	8.0	2,582
	State	—	40

Corridor acreage is based on an average of 320 acres per river mile.

DEVELOPMENT

Various levels of development occur within the river corridor or adjacent to the river segments. Roads were discussed in the previous section.

Segment A

Page Springs Campground is a 20-acre BLM recreation site which receives approximately 67,000 visitors per year. The campground is located adjacent to the Malheur National Wildlife Refuge along the Blitzen River.

A small dam is located 1 mile upriver from the Page Springs Campground. The dam was built by the U.S. Geological Survey (USGS). The gauging station has been in use since the early 1900's and is still in operation. Due to years of high water and lack of maintenance, the dam is in poor condition.

Segment B

The historic Riddle Brothers Ranch complex is described on page 5 under historic sites. There is also a modern cabin associated with this ranch. The lands and buildings were acquired by the BLM, through land exchanges and purchases. These transactions brought 7,518 acres into public ownership although private use is authorized by a title covenant.

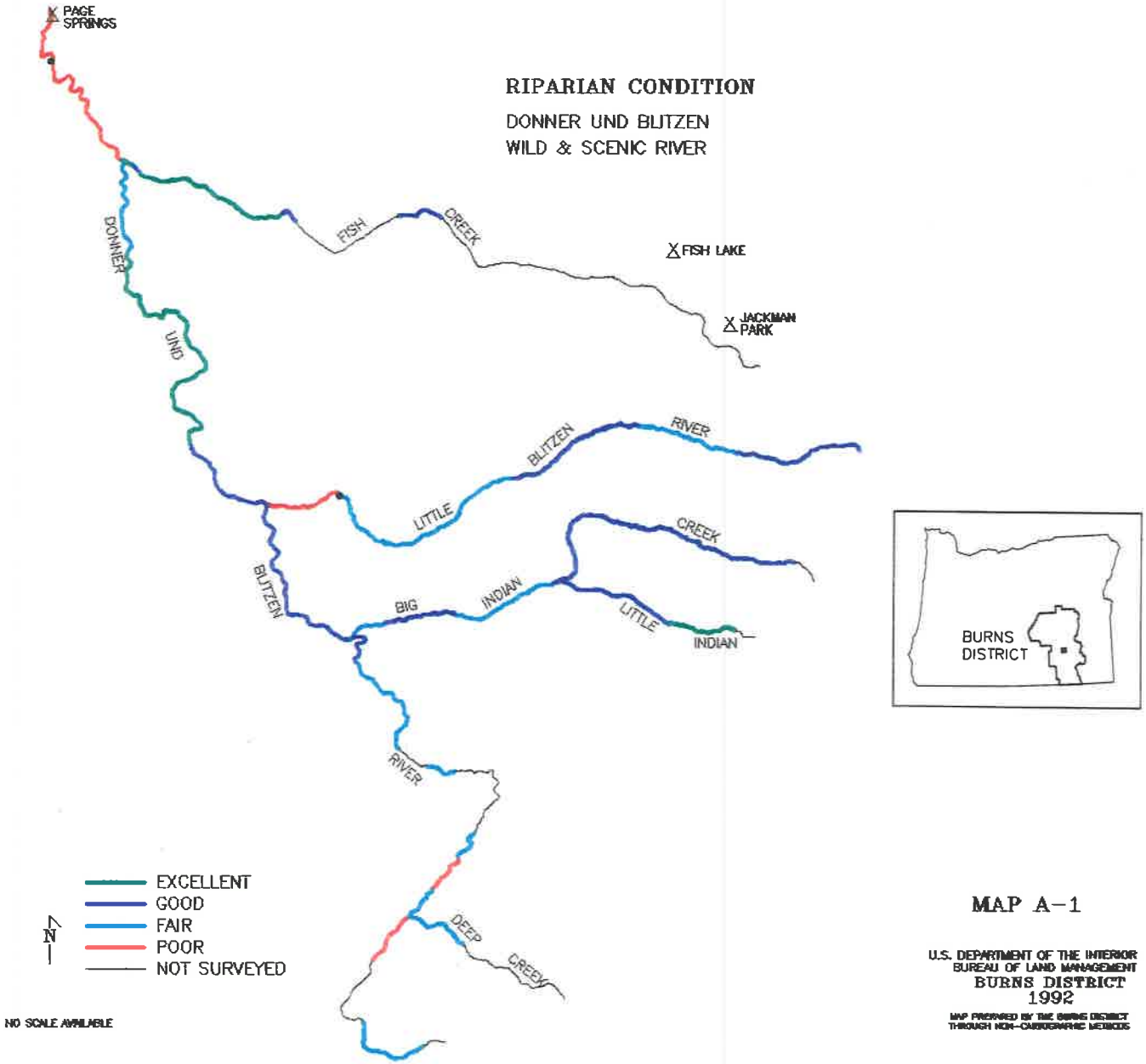
The Kueny homestead is located in the Little Blitzen Gorge. All that are left are the foundations to two cabins and the old corrals. The site is in very poor condition.

Segment C

The Huffman Camp is located on private property and is privately owned. The cabin, outbuildings, and corrals are in good condition.

The Bill Taber cabin is located on private property. The cabin remains standing but is in poor condition and unoccupied.

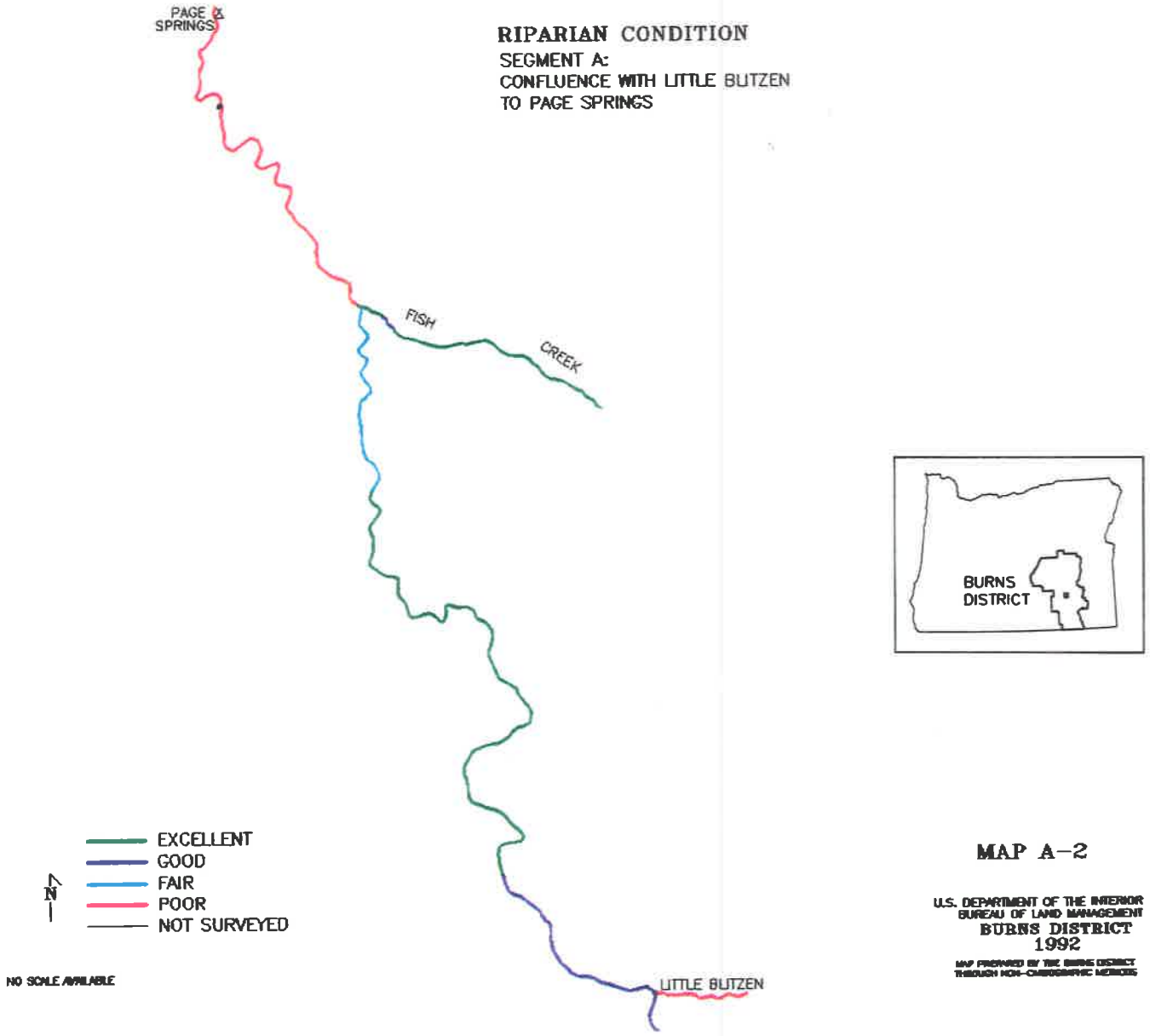
A one-lane cement bridge, located along the southern portion of the Steens Mountain Loop Road at Blitzen crossing, spans the Blitzen River at this point.



MAP A-1

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT
THROUGH NON-CARTOGRAPHIC METHODS



RIPARIAN CONDITION

SEGMENT A:
CONFLUENCE WITH LITTLE BUTZEN
TO PAGE SPRINGS

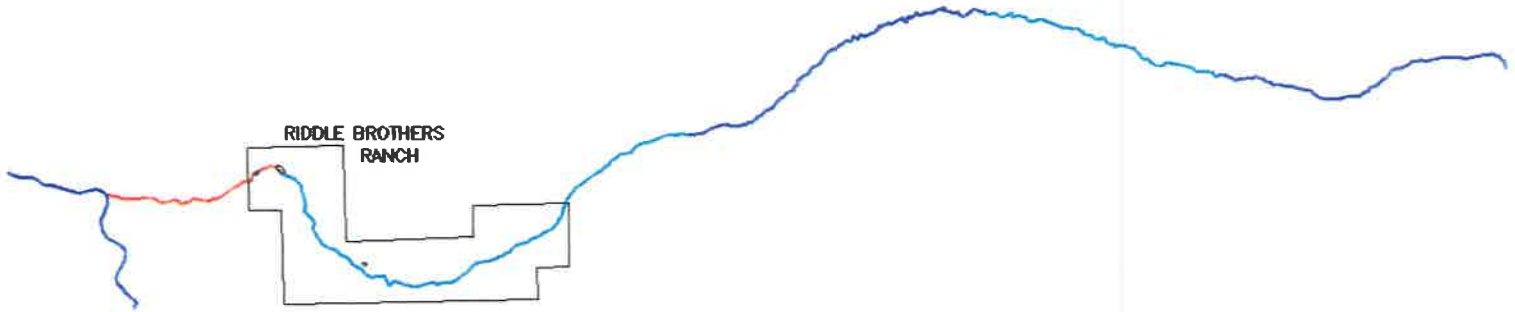
MAP A-2

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT THROUGH NON-CARTOGRAPHIC METHODS

RIPARIAN CONDITION

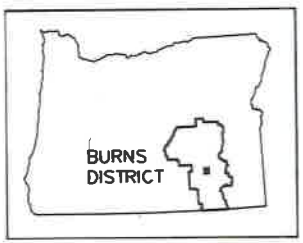
SEGMENT B:
LITTLE BUTZEN RIVER



EXCELLENT
GOOD
FAIR
POOR
NOT SURVEYED

N

NO SCALE AVAILABLE



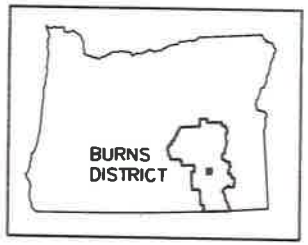
MAP A-3

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT
THROUGH NON-CARTOGRAPHIC METHODS

RIPARIAN CONDITION

SEGMENT C:
HEADWATERS OF DONNER UND BLITZEN
TO CONFLUENCE WITH LITTLE BLITZEN



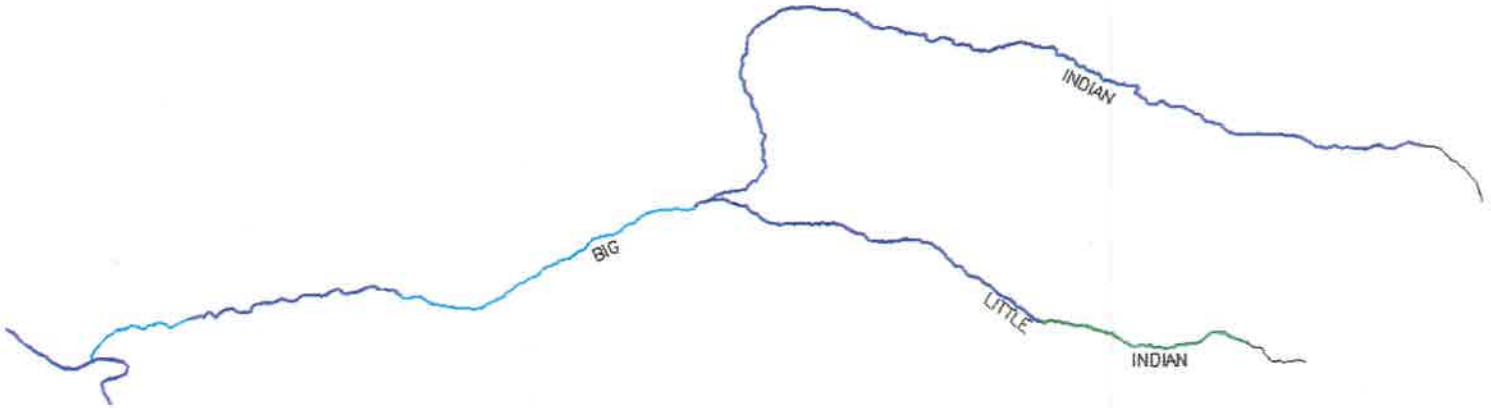
MAP A-4

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT
THROUGH NON-CARTOGRAPHIC METHODS

RIPARIAN CONDITION

SEGMENT D: BIG INDIAN CREEK
AND
SEGMENT E: LITTLE INDIAN CREEK



EXCELLENT
GOOD
FAIR
POOR
NOT SURVEYED

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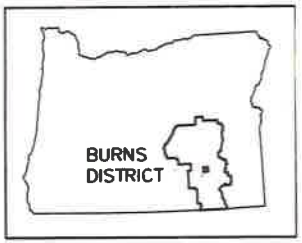
NO SCALE AVAILABLE



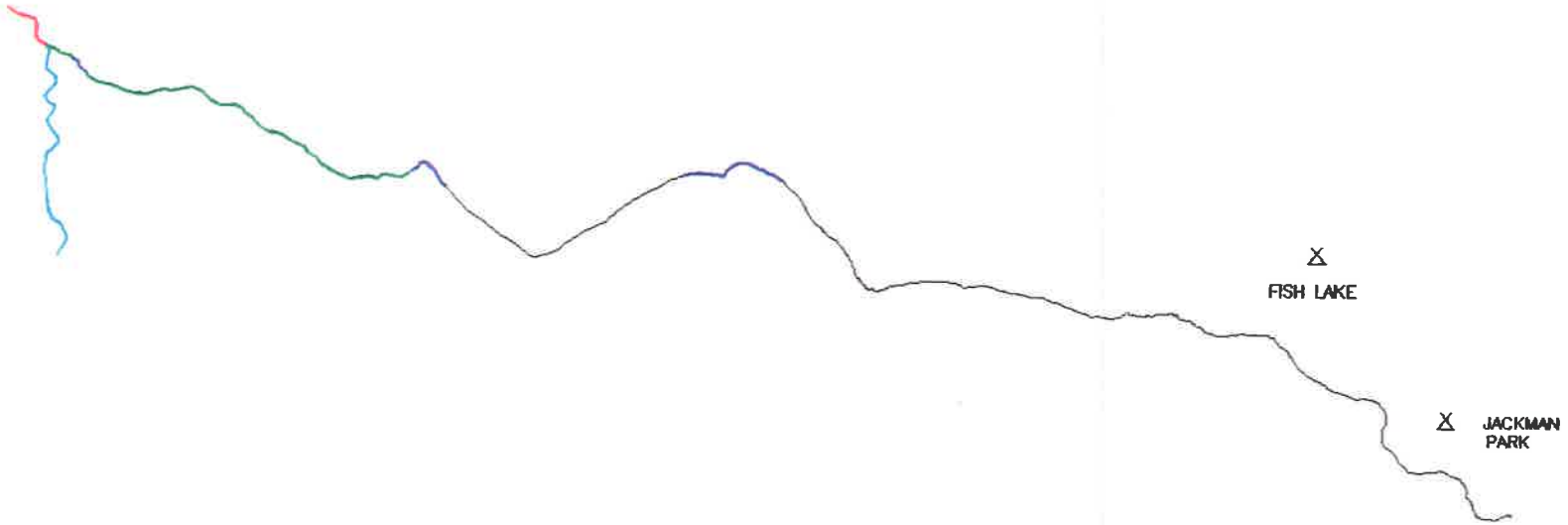
MAP A-5

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT
THROUGH NON-CARTOGRAPHIC METHODS

RIPARIAN CONDITION

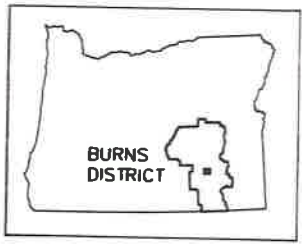
SEGMENT F: FISH CREEK



EXCELLENT
GOOD
FAIR
POOR
NOT SURVEYED

N

NO SCALE AVAILABLE



MAP A-6

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT THROUGH NON-CARTOGRAPHIC METHODS

Segment D

There is an old cabin in poor condition located in the Big Indian Canyon. The remains of an old homestead, called Newton cabin, are located along the lower portion of Indian Creek. These sites are located on public lands.

Segment E

Remains of an old homestead are located in the Little Indian Canyon. The condition of the cabin is poor and located on public lands.

Segment F

Jackman Park Campground is a 10-acre BLM recreation site which receives approximately 8,000 visitors per year. The campground is located east of Fish Lake along the northern portion of the Steens Mountain Loop Road.

The John Scharff cabin is located on his private property in the upper headwaters of Fish Creek. This is a modern cabin used during the summer months.

LANDSCAPE CHARACTER

Steens Mountain, a 30-mile long fault-block mountain, is located in the high desert country of southeast Oregon. It is the northern-most fault-block mountain within the Basin and Range Province. Some 15 million years ago, pressure under the earth's surface thrust the block upward, along a fault, while what is now the Alvord Basin slid down. The tilting of the block resulted in a steep eastern face, and a more gentle slope on the western side. The mountain is also faulted along its west face where it uplifted to form the Catlow rim. The Steens Mountain currently reaches an elevation of 9,773 feet, 1 mile above the Alvord Desert.

Steens Mountain is also unique because it is a true fault-block mountain, being uplifted on both the east and west sides. It is also the largest fault-block mountain in the State of Oregon.

The Donner und Blitzen River offers a diversity of landscapes that contain visual qualities that result in outstanding scenic values. The glaciers formed in the pre-ice age creek beds of the present Little Blitzen, Big Indian, and Little Indian Canyons. Those glaciers carved and gouged to a depth of 2,500 feet.

CLIMATE

The climate of the Steens Mountain recreation area is semi-arid with mild summers and cold winters. Most of the precipitation falls as snow in the winter months. During the spring and summer, runoff from the Steens Mountain provides water to the surrounding countryside, particularly to the north, by way of the Blitzen River.

VEGETATION

The vegetation of the river corridor is extremely diverse. The descriptions of each segment's vegetation are based on the results of the 1991 inventories conducted by The Nature Conservancy in cooperation with the BLM. Additional vegetation information can be found in Appendix F.

Segment A

Along the mainstem Donner und Blitzen River, the canyon side slopes are dominated by western juniper and big sagebrush with Idaho fescue and bluebunch wheatgrass in the understory. Canyon shrubs such as oceanspray, golden currant, and antelope bitterbrush are scattered throughout this section.

The riparian area near Page Springs contains an extensive, spring-fed marshy meadow dominated by native sedges including wooly sedge, Nebraska sedge, and beaked sedge. Tree and shrub species present include black cottonwood, coyote willow, and other willows.

Upstream from Page Springs, the river canyon is quite narrow and steep, and the riparian vegetation is limited. Mountain alder, redosier dogwood, and chokecherry are the primary shrubs with Pacific willow and coyote willow occurring in some areas. Basin wildrye appears on some river terraces.

Along the mainstem Donner und Blitzen, the Page Springs meadow area (a good representation of low elevation riparian community) was assessed as having significant natural values. Sensitive plant species were not found in this river segment.

Segment B

From the Riddle Brothers Ranch downstream to the confluence of the Blitzen River, the riparian zone is dominated by black cottonwood, tree willow, and mountain alder with an understory of Kentucky bluegrass and cheatgrass. The uplands are dominated by western juniper and big sagebrush with Idaho fescue and bluebunch wheatgrass in the understory.

At the Riddle Brothers Ranch, upstream to the mouth of the Little Blitzen Gorge, the meadows are the most extensive bottomlands in the Blitzen River basin. These meadows have been altered by irrigating with a series of ditches, and are dominated by timothy, Kentucky bluegrass, and redtop with some areas of Cusick bluegrass, tufted hairgrass, blue camas, and sedges. The streamside riparian zone adjacent to the meadows is a mountain-alder/western birch/Pacific-willow/rigid-willow community complex. Native American traditional practices may include the blue camas present here.

East of the meadows is a riparian area dominated by black cottonwood, willows, and chokecherry with an understory of Sheldon sedge. Together the meadows and the black cottonwood community represent an entire low elevation riparian complex, which formerly was much more common throughout the northern Great Basin. Although this area has been altered, improved management should result in the river reestablishing a braided channel with a very diverse shrub overstory, mixed with some meadows dominated by native species.

Within Little Blitzen Gorge, the north-facing side slopes are dominated by western juniper, mountain mahogany, and quaking aspen. The south-facing slopes are dominated by shrubs including big sagebrush, currant, and chokecherry with scattered western juniper. Understory species include Idaho fescue, bluebunch wheatgrass, and forbs.

The riparian zone is dominated by black cottonwood, willows, quaking aspen, redosier dogwood, chokecherry, and mountain alder with sedges, Kentucky bluegrass, orchardgrass, timothy, and needlegrass in the understory. The willows become the low growing, prostrate species characteristic of higher elevations. The cirques at the headwaters are dominated by shrubby cinquefoil, sheep fescue, alpine timothy, and sedge.

Sensitive plant species found in the central portion of Little Blitzen Gorge include Davidson penstemon, weakstem stonecrop, nodding melic, Cusick draba, and Hayden cymopterus. Near the headwaters, little grapefern and Copeland owlclover are found along the river. Other species found in Little Blitzen RNA/ACEC include gray moonwort, Steens Mountain paintbrush, wedgeleaf saxifrage, moss gentian, and oneflowered goldenweed.

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.

Segment C

With the exception of the springs and meadows in the headwaters basin, the south fork of the Donner und Blitzen River flows through a fairly narrow canyon. The side slopes are dominated by big sagebrush, western juniper, and Idaho fescue. The riparian zone in this segment is largely dominated by mountain alder, willows, chokecherry, and gooseberries. Sedges, timothy, Kentucky bluegrass, meadow barley, and cheatgrass are common understory species.

Nearer the headwaters, the corridor becomes a broad basin. The riparian vegetation changes as mountain alder declines and willows, such as Pacific willow, Geyer willow, and Booth willow, become dominant.

There are several stretches of stream in the segment which have unique natural area values. The river canyon between Blitzen Crossing and Mud Creek contains an excellent example of canyon riparian vegetation. Mountain alder dominates, but there is a diverse array of native shrubs. The understory is dominated by native grasses. Scapose catchfly and back sedge are sensitive plant species which occur in this stream segment.

Further upstream, near the headwaters, are two more areas of significance. The first is the small stream and meadow near Huffman Camp which contains a low elevation aspen stand, a riparian area dominated by low-growing willows, and a large meadow dominated by native species such as meadow barley, mannagrass, tufted hairgrass, Nebraska sedge, wooly sedge, and rushes. Drier areas have Nevada bluegrass, prairie junegrass, and slender wheatgrass. This area also has some low elevation aspen stands, and the uplands here are in excellent condition. This site is privately owned. At the headwaters, the springs and meadows are in fair condition; but they are important because they represent a mix of low and high elevation springs/meadow complex.

Segment D

Along Indian Creek, from the Blitzen River to the confluence of Big and Little Indian Creeks, the vegetation is similar to other low-elevation areas. There is a narrow band of riparian area dominated by mountain alder and black cottonwood with some willows and redosier dogwood. The uplands contain western juniper, mountain mahogany, and big sagebrush with Idaho fescue in the understory.

Near the bend in Big Indian Gorge, extensive mountain mahogany communities occur on both the north and south-facing slopes. In these communities, mountain mahogany has a variety of understory and associated species including mountain snowberry, bluebunch wheatgrass, Idaho fescue, and blue wildrye. In some places, quaking aspen and western juniper are also community components.

In Big Indian Gorge, quaking aspen is common in the riparian zone. Small linear springs dominated by rushes and sedges occur adjacent to the stream. As the riparian bottom

becomes wider, it is dominated by willows, quaking aspen, and black cottonwood with fewer understory shrub species. There are also areas of floodplain meadows with sedges, clover, and cinquefoils. The uplands are dominated by mountain big sagebrush with a variety of needlegrasses and Idaho fescue in the understory.

Near the headwaters, Big Indian Creek passes through a very narrow canyon where the riparian zone is dominated by willows. At the headwaters, linear springs run parallel to the slope. These springs are dominated by sedges and many forb species. Gray moonwort, Copeland owlclover, and slender gentian are sensitive plant species found in this area. The uplands are dominated by mountain mahogany, mountain snowberry, and mountain big sagebrush with an understory of Thurber needlegrass.

The cirques at the head of the Gorge contain alpine ponds and moist areas with Bolander quillwort (a sensitive plant species), mountain sedge, tufted hairgrass, and rushes being common species. The drier uplands contain sheep fescue, alpine timothy, and golden sedge among many other plant species.

The cirque on the upper north rim of Big Indian Gorge contains many sensitive plant species including grapeferns, gray moonwort, new sedge, weakstem stonecrop, sierra spring-beauty, Davidson penstemon, alpine lily, and oneflowered goldenweed. In the headwall area, moss gentian, wedge-leaf saxifrage, Steens Mountain paintbrush, Cusick draba, and Hayden cymopterus occur.

Within Big Indian Gorge, unique natural areas of particular interest include the mahogany stands near the bend in the gorge and the headwater meadows and upper cirque, both of which have numerous sensitive plant species and unique vernal ponds.

Segment E

Little Indian Creek has some of the most diverse riparian area in the river corridor. From its confluence with Big Indian Creek for about 2 miles upstream, the narrow canyon riparian habitat has mountain alder, western birch, and black cottonwood as the dominant species. Understory shrubs include chokecherry, redosier dogwood, serviceberry, and black hawthorn. There are also some unique species such as ladyfern, swordfern, and creambush oceanspray which are much more common west of the Cascade Mountains.

Where the canyon begins to widen, the riparian zone is dominated by willows and contains numerous wet areas created by a combination of large perennial springs and beaver ponds. These areas are dominated by Nevada rush, wooly sedge, and mountain sedge and are in good ecological condition. Other common species include monkshood, groundsel, and false-hellebore. Grapeferns were also found in these wetlands. The north slopes contain large stands of quaking aspen which intergrade with these willow/riparian areas and contain blue wildrye, horsemint, and bearded wheatgrass in the understory.

On the uplands, mountain big sagebrush dominates the side slopes with threadleaf sedge, horsemint, paintbrush, and needlegrasses in the understory. Mountain snowberry is often codominant. Higher up in the upper canyon on the south-facing slopes, service berry, oceanspray, chokecherry, and mountain mahogany are a part of this mountain big sagebrush community as well as numerous forb and grass species. These slopes are a high quality example of this community type.

The headwaters and cirques contain many diverse and unusual alpine and subalpine communities. Often they are dominated by Nevada rush, Jones sedge, and tealeaf willow. Mountain sedge, beaked sedge, and many other species are also present. The north-facing slopes in this area contain large stands of quaking aspen. Grapeferns were found along the creek and Steens Mountain paintbrush was found in the upper headwaters.

Within Little Indian Creek, 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.

Segment F

Much of Fish Creek flows through a narrow, steep-walled canyon and the plant communities reflect this environment. From its confluence with the Blitzen River upstream to Corral Creek, the south-facing slopes are dominated by western juniper and big sagebrush. On the north-facing slopes, western juniper is dominant at lower elevations but is replaced by mountain mahogany and quaking aspen as the elevation in the canyon increases. In this stretch, the riparian zone is very narrow with willows and redosier dogwood being the common dominants and black cottonwood occurring occasionally. Understory species include bluegrasses, needlegrasses and sedges. Back sedge, a sensitive plant species, occurs in this stretch.

From Corral Creek to above Little Fish Creek, the stream gradient is high and the riparian zone remains very narrow. However, the canyon side slopes are not as steep here as they are in the lower elevation stretches. Black cottonwood, willows, and redosier dogwood dominate the riparian zone. The south-facing uplands are dominated by western juniper with mountain mahogany, mountain big sagebrush, basin wildrye, and bluebunch wheatgrass. North-facing slopes are

Blitzen River above Page Springs Campground.

dominated by quaking aspen with mountain big sagebrush, mountain snowberry, and Idaho fescue in the understory. This portion of Fish Creek, from Corral Creek to the headwaters, is primarily privately owned.

About 2 miles above the confluence with Little Fish Creek, Fish Creek Canyon widens out into a basin containing large meadows and a number of beaver ponds. The series of beaver dams cover approximately one-half mile of stream within this section. These meadows and wetlands are dominated by bluegrasses, sedges, and a large number of forbs. The riparian habitat in this area is entirely dominated by willows. Quaking aspen forms extensive stands on the north-facing slopes. South-facing slopes are dominated by mountain snowberry, mountain big sagebrush, and serviceberry with mountain brome, Columbia needlegrass, and shrubby buckwheat in the understory. Short sections of Fish Creek are intermittent.

At the headwaters of Fish Creek are meadows which are dominated by tufted hairgrass, alpine timothy, rushes, and sedges. Low-growing willows also occur in places. The uplands and drier areas are dominated by needlegrasses, oniongrasses, and others.

Numerous sensitive plant species occur in the upper Fish Creek drainage. These include Cusick horsemint, least rush, nodding melic, Drummond willow grapeferns, gray moonwort, sierra onion, slimleaf onion, and Davidson penstemon.

Along Fish Creek, areas with unique natural values include the meadows and extensive aspen forests above Little Fish Creek and the meadows at the headwaters.

GRAZING MANAGEMENT - LIVESTOCK AND WILD HORSES

There are five grazing allotments within or adjacent to the Blitzen River and its tributaries. The allotments are Frazier Field, Hardie Summer, Otley Brothers, Fish Creek-Big Indian, and South Steens. Refer to Map 5 on page XIII which shows the river and the grazing allotments.

Portions of the Blitzen River and its tributaries are within the South Steens Wild Horse HMA. The HMA is 252,000 acres of public lands with an estimate of 178 horses within the HMA.

Allotment	Season of Use	Acres Public	Acres Private	AUMs	Current Management	AMP
Frazier Field	04/01 - 10/31	28,754	1,173	2,115	Rest-rotation	Yes
Hardie Summer	0/.01 - 09/30	1,232	10,340	413	Deferred	Yes
Otley Brothers	04/16 - 10/31	27,618	30,588	3,654	Continuous seasonal High intensity Short duration	To be completed 1993
Fish Creek/ Big Indian	04/16 - 09/30	16,650	14,479	1,410	Continuous seasonal	1993
South Steens	04/16 - 10/31	230,771	158,285	21,197	Continuous seasonal	1992

Segment A

From Page Springs Campground to Big Springs, on both sides of the river, livestock and wild horses are excluded from the river riparian zone by fencing and topography (approximately 6.5 miles). This portion of Segment A is within the Frazier Field Allotment, which is on both sides of the river to the confluence of the Blitzen River with Fish Creek. On the east side of the river, for the remainder of this portion of Segment A, is the Big Springs Pasture of Fish Creek-Big Indian. On the west side of the river is the Frazier Field Allotment. The only livestock and wild-horse use within the river corridor is this portion of Segment A in the uplands along the canyon rim.

From the Big Springs area south to approximately Tombstone Canyon, cattle and wild-horse access is restricted by topography; and, therefore, there is no use within the riparian zone. Again, the only use within the corridor by cattle and wild horses is in the uplands along the rim of the canyon (approximately 5.5 miles). This portion of Segment A is within the Big Springs and Dry Creek Pastures of Fish Creek-Big Indian Allotment. On the west side of the river is the Steens Pasture of South Steens Allotment.

The southern portion (.75 miles) of this segment of the river has limited access to livestock and wild horses again due to topography. In this area, there are a few trails on both sides of the river where animals can gain access but utilization in the corridor is light.

On the east side of the river is the Big Springs and Dry Creek Pasture of the Fish Creek-Big Indian Allotment. This pasture is presently grazed by 255 cattle from May 15 to June 15. Timing of use may vary by as much as 2 weeks from year to year. Livestock use from this pasture is along the canyon rim in the uplands. Utilization is light within the river boundary.

On the west side of the river is part of the South Steens Allotment (Steens Pasture). This pasture contains 142,728 acres of public lands with approximately 50,000 acres of private lands. There are no fences or topographic barriers to control cattle or wild-horse distribution within this pasture.

Wild-horse use is scattered throughout the pasture with some horses staying year around in established areas. Others move to the higher elevation in the pasture as forage cures.

Cattle use in this pasture is continuous seasonal. The cattle are distributed in the lower elevations and move to higher elevations as forage cures. In the portion of Steens pasture that contains Segment A, livestock use averages approximately 1,100 cattle from May 1 to July 1. Utilization within the river boundary is light.

Segment B

From the headwaters of the Little Blitzen River to the mouth of the Gorge (approximately 7 miles), livestock and wild-horse use is excluded by fencing. From the mouth of the gorge west approximately 1 mile, the river is within the Little Blitzen Pasture of the Fish Creek-Big Indian Allotment. This pasture is grazed with 255 cattle 2 weeks during June. Monitoring studies indicate moderate utilization levels within this pasture.

From the Little Blitzen Pasture west boundary fence, the river is within the Little Blitzen Meadows Pasture of the Fish

Creek-Big Indian Allotment for approximately 3.5 miles. During the month of October, after the cattle are brought off of the mountain, the meadows are grazed by 485 cattle. Monitoring studies indicate heavy utilization levels within this pasture. West of the Riddle Brothers Ranch to the confluence with the Blitzen River, livestock use is excluded by fencing (completed the summer of 1991) and topography on the north for approximately 2.5 miles. There is no wild-horse use along this portion of the Little Blitzen River.

Segment C

From the confluence of the south fork of the Blitzen River with the Little Blitzen River, upstream for approximately 3.5 miles, cattle graze the Newton Cabin Pasture, which is in the Fish Creek-Big Indian Allotment, and have access from the east. Cattle and wild horses from the Steens Pasture, which is in the South Steens Allotment, have access from the west.

Currently, the Newton Cabin pasture is grazed by 255 cattle for the month of July. The pasture is large (8,563 acres) with rough topography and heavy juniper cover. There is some wild-horse use in this pasture.

Monitoring studies indicate heavy to severe utilization along this 3.5-mile stretch. The adjacent uplands in both allotments show light utilization.

As discussed, the remainder of this segment on both sides of the river is within the Steens Pasture of the South Steens Allotment. In this portion of the river are meadows of the headwaters and larger riparian zones with gentle slopes. Cattle and wild horses concentrate in the meadows along the river as well as the meadows of the tributaries to this segment. Cattle numbers vary from year to year, and timing of use can vary by 2 to 3 weeks. This pasture averages 3,600 cattle. A portion of these animals have access to the river in early June. Most of the cattle summer east of the river from July 1 through September. Often stragglers remain into October. Through the summer and early fall, the cattle are distributed throughout the Mud Creek-Ankle Creek basin and Deep Creek along the riparian zone. Monitoring studies indicate heavy to severe utilization levels in this segment of the river corridor and tributaries. The uplands have slight to light utilization levels.

Monitoring studies estimate that 40-50 wild horses graze this portion of the pasture during the growing season and fall. These animals also graze in the riparian zones during this period.

Segment D

From its headwaters to the mouth of Big Indian Gorge (approximately 6 miles), livestock and wild-horse use has been excluded by fencing the mouth of the gorge. The remaining 5.5 miles of this segment is within the Newton Cabin Pasture of the Fish Creek-Big Indian Allotment. The pasture is grazed as described under Segment C. Cattle have free access to Indian Creek while in the pasture. Monitoring studies indicate heavy to severe utilization levels in this section. Upland utilization levels are light to moderate. Some wild horses graze this portion of Indian Creek. Monitoring studies indicate that in 1990 approximately 20 horses had access to this section of Indian Creek.

Segment E

This is the 4.0 mile segment of Little Indian Creek from its headwaters to its confluence with Big Indian Creek. This segment has access by cattle from the Steens Pasture of South Steens Allotment and from the west by cattle from the Newton Cabin Pasture of Fish Creek-Big Indian Allotment. Due to topography, very few cattle from either of these allotments access the drainage. Utilization data from monitoring studies is unavailable for this drainage. However, from observations by staff, utilization levels are slight to light in this segment. Wild horses could access the drainage from the south, but there is no observation of wild-horse use in this drainage.

Segment F

The majority of the upper 8 miles of Fish Creek is in private ownership, most of which is unfenced from the public land. Access by cattle to the upper reaches of the creek is available from the south through the Cold Springs Pasture of the Fish Creek-Big Indian Allotment. This pasture is grazed by 480 cattle from mid-July to mid-September. Stragglers graze the area into October.

From the north and east, cattle from the Mountain Top Pasture of Otley Brothers Allotment also have access to the drainage. The Mountain Top Pasture has 500 cattle grazing from July 1 to September 15.

Much of the private land in Fish Creek is leased for sheep grazing. Through an exchange-of-use agreement with the BLM, currently the sheep graze the private and public lands below the headwaters of Fish Creek in the Cold Springs Pasture. From June 15 to September 1, there are 1,000 sheep which graze this area. They are not to graze the private and public lands in the headwaters of Fish Creek.

There is no wild-horse use in this segment. Monitoring studies indicate heavy to severe utilization in the riparian area along this portion of the Creek.

The lower 6 miles of Fish Creek have two grazing allotments on the north. Approximately 2 of the 6 miles is in the Hardie

Summer Allotment. Most of this portion of the drainage is privately owned. The Hardie Summer Allotment is on a deferred grazing system with use by 450 cattle from July 1 to October 30. The remaining access from the north to the creek is within the Frazier Field Allotment which is grazed on a 4-pasture, rest-rotation system with 400 cattle from April 1 to November 30. Topography and fencing keep livestock out of the river bottom.

On the south, access is available from the Cold Springs and Upper Dry Creek Pastures of Fish Creek-Big Indian Allotment. Four hundred cattle graze these pastures from June 1 to September 15.

No monitoring information on utilization is available for this 6-mile stretch. However, the lower 3 miles, to the confluence with the Blitzen River, is steep walled and narrow with no livestock or wild-horse use on this portion of the creek.

WILDLIFE

The Wild and Scenic River Corridor contains a wide diversity of wildlife habitat with over 250 species of amphibians, reptiles, birds, and mammals found in the area (Refer to Appendix C). The Blitzen River and its tributaries are adjacent to the extensive wetlands found on the nearby Malheur National Wildlife Refuge.

Species in the area that are listed as Endangered or Threatened include the bald eagle (Federal and State Threatened) and American peregrine falcon (Federal and State Endangered).

Other species that are being considered for Threatened or Endangered Species status by the USFWS or Oregon Department of Fish and Wildlife (ODFW) are species that are considered rare and found in Appendix D.

Game birds include chukar, valley quail, mourning dove, sage grouse, common snipe, and waterfowl. Pheasants occur near the Page Springs Campground within a small area. Nesting raptors are 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 are uncommon. Turkey vultures and ravens nest in cliffs along the deep canyons. American peregrine falcons are rarely observed as migrants.

Game mammals include mule deer, pronghorn antelope, Rocky Mountain elk, California bighorn sheep (listed by the USFWS as a Candidate 2 species), and cougar. The ODFW believes at least 30 miles of Segments A, B, D, and E are potential summer and winter bighorn sheep range.

Nongame mammals include golden-mantle ground squirrel, canyon mouse, deer mouse, harvest mouse, several species of bats, coyotes, bobcat, and many other species. Beaver are found in all stream segments.

Amphibians and reptiles include spotted frog, western rattlesnake, gopher snake, sagebrush lizard, western fence lizard, and others.

A 1991 inventory of 63 miles of riparian habitat on public lands in the river corridor found 8.1 miles (12.9 percent) in poor condition, 17.7 miles (28.1 percent) in fair condition, 25.1 miles (39.8 percent) in good condition, and 11.0 miles (17.5 percent) in excellent condition. One and one-tenths mile (1.7 percent) was not inventoried (See the table on page 46).

There were 555 acres of riparian habitat within the river. There are over 35 river miles of riparian habitat in good or excellent condition. Part of this habitat is in rugged, rocky country where livestock never graze.

Poor and fair condition habitat has been strongly influenced by historic livestock grazing that reduced woody riparian species. For example, the lower Blitzen River from Fish Creek downstream to Page Springs was heavily grazed by livestock until 1981 when this part was fenced to remove livestock. This portion of the Blitzen River has improved markedly, but woody riparian species have not increased adequately to provide the density and height of good riparian habitat.

Woody riparian plants provide stream shading and favorable nesting and feeding sites for many nongame birds. Littlefield (1987) found only four pairs of nesting yellow warblers (per transect) in poor condition riparian habitat with sparse woody vegetation while he found over 20 pairs (per transect) in better condition habitat on the Little Blitzen River.

The yellow warbler is considered an indicator species, being more numerous in areas with high shrub volume with little or no livestock use (Taylor and Littlefield, 1986). Other nongame birds using the river corridor include belted kingfisher, northern flicker, western wood peewee, western kingbird, and many other species.

Segment A

Bald eagles are winter-spring residents with sightings up the Blitzen River Canyon. A winter roost may exist in this area.

Nesting waterfowl make light use of the area with most of the nesting by common mergansers and dabbling ducks. Some nesting by Canada geese occurs. Sub-zero temperatures freeze canals and ponds on the Malheur National Wildlife Refuge and waterfowl using the refuge move onto the lower portion of Segment A. Most of these birds are mallards,

bufflehead, common goldeneye, and Canada geese. Chukar and valley quail are found throughout this segment. Mourning doves nest in the area.

Song birds may use the Blitzen River Canyon and the Little Blitzen Canyon as a migration route (Littlefield 1987). Cougar may use this area for seasonal movements.

The lower portion of the Blitzen River, from the mouth of Fish Creek downstream, is deer winter range. Occasional use by wintering Rocky Mountain elk also occurs.

The condition of riparian habitat is poor from Page Springs Campground upstream to the mouth of Fish Creek. Cattle have been excluded from this section since 1981. Streambank stability and willow density have increased markedly with protection. However, this section is still lacking in woody structure and in woody species diversity which is found in better condition riparian habitat. Beaver use this area extensively, reducing the density of willow and alder slowing plant succession.

Upstream from the mouth of Fish Creek the canyon becomes narrow and rugged. From Big Springs upstream to the mouth of Tombstone Canyon, riparian habitat is in excellent condition. Most of this section has a dense riparian shrub and tree cover with stable streambanks. Except for a few small areas, livestock cannot graze this area due to the difficult terrain.

Riparian habitat is in poor condition along 4.3 miles of stream, in fair condition along 2.1 miles, in good condition along 2.1 miles, and in excellent condition along 5.7 miles in this segment.

Segment B

The Little Blitzen River, from its mouth to the Riddle Brothers Ranch, has serious streambank erosion. The density of riparian shrubs and trees, perennial herbaceous species, is far below the site potential.

Some chukar use occurs in this area.

Upstream from the Riddle Brothers Ranch woody cover increases. Near the ranch, Littlefield (1987) found 67 bird species using the riparian zone or adjacent areas.

Abundant aspen, black cottonwood, and western juniper provide habitat for cavity nesting birds, such as northern flicker, red-naped sapsucker, and downy woodpecker in large portions of the Little Blitzen River Gorge and wooded areas above the rim.

The quality of riparian habitat along the Little Blitzen River is 1.7 miles in poor condition, 6.5 miles in fair condition, and 5.6 miles in good condition.

Above the canyon rim, in the uppermost portion of this segment, is a small area of subalpine dominated by sheep fescue. Black rosy finch nest in the subalpine area, a rare occurrence in Oregon. One prairie falcon eyrie has been located on the rim of the gorge. Pika may be found at the head of the gorge. California bighorn sheep use the head of the Little Blitzen Gorge following the recreation season.

The Little Blitzen River Gorge is deer summer range with occasional use by elk. Pronghorn antelope and sage grouse use some of the uplands above the canyon rims as summer range.

Segment C

This segment varies greatly in riparian habitat quality. A long rocky section between the confluence of the Little Blitzen River and the south fork of the Blitzen River upstream to the mouth of Indian Creek, is in good condition. High numbers of songbirds use the dense mountain alder/redosier dogwood plant community. Upper reaches of this segment have a more gentle topography with a degraded, sparse woody riparian plant community in poor and fair condition. Some use by sage grouse occurs in this upper portion. Deer summer within this area with most of the use upstream from the confluence with Indian Creek. Occasional use by elk also occurs during the summer.

The riparian habitat condition is 2.1 miles in poor condition, 5.9 miles in fair condition, and 4.6 miles in good condition.

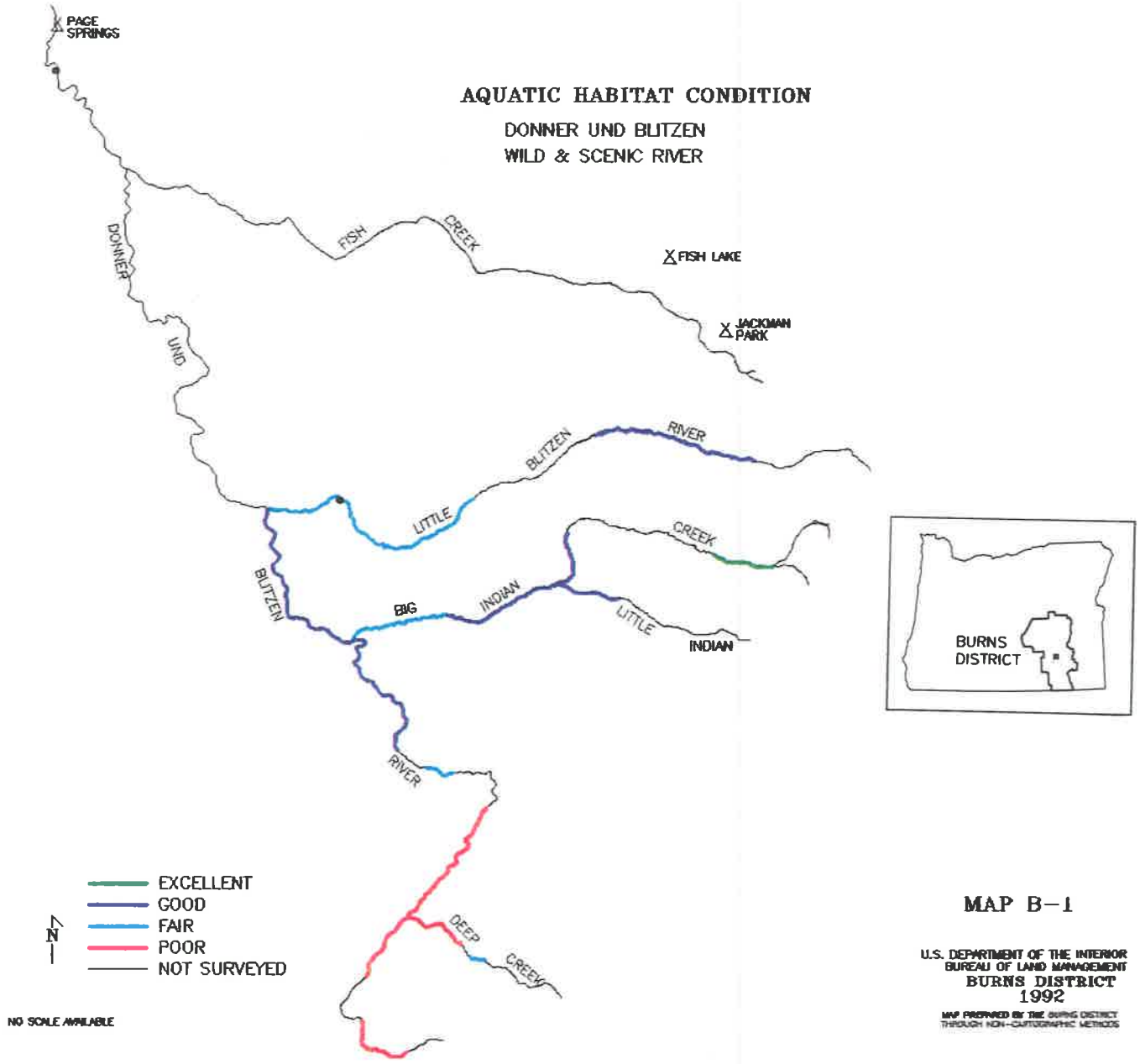
Segment D

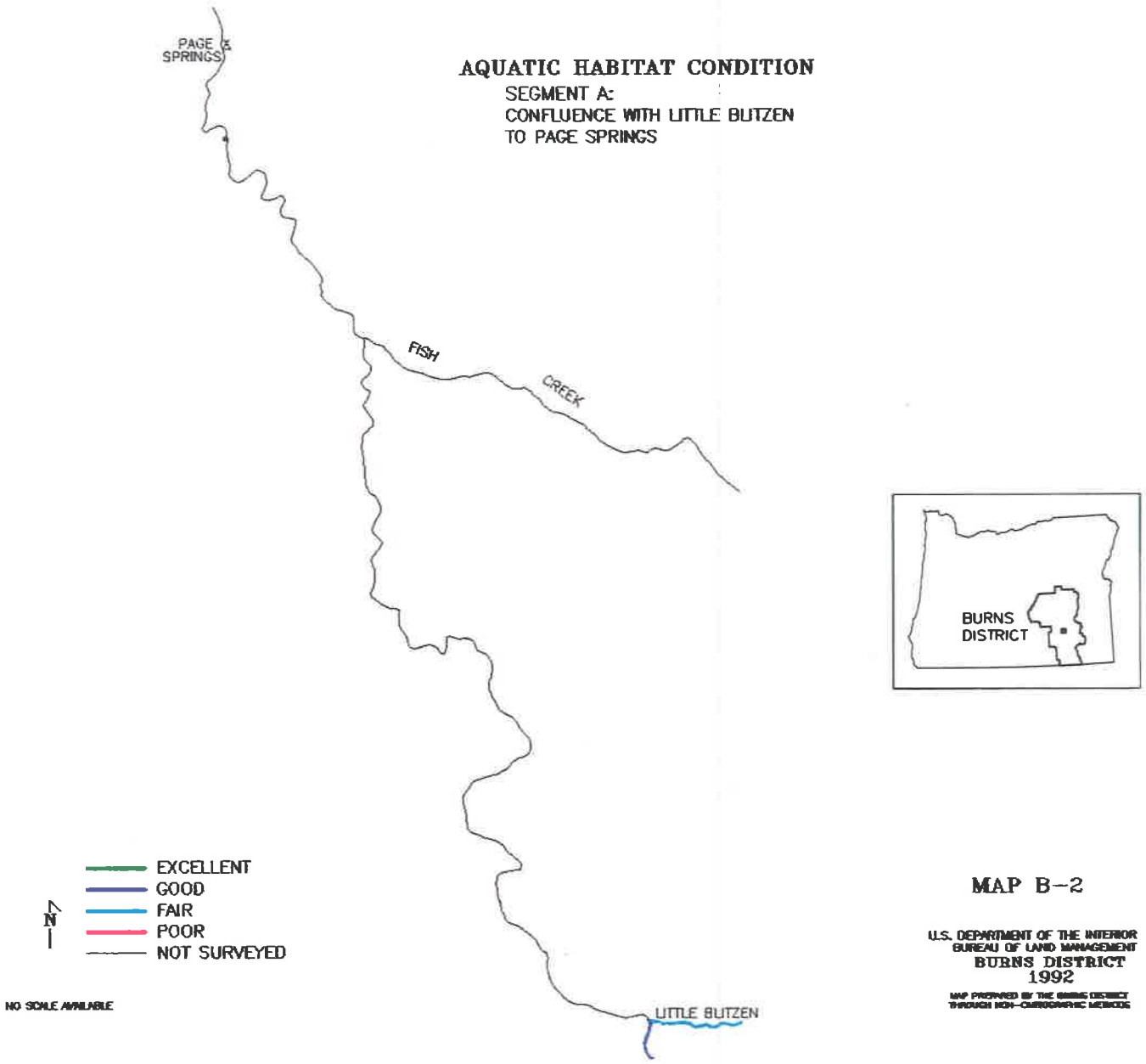
The lower reaches of Indian Creek have a fair to good riparian cover. The upper portion of Big Indian Creek has a riparian zone in good condition. The condition of riparian habitat within this segment is 3.2 miles in fair condition and 8.7 miles in good condition.

The Big Indian Canyon is deer summer range. Trophy bucks are often observed on the ridge between Big Indian Canyon and Little Indian Canyon. Some elk use occurs from spring through fall. Pika may be found at the head of Big Indian Canyon.

Segment E

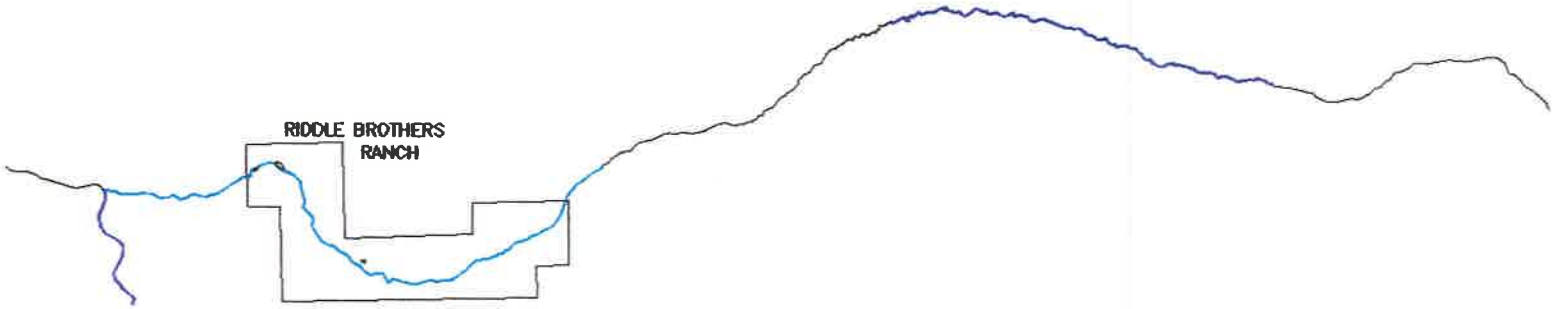
Riparian habitat in the Little Indian Canyon is in good condition along 2.5 miles of stream and in excellent condition along 1.6 miles. Extensive aspen cover and canyon slopes


PAGE SPRINGS
AQUATIC HABITAT CONDITION
DONNER UND BLITZEN
WILD & SCENIC RIVER
DONNER
FISH
CREEK
FISH LAKE
JACKMAN PARK
UND
BLITZEN
RIVER
LITTLE
BLITZEN
CREEK
BIG
INDIAN
LITTLE
INDIAN
RIVER
DEEP
CREEK
BURNS DISTRICT
EXCELLENT
GOOD
FAIR
POOR
NOT SURVEYED
N
NO SCALE AVAILABLE
MAP B-1
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992
MAP PREPARED BY THE BURNS DISTRICT
THROUGH NON-CARTOGRAPHIC METHODS


AQUATIC HABITAT CONDITION
SEGMENT A:
CONFLUENCE WITH LITTLE BUTZEN
TO PAGE SPRINGS
PAGE SPRINGS
FISH
CREEK
LITTLE BUTZEN
BURNS DISTRICT
EXCELLENT
GOOD
FAIR
POOR
NOT SURVEYED
N
NO SCALE AVAILABLE
MAP B-2
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

AQUATIC HABITAT CONDITION

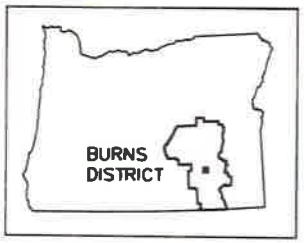
SEGMENT B:
LITTLE BLITZEN RIVER



EXCELLENT
GOOD
FAIR
POOR
NOT SURVEYED

N

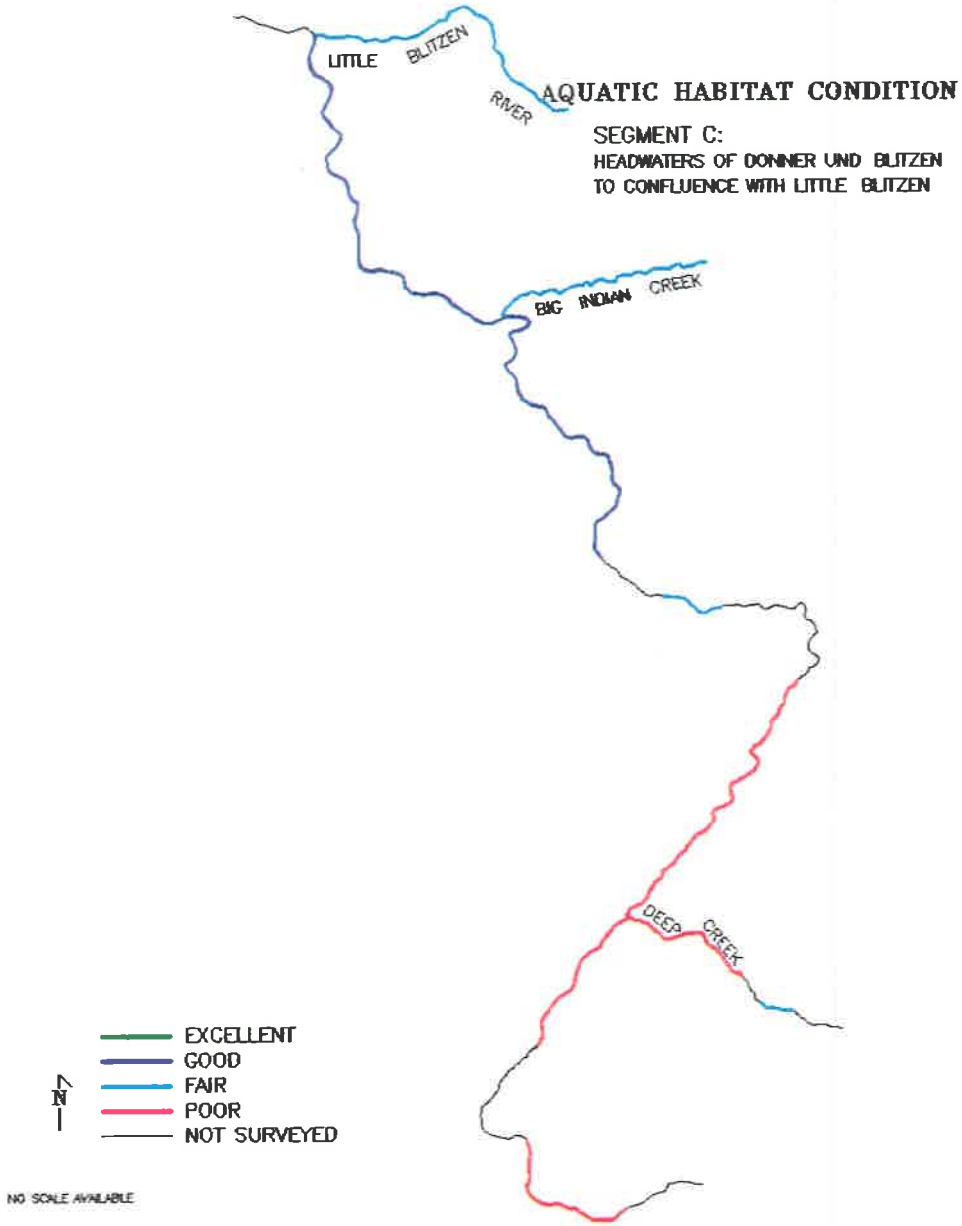
NO SCALE AVAILABLE



MAP B-3

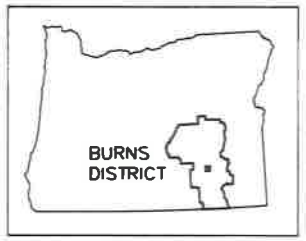
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT THROUGH NON-CARTOGRAPHIC METHODS



AQUATIC HABITAT CONDITION

SEGMENT C:
HEADWATERS OF DONNER UND BLITZEN
TO CONFLUENCE WITH LITTLE BLITZEN



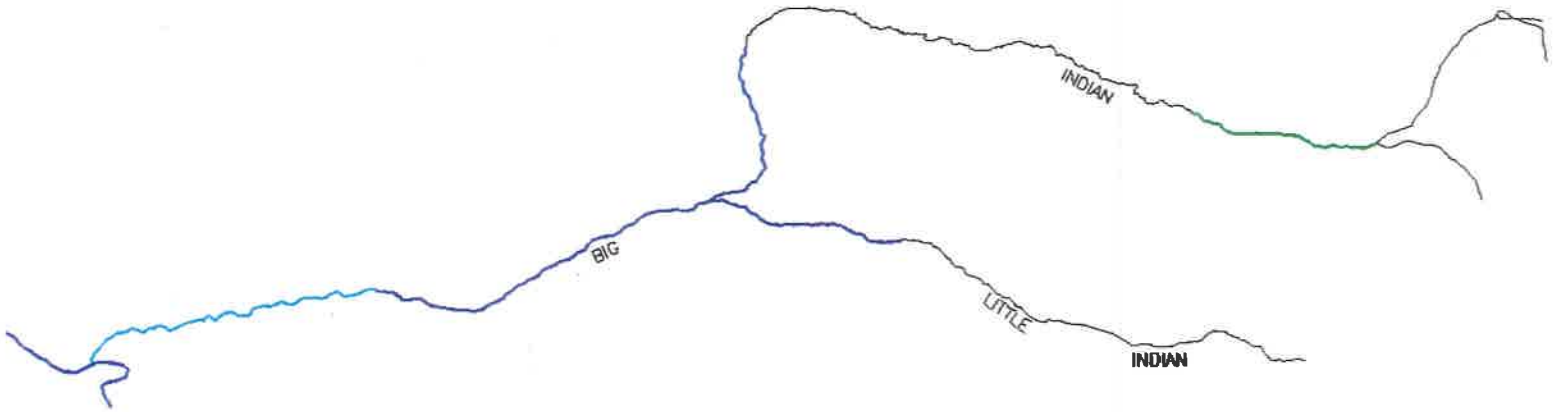
MAP B-4

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT
THROUGH NON-CARTOGRAPHIC METHODS

AQUATIC HABITAT CONDITION

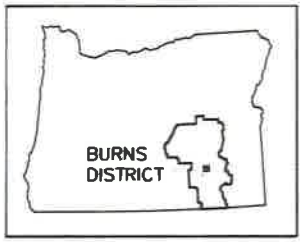
SEGMENT D: BIG INDIAN CREEK
AND
SEGMENT E: LITTLE INDIAN CREEK



EXCELLENT
GOOD
FAIR
POOR
NOT SURVEYED

N

NO SCALE AVAILABLE



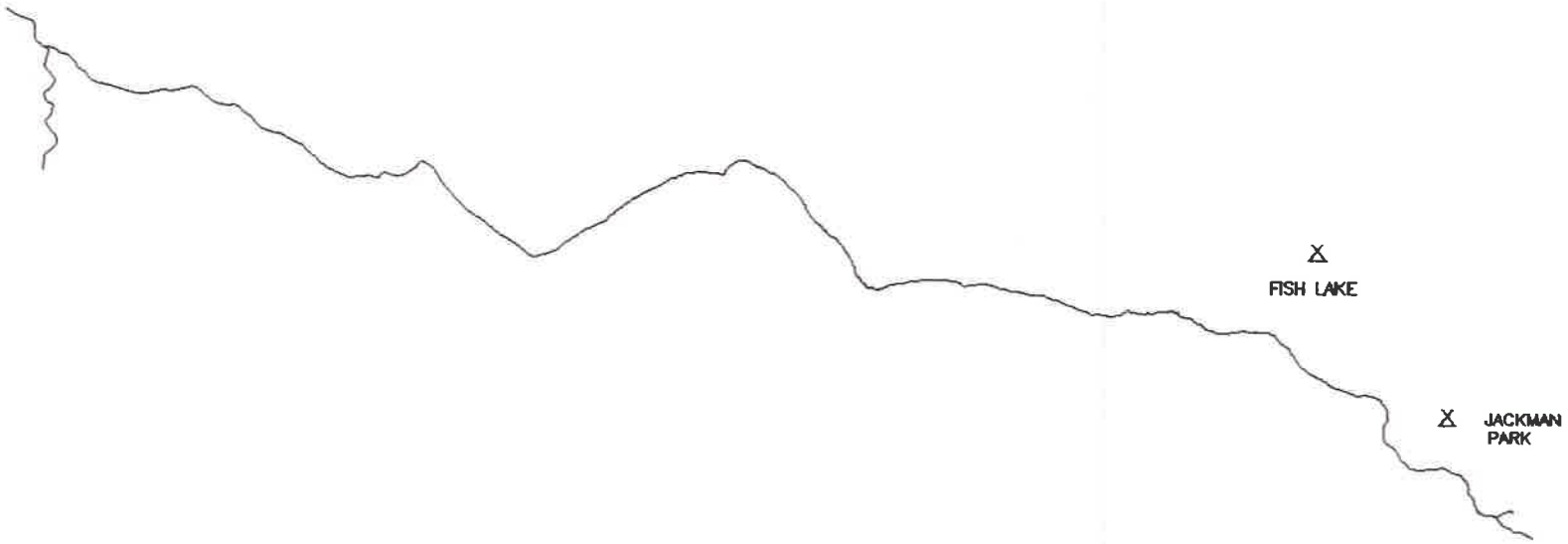
MAP B-5

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT
THROUGH NON-CARTOGRAPHIC METHODS

AQUATIC HABITAT CONDITION

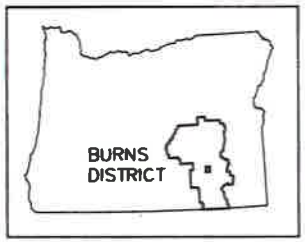
SEGMENT F: FISH CREEK



EXCELLENT
GOOD
FAIR
POOR
NOT SURVEYED

N

NO SCALE AVAILABLE



MAP B-6

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT THROUGH NON-CARTOGRAPHIC METHODS

provide good habitat for summering deer. Occasional use by summering elk also occurs. California bighorn sheep use the head of Little Indian Canyon following the recreation season. Pika may also be found in the head of the gorge.

Segment F

Riparian habitat on public lands is in good condition along 1.6 miles and in excellent condition along 3.7 miles of the stream. Inventory has not been completed on 1.1 miles of public lands.

Extensive aspen covering the north-facing slopes along upper Fish Creek provide good habitat for summering deer. The lower 4 miles of Fish Creek is deer winter range but much of this is impassible to deer due to steep, rocky terrain. Light elk use occurs.

The large beaver dam complex on private property in the upper part of Fish Creek is used by nesting dabbling ducks.

FISHERIES

Aquatic habitat inventory was conducted on approximately 31 miles of the Donner und Blitzen River system during the summer of 1991. Stream habitat features were identified, quantified, and rated for reaches along the stream segments identified. Inventory data described present habitat condition for aquatic species and vulnerability of the aquatic habitat to impacts associated with land management activities. The vegetative component of the aquatic habitat inventory has been included in the Vegetative Section (refer to page 23).

Segment A

The mainstem of the Donner und Blitzen River was not inventoried in 1991. Inventories will be conducted during the 1992 season.

Segment B

Stream habitat in lower reaches of the Little Blitzen River is rated as good.

Canopy or cover for aquatic species in the lower reaches was poor but improved in the upper reaches. Lower reaches of the stream were predominantly riffle or rapid with a low percentage of pools. Pools were often of poor quality. Upper reaches had improved in-stream structure, with more numerous pools of higher quality.

The stream channel was morphologically well defined, generally stable, and rated fair to good. Bank stability was fair in the lower reaches, improving to good in the upper reaches. Bank erosion was common with many cut and eroding banks observed in areas accessible by livestock. Bar formation and siltation were common in pool areas and backwaters.

Bottom materials provided sufficient spawning substrate; however, only 5 to 25 percent of the channel was suitable for spawning. No migration blocks were observed in the lower reaches and water falls did limit fish migration in the upper reaches.

Stream structure and diversity ranged from fair to good in the lower to upper reaches, respectively. Boulders, tree limbs,

Riparian Habitat Condition - 1991

	Poor	Fair	Good	Excellent	Not Inventoried	Total
Segment A	4.3	2.1	2.1	5.7	0	14.2
Segment B	1.7	6.5	5.6		9	13.8
Segment C	2.1	5.9	4.6		0	12.6
Segment D		3.2	8.7		0	11.9
Segment E			2.5	1.6	0	4.1
Segment F			1.6	3.7	1.1	6.4

and large woody debris were widely distributed in the upper reaches and provided several habitat types with adequate cover. This in-stream structure was largely absent in the lower reaches.

Segment C

The south fork of the Donner und Blitzen River was surveyed from the confluence with the Little Blitzen River to the south fork headwaters. Data collected from inventory of 1.5 miles of Deep Creek, included with Segment C, was broken out in the table on page 45 for clarity. Habitat was in good condition along the initial 6.8 miles surveyed beginning at the confluence of the Little Blitzen and the south fork of the Blitzen River to the Bill Taber Cabin. From the cabin, a short reach was in fair condition (approximately 0.7 mile) while the 5.5 miles surveyed from Mud Creek to the headwaters were in poor condition.

Dense thickets provided good canopy and cover for aquatic species, good bank stability, and material for in-stream structure. Pools covered 15 to 20 percent of the channel and were generally of sufficient depth to provide good cover. The stream channel was well defined, flowing through a narrow canyon. Bottom materials were primarily rocky and large enough to provide good spawning substrate. In slow-moving water, substrates were 25 to 75 percent embedded with silt and sediment.

In upper reaches, the riparian community was severely impacted by livestock and wild-horse grazing and little canopy or cover was available for aquatic species. The main channel was less constrained in this section. Bank erosion was common and few pools existed. Bottom materials had sediments covering much of the bed area in any slow-moving water. Less than 5 percent of the channel was suitable for spawning.

Segment D

Approximately 7 miles of Indian and Big Indian Creek were surveyed from the confluence with the south fork of the Donner und Blitzen River. Overall stream habitat was in fair condition from Blitzen crossing upstream to Newton Cabin. Vegetation was dense enough to provide fair to good canopy and some cover for aquatic species. Pools were few in number, shallow, and in fair condition.

Stream channel stability was generally good with most of the channel well defined. Bank stability was fair to good in most areas but several sections had prominent cut banks.

Bottom materials were generally rocky, greater than 2 inches in diameter, and suitable as spawning substrate. Due to silt and sediment, these lower reaches were moderately embedded with most spawning substrate and in poor condition. In-stream structure and diversity was limited with little cover and few habitat types.

Stream habitat from Newton Cabin upstream to the middle of Big Indian Canyon was generally in good condition. Headwater reaches were in excellent condition.

Moderate amounts of vegetative canopy provided fair to good cover for aquatic species. Pool quality and quantity improved to good condition upstream from Newton Cabin.

Banks were well vegetated or armored with rock providing good bank stability and reducing erosion. Bottom material provided spawning substrate of adequate size and distribution. The headwater reaches did have cascades and waterfalls that impede fish migration. Stream structure and diversity were good with adequate cover and several habitat types commonly found in upper reaches.

Segment E

Stream habitat along Little Indian Creek is in good condition throughout the 1.2 miles surveyed.

Dense growth provided as much as 80 percent canopy cover for the aquatic habitat.

Banks were well vegetated and heavily armored with rock. Pools were frequent and of high quality for aquatic species. Bottom materials were primarily large boulders and cobbles. Cascades frequently formed barriers to fish migration.

Overall structure and diversity were good with excellent cover and numerous habitat types available for aquatic species.

Segment F

Fish Creek was not inventoried during 1991. Inventories will be conducted during the 1992 field season.

CULTURAL

Six portions of the Blitzen River and its tributaries were surveyed to provide basic information on the presence and general density of cultural materials near these segments. Approximately 35 river miles were inspected within the river corridor. The survey ranged in elevation from about 4,200 feet at Page Springs to nearly 8,000 feet at the head of Little Blitzen Canyon. Topography and vegetation varied throughout the river corridor. The Riddle Brothers Ranch Historic District remains uninventoried, although significant historic

Wild and Scenic River Acquatic Habitat Survey - 1991 Acquatic Habitat Condition

	Poor	Fair	Good	Excellent	Total
Segment A		Not done in 1991 survey			
Segment B		4.9	3.6		8.5
Segment C	5.5	0.7	6.8		13.0
(Deep Creek)	1.1	0.4			1.5
Segment D		2.1	3.6	1.4	7.1
Segment E			1.2		1.2
Segment F		Not done in 1991 survey			

and prehistoric resource values (and perhaps traditional resource values) are known to be present.

Cultural remains found were not extensive. These include 16 archaeological sites, 30 isolated flaked or ground stone tools, and 13 locations with historic period structures, debris, and/or tree carvings.

These areas were used by prehistoric people for subsistence pursuits, primarily hunting and plant food gathering. At present, cross-dating of projectile points can provide a rough estimate of the age of prehistoric occupation within the river corridor. The majority of tools observed during the surveys were fragmentary, but 14 projectile points were identified. The age spans for these projectiles suggest human use in the corridor was probably underway about 4,000 to 6,000 years ago, with some use as long ago as 8,000 years when ancient lakes filled the Malheur, Catlow, and Alvord basins.

Historic period uses were primarily for access and transportation associated with stockraising and homestead development.

RECREATION

Recreation Activity Preferences

Existing recreational uses occurring within the Donner und Blitzen River and its tributaries include fishing, hunting, hiking, backpacking, horseback riding, wildlife viewing, and photography. The river segments are not used for boating due to the small size of the stream. There are no competitive events held in the river corridor. The river canyons offer outstanding primitive recreation opportunities that provide a high degree of solitude and physical challenge.

Seasons and Time of Use

Due to limited vehicle access, snowpack and weather, recreational opportunities vary with the season and time of use.

The Steens Mountain Loop Road is normally open in its entirety from mid-July through October. Portions of the loop road open earlier as weather permits. A series of gates along the loop road control vehicle access.

The lower end of the river near Page Springs Campground allows for year-round access. A visitor may hike as far as they want up into the corridor from this staging area.

Party Size and Place of Origin

Please refer to page 3 under Recreational for user surveys.

Visitation Estimates

There are no exact figures on visitor use within the Blitzen River and its tributaries. There is, however, good information on visitor use for the Steens Mountain Recreation Lands of which the river system is a part.

The Steens Mountain is a destination area due to its unique resource characteristics and associated recreation opportunities. Visitors travel long distances to recreate.

These figures for visitor use from traffic counter data are for the Steens Mountain Loop Road.

	Visitors
1981	20,231
1982	16,353
1983	20,456
1984	25,300
1985	28,560
1986	37,820
1987	41,995
1988	49,327
1989	50,631
1990	46,230
1991	47,916

Recreation Setting (Recreation Opportunity Spectrum Classification)

The recreation opportunity setting is the idea that quality recreation experiences can best be assured by providing a variety of recreation opportunities. The basic idea underlying the spectrum approach is that people participate in specific recreation activities, such as fishing, camping, and horseback riding, in specific settings such as at high mountain lakes, recreation sites, or designated trails.

They do so in order to attain desired recreation experiences such as solitude, being with family and friends, or taking risks. The recreation opportunity spectrum (ROS) incorporates this thinking into a classification of recreation opportunities which extends from the primitive to the modern urban. The BLM has subdivided this spectrum into six classes: primitive, semi-primitive motorized, roaded natural, rural, and urban.

The Donner und Blitzen River and its tributaries have ROS classifications assigned to the river corridor (see Map 2 page VII).

The Blitzen River System offers outstanding primitive recreation opportunities that provide a very high degree of solitude and physical challenge.

GEOLOGY

Please refer to pages 3 and 23 for a description of the geology and landscape.

SOIL AND AIR

Soil

The soils within the river corridor were mapped by the Ecological Site Inventory crew in 1984. These soils are derived from the Steens Mountain Basalt which is about 16.4 million years old. Three distinct landforms are present in the corridor and consist of: (1) glaciated valleys, drainages, and swales, (2) canyon sides and hillsides, and (3) uplands bordering the canyons.

The soils in the valley bottoms and drainages are generally deep (40 to 60 inches) to very deep (greater than 60 inches) to bedrock and somewhat poorly to well drained. The wetter the soil, the more poorly it drains. The soils formed in alluvium and slopes range from 2 to 10 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 the soils formed in colluvium. The surface textures are usually very gravelly loams or a very stony clay loam about 10 inches thick, over clay loams, and very stony clay 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 2 to 30 percent. The surface textures range from very cobbly clay loams to extremely stony silt loams, about 6 to 8 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.

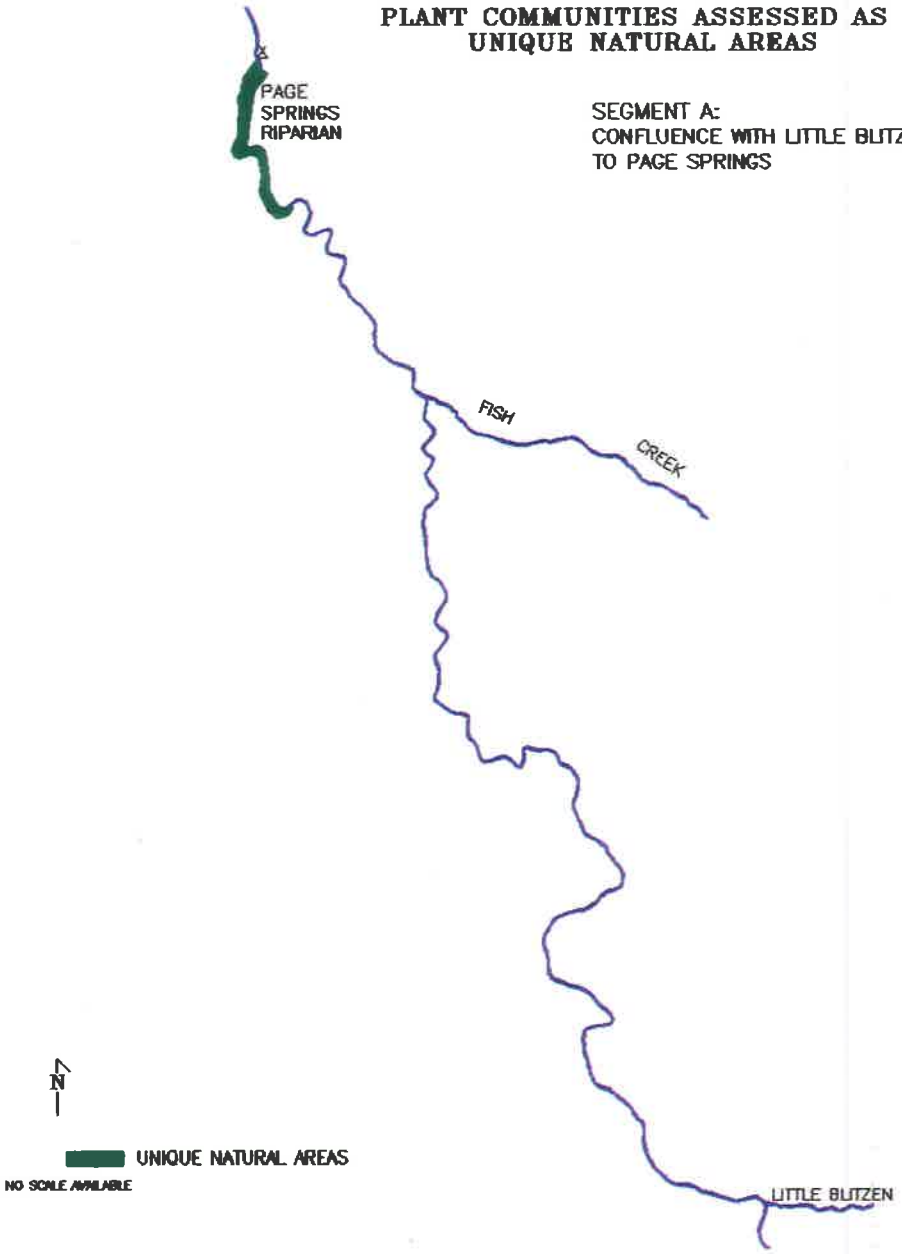
Air

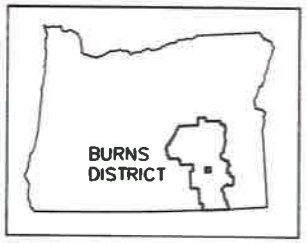
Air quality in the area is often excellent with visibility limited only by terrain. There are seasonal sources of air pollution from the smoke of range and forest wildfires and also when fields and slash piles are being burned in western Oregon.

Winds are usually upslope to the east during the day, strengthening towards the top of the Steens Mountain, and downslope and gentle during the evening.

PLANT COMMUNITIES ASSESSED AS UNIQUE NATURAL AREAS

SEGMENT A:
CONFLUENCE WITH LITTLE BLITZEN
TO PAGE SPRINGS





N

UNIQUE NATURAL AREAS

NO SCALE AVAILABLE

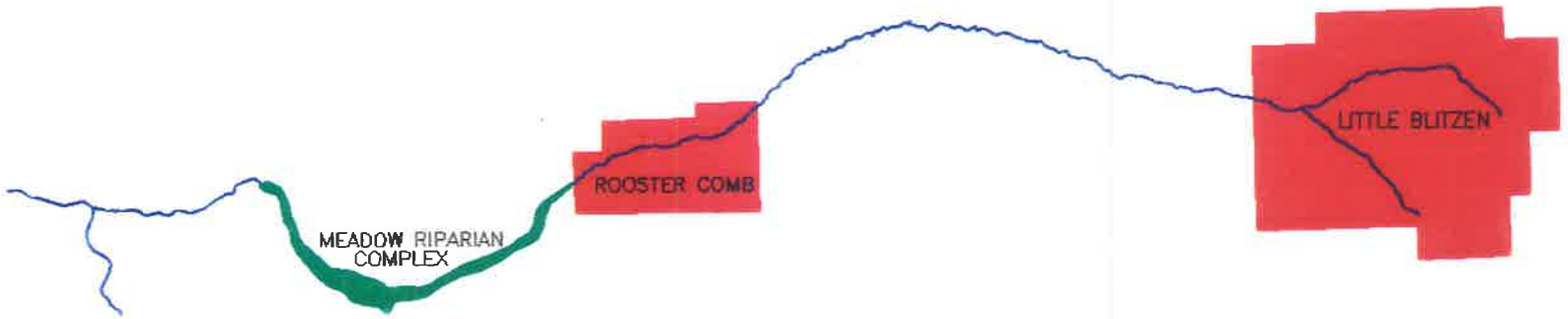
MAP C-1

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT
THROUGH NON-CARTOGRAPHIC METHODS

PLANT COMMUNITIES ASSESSED AS UNIQUE NATURAL AREAS

SEGMENT B:
LITTLE BLITZEN RIVER

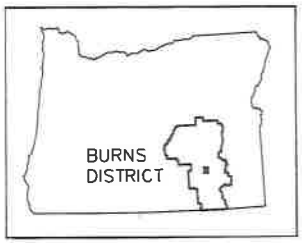


N

RNA/ACEC

UNIQUE NATURAL AREAS

NO SCALE AVAILABLE



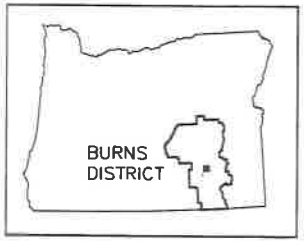
MAP C-2

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT THROUGH NON-CARTOGRAPHIC METHODS

PLANT COMMUNITIES ASSESSED AS UNIQUE NATURAL AREAS

SEGMENT C:
HEADWATERS OF DONNER UND BLITZEN
TO CONFLUENCE WITH LITTLE BLITZEN

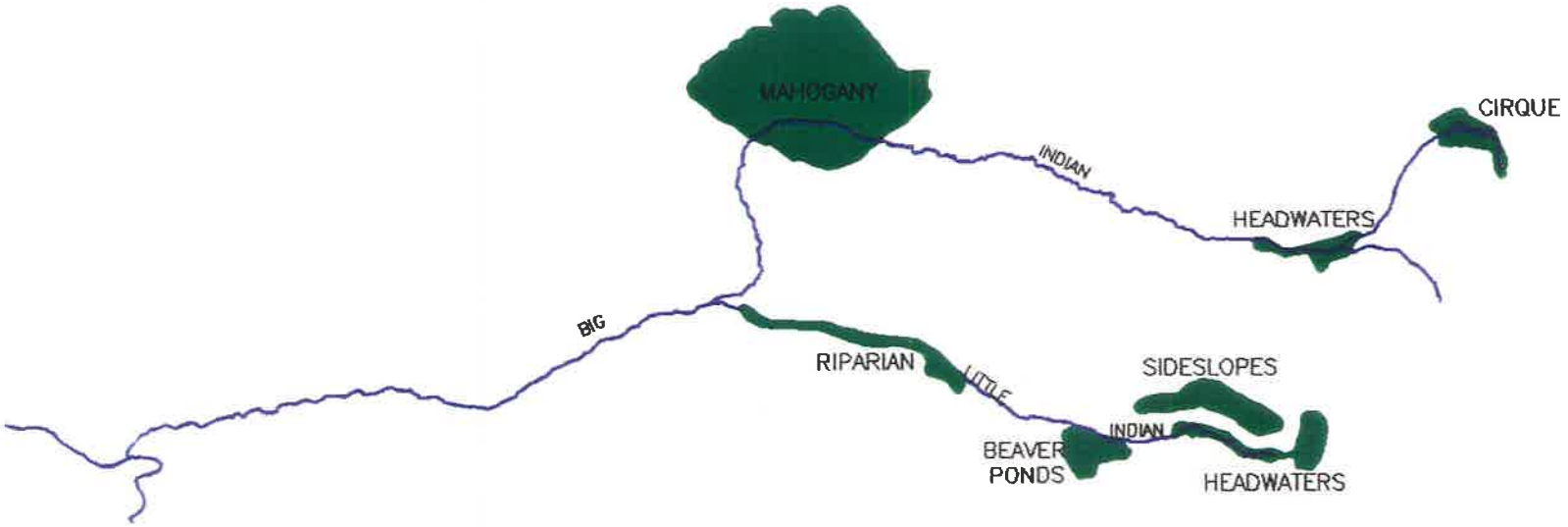


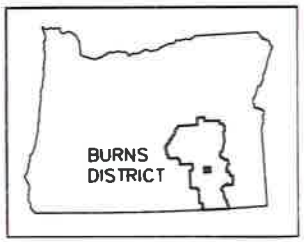
MAP C-3

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992
MAP PREPARED BY THE BURNS DISTRICT THROUGH NON-CARTOGRAPHIC METHODS

PLANT COMMUNITIES ASSESSED AS UNIQUE NATURAL AREAS

SEGMENT D: BIG INDIAN CREEK
AND
SEGMENT E: LITTLE INDIAN CREEK





N

UNIQUE NATURAL AREAS

NO SCALE AVAILABLE

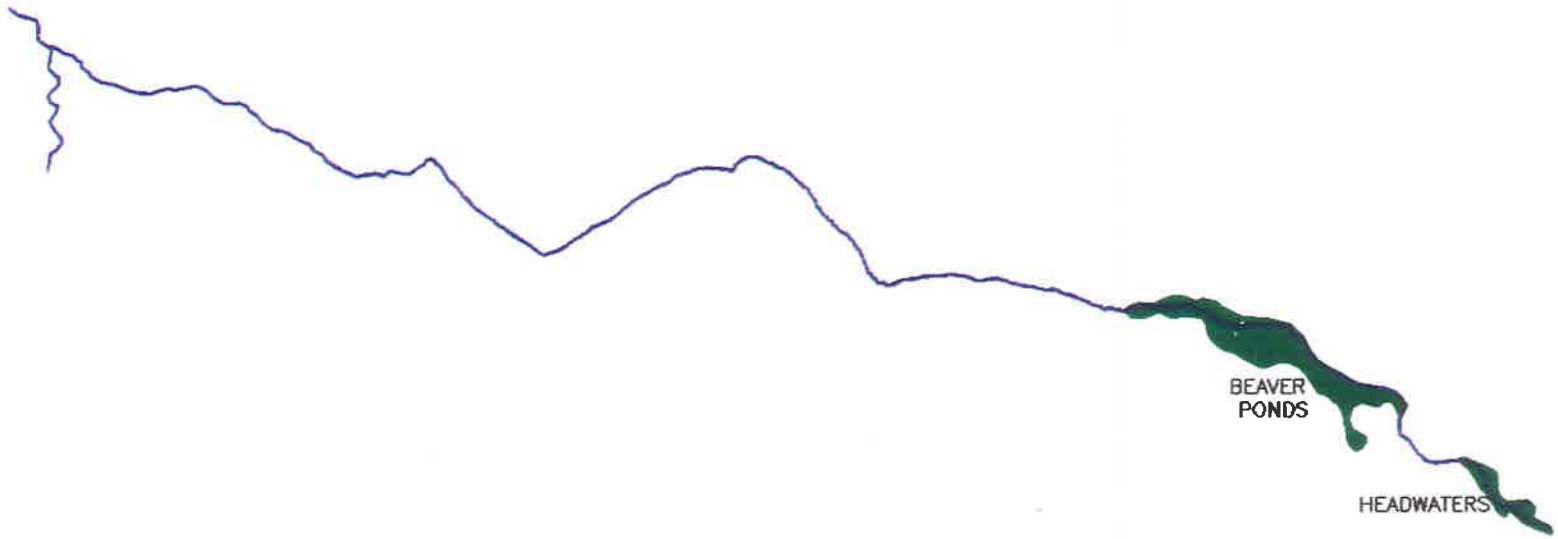
MAP C-4

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT THROUGH NON-CARTOGRAPHIC METHODS

PLANT COMMUNITIES ASSESSED AS UNIQUE NATURAL AREAS

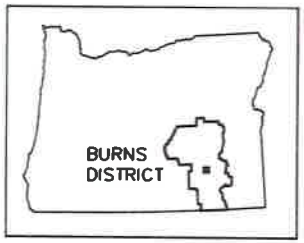
SEGMENT F: FISH CREEK



N

UNIQUE NATURAL AREAS

NO SCALE AVAILABLE



MAP C-5

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
BURNS DISTRICT
1992

MAP PREPARED BY THE BURNS DISTRICT
THROUGH NON-CARTOGRAPHIC METHODS

WATER

The BLM collects water quality information four times per year from permanent sampling stations on the Little Blitzen River (Segment B), south fork of the Donner und Blitzen River (Segment C), and Big Indian Creek (Segment D). In addition, the USGS has maintained a gauging station on the mainstem of the river just above Page Springs Campground (Segment A) since the early 1900's. Sixty-four years of discharge data and 10 years of water quality data have been collected from this sample site.

Water quantity varies greatly from year to year depending on annual precipitation. Mean discharge for the Donner und Blitzen River has ranged from 55 cubic feet per second (cfs) in 1966 to a high of 245 cfs in 1983.

Water quality varies greatly from site to site with the season of the year and land management practices in adjacent riparian and upland areas. Parameters routinely collected are air and water temperature, conductivity, total hardness, total alkalinity, pH, nitrate nitrogen, sulphates, dissolved oxygen, turbidity, color and discharge. Generally, areas with poor riparian or aquatic habitat often have associated water quality problems (see Appendix E).

The Malheur National Wildlife Refuge has the oldest and first priority irrigation rights dating back to 1872. There are several other ranches which also have irrigation rights allocated by priority dates.

These water rights were adjudicated on January 8, 1942 in a document titled, "The Decree of the Donner und Blitzen River and Tributaries of Malheur Lake." This document can be reviewed at the Harney County Courthouse.

These irrigation rights are for the Malheur National Wildlife Refuge and surrounding private ranches outside the river corridor.

When BLM acquired the Riddle Brothers Ranch, it was determined that the Riddles never filed for irrigation rights for watering their meadows on the Little Blitzen River. The Bureau filed in October 1990 with the Oregon Water Resources Department for a vested water right to irrigate the meadows along the Little Blitzen River.

This application has been rejected based on the fact that the Riddle Brothers were notified about the adjudication proceedings in January 1942 but failed to submit a claim.

In December 1990, BLM filed for a water right for the use of 2.01 cubic feet per second of water from the Little Blitzen River for irrigation of 80.4 acres of meadow land. To date, the Oregon Water Resource Department has not made a determination on the application.

MINERALS

There are no mining claims within the boundary of the Wild and Scenic River.

In their mineral survey of the WSAs within the river corridor, the USGS crews observed no mineralized or altered rocks in this area. They judged the area to have unknown potential for minerals because any mineralization would be buried beneath 2,000 to 4,000 feet of barren Steens Basalt lava flows.

Designation as a Wild and Scenic River has resulted in 19,273 acres of public land being withdrawn from mineral entry.

ENERGY AND UTILIZATION

There are no energy-related leases within the boundary of the designated Wild and Scenic River.

Due to the minimal probability that rocks capable of producing hydrocarbons exist at depth, the USGS researchers judged the area to have no or low potential for oil and gas resources throughout the corridor. Because of the presence of hot springs within the general area, they judged the corridor to have moderate potential for geothermal energy along the northwest-trending fault zone. These hot springs are located on the Malheur National Wildlife Refuge, approximately 3 miles west of the designated river corridor.

No energy resources or occurrences were identified within or adjacent to the river corridor. Geothermal resources, if found in the area, may not be of sufficient temperature or quantity for electrical energy generation.

Designation as a Wild and Scenic River has resulted in 19,273 acres of public land being withdrawn from oil, gas and geothermal energy leasing.

MILITARY OPERATIONS

The upper Donner und Blitzen River watershed is impacted by an established military training route. This route is identified as VR-1301 and is used by military aircraft under visual flight rules (visibility 5 miles or more, 3,000 foot AGL ceiling or more). Aircraft flown by the Idaho Air National Guard, using this Military Training Route (MTR), are out of Boise, Idaho. Typical aircraft flying this route are jet fighters (F16s, A6s, and F4s). They usually fly in pairs during the hours of 9 a.m. to 6 p.m. (but are not limited to this time period). Normally, activity on this MTR is less on weekends. The pilots are practicing navigation, terrain following maneuvers, and low level techniques. In the area of consider-

ation, VR-1301 has a west-to-east traverse with the centerline running between Segment F and Segment B. However, pilots are allowed 5 nautical miles on either side of the centerline. Most sightings indicate that pilots favor Segment B. These aircraft travel in excess of 250 knots at low level altitudes, ranging from the surface to 1,500 feet above ground level.

TRIBAL CONSIDERATIONS

Native American resource values requiring management consideration may be present, but at this time are not known to occur within the river corridor zone. Input is being sought from the Burns Paiute Tribe as part of the planning process, so that any important tribal values will be considered for protection and/or enhancement, as feasible, and documented in the final plan, as appropriate.

WILDERNESS STUDY AREAS

Final BLM wilderness recommendations have been submitted to the President of the United States. The President has until 1993 to submit to Congress. Until the wilderness process has been completed, these areas must be managed so they do not impact their suitability for designation as wilderness.

The table below shows the approximate acreages in the wilderness alternatives for WSAs in the Wild and Scenic River corridor.

For more detail on each of the WSAs within the river corridor, you may refer to the Final Oregon Statewide Environmental Impact Statement (EIS), 12-89, Volume III. Volume III contains the detail writeups for each of the WSAs (pages 427-557).

OTHER MANAGEMENT DESIGNATIONS

Please refer to the Other Management Designation on page 5.

More detailed information regarding the RNA/ACECs, ACEC, the Riddle Brothers Ranch Historic District, and the Steens Mountain Recreation Lands can be obtained from the Burns District Office.

		Alternatives of Wilderness Proposals			
WSA	Number	All Wilderness	Enhanced	Proposed	Partial
Blitzen River	2-86F	4,960	6,400	4,960	5,760
Little Blitzen Gorge	2-86F	2,560	3,264	2,560	2,560
High Steens	2-85F	1,920	3,264	1,920	2,624
South Fork Donner und Blitzen River	2-85G	1,280	2,720	N/A	N/A
	TOTAL	10,720	15,684	9,440	10,944

CHAPTER 3
PROPOSED ALTERNATIVES

Alternatives present options for managing the resources of the Blitzen River and its tributaries. They should:

1. Provide a wide range of recreational and resource opportunities while minimizing user conflicts and impacts to the natural beauty of the river environment.

2. Take into account the rights and interest of landowners, user groups, and provide enhancement and protection of the outstandingly remarkable values.

3. Utilize baseline data such as rangeland monitoring studies, Ecological Site Inventory (ESI), and information from 1991 inventories on riparian and aquatic habitat, cultural resources, and unique natural areas (which include Threatened and Endangered species).

4. Avoid management actions which would adversely impact riparian habitat, water quality, fish and wildlife, visual resources, and any other other resource identified in the Wild and Scenic Rivers Act of 1988 and the Resource Assessment.

Monitoring studies will be established or continued by all resource activities within the corridor to determine impacts, trend, and serve as indicators for management direction.

Management tools which may be used to implement actions within the river corridor include bank stabilization, in-stream structures, fencing, prescribed fire, changing seasons of use for livestock management, campground development, parking/staging areas, and signing. This list is not inclusive of all management tools which could be used.

Information and education programs will be developed to assist resource users on low impact-use and interpreting the natural resources.

ALTERNATIVE 1 - PREFERRED ALTERNATIVE

Protect and enhance the outstandingly remarkable values of the Blitzen River and its tributaries. Water quality will be improved as a result of this action. Facility development and recreational opportunities also will be designed and managed with protection and enhancement of the resources in mind.

ALTERNATIVE 2

Provide for the minimum protection of the outstandingly remarkable values of the Blitzen River and its tributaries as required in the Wild and Scenic Rivers Act. Emphasis will be on resource utilization and recreation diversity.

ALTERNATIVE 3

Emphasizes the maximum protection of the outstandingly remarkable values at the expense of other resource opportunities. Water quality will be improved as a result of this action.

ALTERNATIVE 4 - NO ACTION

Continue present management.

RESOURCE PROTECTION

1. Recreation Management

Alternative 1 - Preferred Alternative

A variety of recreational use is now occurring within the Blitzen River and its tributaries. Maintain and provide for high quality recreational opportunities within the river system.

Monitor recreational use for trends, user conflicts, and impacts to natural values.

Utilize Special Recreation Use permits for individuals and groups involving special recreation, scientific study, and educational activities which affect the recreational use of other visitors, or have an impact on the river's natural resources, including competitive and commercial use of the public lands. (This is consistent with Action 1-A-3, page 21, of the Steens Mountain RAMP).

Develop the recreation and educational opportunities for the Riddle Brothers Ranch Historic District (located in Segment B) consistent with the objectives outlined in the CRMP for the Riddle Brothers Ranch National Register Historic District (EA-OR-020-9-8).

Some of the objectives outlined in the CRMP include the following recommendations:

- Manage public use as day use only.
- Stabilize all structures.
- Provide a caretaker.
- Develop an interpretive trail for the Historic District.
- Interpret the Historic District through oral presentations, brochures, and signing.

Alternative 2

Plans would be for more intensive recreation planning with emphasis on development of additional campgrounds, recreation sites, trail systems, and motorized access.

Alternative 3

Same as Alternative 1 except that a non-commercial permit system would be implemented to control recreational use within the river corridor.

Alternative 4 - No Action

Continue recreation programs established to date. BLM would continue to manage the river corridor in accordance with existing Andrews Land Use Plan and the Steens Mountain RAMP.

2. Fish and Wildlife Management

Alternative 1 - Preferred Alternative

Based on existing data and from summer inventories of 1991, maintain or improve condition of the riparian and aquatic habitat and unique natural areas to good or excellent level throughout the river corridor. (Refer to Maps A-1 through A-6, on page 11, and B-1 through B-6, on page 31, which describe condition classes)

Develop and implement a habitat management plan for redband trout and the Malheur mottled sculpin (both Candidate 2 species listing as Threatened and Endangered) keeping consistent with the river management plan.

Finish inventory for aquatic habitat which was started in 1991 (complete 35 river miles).

Monitor wildlife species and trend conditions for the Donner und Blitzen River.

Meet the management objectives for fish and wildlife resources as outlined in the Andrews Land Use Plan and the Steens Mountain RAMP.

Alternative 2

Finish inventory for aquatic habitat which was started in 1991 (complete 35 river miles).

Meet the management objectives for fish and wildlife resources as outlined in the Andrews Land Use Plan and the Steens Mountain RAMP.

Alternative 3

Same as Alternative 1.

Alternative 4 - No Action

Meet the management objectives for fish and wildlife resources as outlined in the Andrews Land Use Plan and the Steens Mountain RAMP.

3. Riparian Management

Alternative 1 - Preferred Alternative

Maintain and where necessary restore the streamside vegetation, stream channel stability, water quality, and fish and wildlife habitat throughout the river system. Utilize interdisciplinary approach and participative effort in AMPs, HMPs, and other appropriate plans.

Protect and enhance the identified unique natural areas which include wet meadows, seeps, and bogs within the corridor. (Refer to Maps C-1 through C-5 on page 47, which describe unique natural areas.)

Maintain healthy uplands within and adjacent to the river corridor.

Monitor riparian condition and trend within the river corridor and identify conflicting uses. Implement protection and restoration efforts so that at least 75 percent of riparian areas are in good or better ecological condition by 1997.

Alternative 2

Same as Alternative 1.

Alternative 3

Same as Alternative 1.

Alternative 4 - No Action

Meet the management objectives for riparian resource as related to streamside vegetation as outlined in the Andrews Land Use Plan. This plan identifies only certain reaches within the Donner und Blitzen River system.

4. Grazing Management - Livestock and Wild Horses

Alternative 1 - Preferred Action

Develop grazing systems (Allotment Management Plans) that maintain and/or enhance habitat for wildlife, fisheries, and riparian condition. Removal of livestock, changing seasons of use, and fencing are management tools which may be used through the development of grazing systems.

Remove approximately 20 to 25 wild horses from Segment B and D because these areas are not within the South Steens Herd Management Areas.

Modify grazing systems, reduce, or eliminate livestock grazing from Little Indian Canyon (Segment E) through voluntary suspended non-use or a land-use plan amendment.

Enforce existing exclosures from livestock and wild-horse use within the river corridor.

Work with private landowners in Fish Creek (Segment F) and the south fork of the Donner und Blitzen River (Segment C) to maintain and enhance the outstandingly remarkable values in the area.

Alternative 2

Same as Alternative 1.

Alternative 3

Remove all livestock grazing and wild-horse use on public lands within the river corridor through voluntary suspended non-use or a land-use plan amendment .

Alternative 4 - No Action

Meet the management objectives for domestic livestock grazing and the South Steens Wild Horse HMAs as described in the Andrews Land Use Plan and the Steens Mountain RAMP.

5. Cultural Resource Management

Alternative 1 - Preferred Alternative

Support the implementation of the Riddle Brothers Ranch CRMP (EA-OR-020-9-8). The Historic District encompasses 1,120 acres, within Segment B, along the Little Blitzen River. All objectives of the CRMP are consistent within the guidelines of a "Wild River" as outlined in the National Wild and Scenic Rivers Act.

Monitor known cultural sites within the river corridor. Complete inventories on the remaining 37 miles of the river system.

Evaluate for potential public use all cultural resource sites with prehistoric, historic, and traditional values present.

Alternative 2

Same as Alternative 1.

Alternative 3

Same as Alternative 1.

Alternative 4 - No Action

Meet the management objectives of the Andrews Land Use Plan and the Steens Mountain RAMP as related to historical and archaeological resources.

Continue implementation of the Riddle Brothers Ranch Historic District CRMP.

RECREATION DEVELOPMENT/VISITOR MANAGEMENT

1. Recreation Facility Developments

Alternative 1 - Preferred Action

Maintain existing facility at Page Springs Recreation Site. Recent upgrading at the campground has improved opportunities for river users.

Develop an 80-acre campground (outside the river corridor) along the southern portion of the Steens Mountain Loop Road, along the access road into Big Indian Canyon, to provide a camping/staging area for recreationists using the south end of the river system. Estimated capacity would be 30-40 developed sites. This future recreation site is already being used by the public and consistent with the Andrews Land Use Plan and the Steens Mountain RAMP.

Develop a parking/staging area at Blitzen Crossing for day use only.

Develop parking area (pull-off) adjacent to the southern portions of the Steens Mountain Loop Road for a day use staging area into the Little Blitzen Canyon.

When fully implemented, the Riddle Brothers Ranch Historic District is planned to be developed for visitor day use with interpretive facilities.

Alternative 2

Same as Alternative 1 except for identifying and developing additional areas for recreation sites and campgrounds. These sites would be developed to meet future needs. No sites are identified at this time.

Alternative 3

No staging/parking areas would be developed along the southern portion of the Steens Mountain Loop Road at Blitzen Crossing and the Little Blitzen Canyon.

Alternative 4 - No Action

Maintain the Page Springs Recreation Site and develop the proposed southern portion of the Steens Mountain Loop Road Campground.

No additional recreation facilities would be developed.

2. Road Maintenance

Alternative 1 - Preferred Alternative

Maintain approximately 5 miles of existing access road into Segments C and D for motorized vehicle use. This will require reconstructing the low water ford river crossing at Indian Creek to stabilize the banks. (Refer to Map 3 on page IX.)

Maintain the Steens Mountain Loop Road for public access to the river corridor. The Loop Road is also a National Back Country Byway.

Maintain 2.25 miles of road into the existing staging area of Big Indian Canyon. At the present time, the public can drive 2.25 miles from the southern portion of the Loop Road to a small parking area. From this point on, the Big Indian Canyon is closed to motorized vehicle use.

Maintain 2 miles of road into the Riddle Brothers Ranch, from the southern portion of the Loop Road, for recreational and administrative use of the ranch.

No new motorized access would be developed within or near the river corridor.

Alternative 2

Improve all access roads located within the river corridor to high clearance, motorized vehicles. This involves approximately 37 miles of mostly unsurfaced, low standard dead end roads in various locations adjacent to the river corridor.

Alternative 3

No new access roads would be developed and existing access would not be maintained except for the Steens Mountain Loop Road and the Riddle Brothers Ranch road.

Alternative 4 - No Action

Maintain only the Steens Mountain Loop Road and the road into the Riddle Brothers Ranch.

3. Off-Road Vehicle Use/Road Closures

Alternative 1 - Preferred Alternative

Maintain existing off-road vehicle restrictions in accordance with the Burns District Off Highway Vehicle Designation (February 12, 1987) and the Steens Mountain Off-Road Vehicle Plan (September 30, 1980).

Motorized vehicle use will occur within the Riddle Brothers Ranch Historic District for administrative and ranching purposes.

Close 1 mile of road to motorized use in Segment A which enters the Blitzen River Corridor near Big Springs (refer to Map 3 on page IX).

This road can only be negotiated by ATVs and motorcycles where it enters the west slope of the canyon and is non-existent where it parallels the river.

Alternative 2

Do not close any roads to motorized vehicles within the river corridor.

Alternative 3

Close all vehicle travel routes within the river corridor to motorized vehicles except the Steens Mountain Loop Road and the road into the Riddle Brothers Ranch.

Alternative 4 - No Action

Same as Alternative 1.

4. Trails

Alternative 1 - Preferred Alternative

Maintain existing hiking/horseback trails throughout the river system (refer to Map 4 on page XI).

The Oregon High Desert Trail, which is part of the Oregon State Trails System, is established and trail guides are available to the public within the river corridor.

Develop 2-1/4 miles of the Riddle Brothers Ranch Interpretive Trail. This will be a "corridor concept" trail interpreting the Historic District.

Monitor recreational use of the trails for impacts to resources, user conflicts, and to determine if additional trails are needed. No actual trail construction will occur.

Close to mountain bikes the portions of the river corridor totalling approximately 12 miles designated as primitive under the ROS Classification (Refer to Map 2 on page VII).

Alternative 2

Develop an estimated 40 miles of hiking, horseback, and mountain bike trails within the segments of the river corridor.

Alternative 3

Same as Alternative 1 except no additional hiking, horse, or mountain bike trails would be developed.

Alternative 4 - No Action

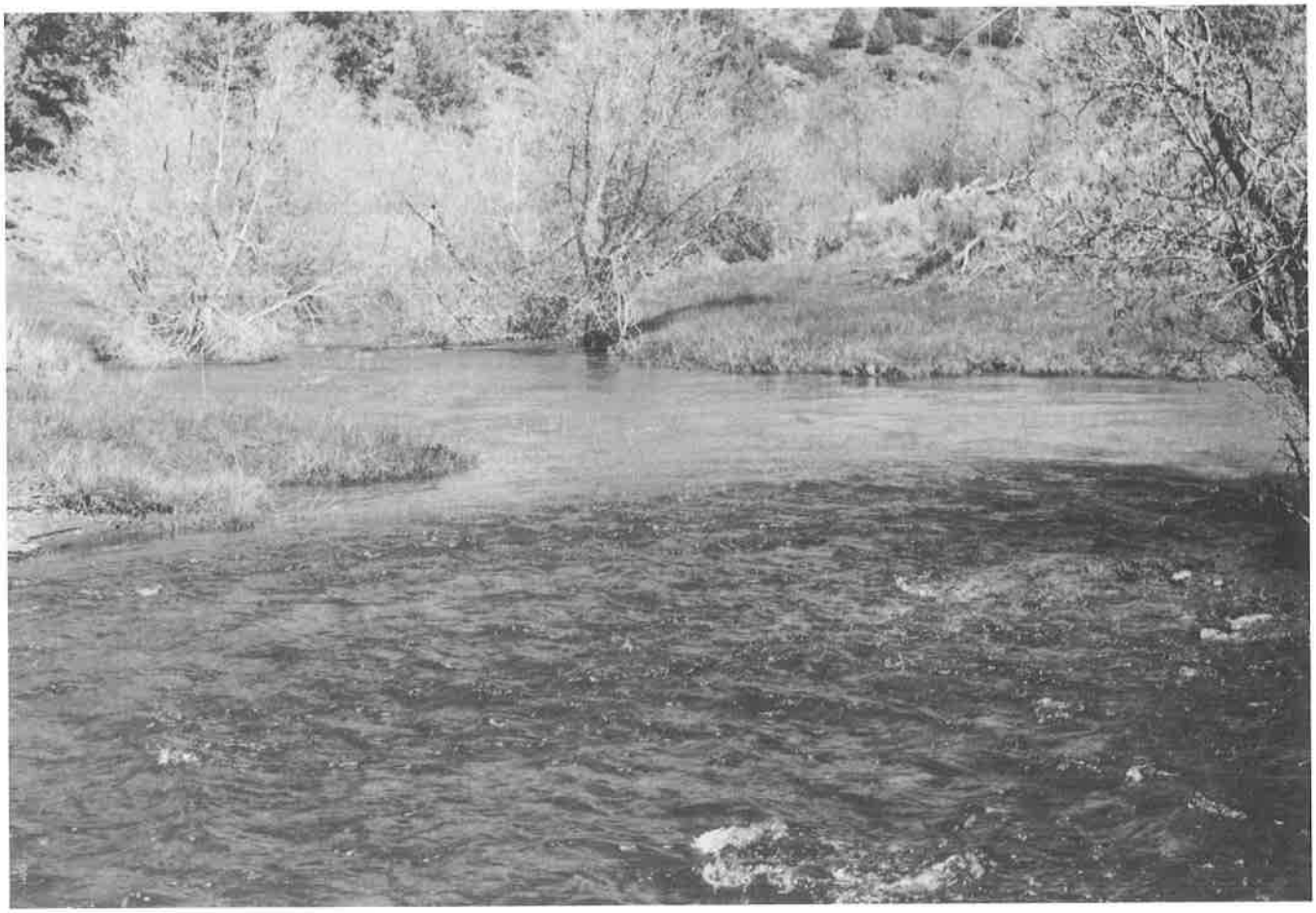
Same as Alternative 1.

5. Public Outreach

Alternative 1 - Preferred Alternative

Develop informational/educational messages for the public. Types of media which can be used are brochures, kiosk, interpretive, and directional signs.

Make this information available at key access points to the river corridor, in the campgrounds, campground hosts, and at the information center at Frenchglen.



Blitzen River Confluence of the South Fork Blitzen and Indian Creek.

Alternative 2

Same as Alternative 1.

Alternative 3

Same as Alternative 1.

Alternative 4 - No Action

Develop no new informational/educational media for the public. Use the existing information which is available.

6. Search and Rescue

Alternative 1 - Preferred Alternative

Harney County Sheriff's Department has the responsibility for any Search and Rescue within the country.

BLM will assist the county upon request in any emergency that may occur.

Alternative 2

Same as Alternative 1.

Alternative 3

Same as Alternative 1

Alternative 4 - No Action

Same as Alternative 1.

7. Law Enforcement

Alternative 1 - Preferred Alternative

Provide additional BLM Ranger coverage for the Blitzen River and its tributaries. Work with other agencies (ODFW, Oregon State Police, Harney County Sheriff Department) to provide additional enforcement on land and water for protection of the resources and users.

Alternative 2

Same as Alternative 1.

Alternative 3

Increase law enforcement coverage for maximum protection of resource values.

Alternative 4 - No Action

No additional emphasis would be placed on resource or visitor protection within the corridor. No additional law enforcement agreements would be undertaken with other agencies.

LANDOWNERSHIP

1. Private Landowners

Alternative 1 - Preferred Alternative

The Wild and Scenic Rivers Act does not give the Federal government authority to zone or mandate use of private lands. Agricultural and grazing activities on private lands present at the time of designation would not be affected.

County comprehensive land-use plans in Oregon must recognize and provide protection of Federally designated Wild and Scenic Rivers under Statewide Planning Goal 5. This could require county plan amendments which might constrain private land owners.

The BLM will work closely with landowners to assure that all uses are consistent with the intent of the Act. Fencing the river corridor is not anticipated on private lands. Unless an easement has been transferred to the managing agency, landowners are subject to State and local regulations.

In order to maintain appropriate outstandingly remarkable values, it is anticipated that private inholding properties would be managed and maintained as currently seen, with minimal additional development or structures.

Alternative 2

Allow for little or no coordination between BLM and the private land owners.

Alternative 3

Fence the public lands from the private lands within the river corridor.

Alternative 4 - No Action

Same as Alternative 1.

2. Management Cooperation Between Agencies and Affected Parties

Alternative 1 - Preferred Alternative

Develop and/or coordinate management programs with landowners, user groups, and the following local, State, and Federal agencies:

Harney County
State of Oregon
  Water Resource Department
  Department of Fish and Wildlife
  Division of State Lands
  Historic Preservation Office
  Department of Environmental Quality
U.S. Geological Survey
  Water Resources Division
U.S. Fish and Wildlife Service
  Malheur National Wildlife Refuge
Burns Paiute Tribe

Alternative 2

Same as Alternative 1.

Alternative 3

Same as Alternative 1.

Alternative 4 - No Action

Agencies and affected parties mandated by law and/or identified in existing land-use plans should be consulted in the management of the corridor. No other efforts would be made to gather management input.

3. Land Exchanges/Purchases/Easements

Alternative 1 - Preferred Alternative

Acquire through land exchanges or purchases on a willing buyer/willing seller basis any private lands within the Wild and Scenic River Corridor. Where appropriate, conservation easements may be used in place of fee title acquisitions. There are none identified at this time.

Any land exchanges or purchases will be undertaken only with willing parties. No condemnation for fee title will occur.

Alternative 2

Same as Alternative 1.

Alternative 3

Same as Alternative 1.

Alternative 4 - No Action

No acquisition, exchanges or easements would be sought within the river corridor.

4. Administrative Boundaries

Alternative 1 - Preferred Alternative

The Wild and Scenic Rivers Act has the purpose of protecting and enhancing the Donner und Blitzen River and its immediate environment in a free-flowing condition. The corridor boundaries include the outstandingly remarkable values for which the river was designated.

The corridor boundaries are governed by the location of these outstandingly remarkable values whether the land is within private or public ownership. By law these boundaries do not exceed 320 acres per river mile.

Alternative 2

Same as Alternative 1.

Alternative 3

Same as Alternative 1.

Alternative 4 - No Action

Same as Alternative 1.

OTHER MANAGEMENT ACTIONS/CONSIDERATIONS

1. Water Quality/Water Quantity

Alternative 1 - Preferred Alternative

Valid water rights are not affected by a National Wild and Scenic River designation. The State manages and allocates water rights. Existing uses, dams, Riddle Brothers Ranch diversions, and other water projects located on this river are not affected.

Maintenance and construction of facilities needed to use existing valid water rights will continue.

The 80.4 acres of meadows along the Little Blitzen River within the Riddle Brothers Ranch Historic District will continue to be irrigated as outlined in the Riddle Brothers Ranch Historic District CRMP.

In-stream water rights are water rights held by the Oregon Water Resources Department for the benefit of the people of Oregon. Only three state agencies (ODFW, Department of Environmental Quality, and Parks and Recreation Department) are allowed to request in-stream water rights. New water rights and project proposals will be evaluated on their potential to affect the attributes which made the river eligible as a Wild and Scenic River.

A monitoring system will be established for water quality throughout the river corridor. Water quality criteria will meet the minimum requirements as outlined in Section 314 of the Clean Water Act.

Alternative 2

Same as Alternative 1.

Alternative 3

Same as Alternative 1.

Alternative 4 - No action

Water rights issues will remain under state control with no involvement from outside interests.

The 80.4 acres of meadows along the Little Blitzen River within the historic district will continue to be irrigated as outlined in the Riddle Brothers Ranch Historic District CRMP.

A monitoring system will be established for water quality throughout the river corridor. Water quality criteria will meet the minimum requirements as outlined in Section 314 of the Clean Water Act.

2. Juniper Encroachment

Alternative 1 - Preferred Alternative

Control the advancement of juniper within the river corridor and surrounding uplands.

Develop a burn plan and use prescribed fire as a management tool to control juniper and enhance any of the outstandingly remarkable values within the river corridor.

Alternative 2

Same as Alternative 1.

Alternative 3

Same as Alternative 1.

Alternative 4 - No action

Provide no management for the control of juniper within the river corridor and surrounding uplands. No burn plan will be developed and prescribed fire will not be used as a management tool to enhance the outstandingly remarkable values.

3. Fire Management

Alternative 1 - Preferred Action

Fire suppression activities should not impact the outstandingly remarkable values within the river corridor. Use of mechanized equipment would be minimized and directed at protecting sensitive resources such as the Riddle Brothers Ranch and developed campgrounds.

Alternative 2

Same as Alternative 1.

Alternative 3

Same as Alternative 1.

Alternative 4 - No Action

Same as Alternative 1.

4. RNA/ACECs

Alternative 1 - Preferred Action

Maintain and/or enhance the existing RNA/ACECs within the river corridor. They include the Rooster Comb RNA/ACEC, the Little Blitzen RNA/ACEC within Segment B, and the Steens Scenic ACEC which covers Segments B, D, and E.

Alternative 2

Same as Alternative 1.

Alternative 3

Analyze the Unique Natural Areas (as identified in the inventories) to see if they meet the cell needs for RNA/ACECs as described in the Oregon Natural Heritage Program.

Potential ACEC would be considered for designation in a land-use plan amendment or revision. Potential ACEC would be subject to interim management to protect sensitive values until formal elevation through a plan amendment.

Alternative 4 - No Action

Same as Alternative 1.

5. WSAs

Alternative 1 - Preferred Alternative

Until these lands are either designated Wilderness or released from wilderness review status by Congress, manage existing WSAs within the river corridor as outlined in the "Interim Management Policy and Guidelines for Lands Under Wilderness Review."

Alternative 2

Same as Alternative 1.

Alternative 3

Same as Alternative 1.

Alternative 4 - No Action

Same as Alternative 1.

CHAPTER 4
SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Separate EAs will be prepared on a project-by-project basis to identify and assess impacts related to implementing the management plan.

There are no anticipated negative impacts to commercial forest lands, wetlands, flood plains, WSAs, designated RNA/ACECs, or visual resources. Since the entire river corridor has no mining claims, mineral leases, or mineral material sites, and is withdrawn from mineral entry, there would be no impact on mineral or energy-related resources.

It is assumed that any use permits would be a minor inconvenience to users, raise administrative cost slightly, but not affect overall use levels. The permits would generate useful information and aid in search and rescue.

Impacts to specific resources are described as follows:

IMPACTS TO RECREATION

Alternative 1

Impacts to the recreation resource under this alternative would concentrate recreation use of the Blitzen River system into two developed sites, one at Page Springs Campground and the other at the proposed campground on the southern portion of the Steens Mountain Loop Road.

These recreation sites (Page Springs which is developed and is in operation) will enhance camping and recreational opportunities in a roaded natural setting. They will provide a staging area for back country recreational use within the corridor. Potable water and sanitation facilities will be provided to meet the needs of the recreationist at these sites, thus reducing impacts to soil and ground water.

Site development for the campground on the southern portion of the Steens Mountain Loop Road will encompass approximately 80 acres outside of the Wild and Scenic River boundary. The level of development will be consistent with the existing recreational sites on the Steens (Page Springs, Fish Lake, and Jackman Park Campgrounds).

The staging and parking area for day use into the Little Blitzen Gorge will be incorporated into the maintenance of the southern portion of the Steens Mountain Loop Road. Site development will include 2 to 3 acres adjacent to the existing road for parking. Recreationists will benefit in providing a safe area to park, along with a kiosk to obtain current information.

The staging/parking area for Blitzen Crossing will alleviate the congestion within this narrow corridor and provide safe parking for the user.

The recreational and educational experiences for the public will be enhanced by providing opportunities within the Riddle Brothers Ranch Historic District. This is an original homestead within Harney County and the setting is within a "wild river environment."

Alternative 2

Impacts to the recreation resource would be the same as in Alternative 1 with the following additions.

The level of development within the river corridor would be in the form of additional trails, recreation sites, and campgrounds. This would require additional support needs in infrastructures such as roads and facilities along with increased demands on administrative and personnel functions.

Alternative 3

This alternative would limit the number of recreational users within the river corridor and would impact users who have to obtain a permit. There would be times when the user could not obtain a permit because they were all taken. An increased demand of administrative and personnel functions would be required.

Alternative 4

Under this alternative, the recreation resource opportunities and facilities would be maintained at levels established to date.

Mitigation for all the alternatives would be to provide educational/interpretive opportunities by utilizing such items as brochures, signs, and bulletin boards at key access points.These messages will include low-impact camping, identification of sensitive plants and animals, and interpretation of cultural and historic sites like the Riddle Brothers Ranch.

IMPACTS TO FISH AND WILDLIFE

Alternative 1

Fish and wildlife habitat would be enhanced by the maintenance and/or improvement of riparian condition and aquatic habitat throughout the river corridor.

Redband trout and the Malheur mottled sculpin will benefit from the development and implementation of a habitat management plan.

Negative impacts to fish and wildlife species from consumptive and non-consumptive recreational use within the river corridor have not been determined.

Alternative 2

This alternative would have the greatest impact on fish and wildlife because of increased recreation planning facility and development.

Alternative 3

Fish and wildlife would benefit the most under this alternative. Protection of these values would be the first priority. Other resource uses would occur only if they did not impact fish and wildlife.

Alternative 4

Under this alternative only portions of the Blitzen River and its tributaries would be enhanced as outlined in the existing land-use plans. Fish and wildlife habitat would continue to decline in areas inventoried but not identified under existing plans.

Mitigating measures for all alternatives would be to provide informational/educational messages that would help visitors be aware of sensitive areas and species.

IMPACTS TO RIPARIAN MANAGEMENT

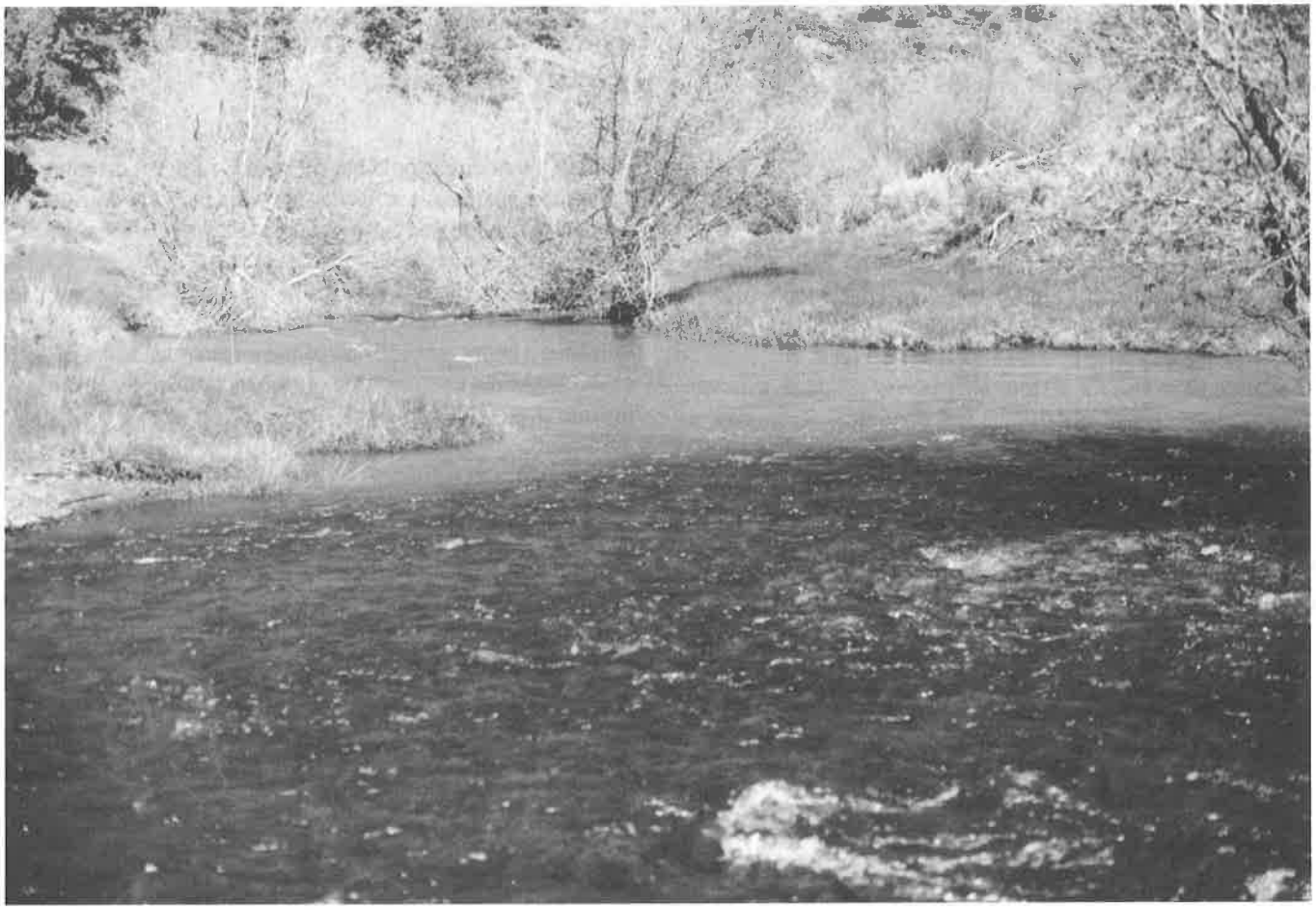
All four alternatives outlining impacts to Riparian Management will be similar to Fish and Wildlife Management.

Mitigating measures would be the same as described under Fish and Wildlife impacts.

As riparian objectives are met, water quality, and to a lesser extent water flows, will be enhanced.

IMPACTS TO SOIL AND WATER

Soil and water will benefit with improved fish and wildlife habitat, better riparian condition, and livestock management within the river corridor.



Blitzen Crossing, South Fork and Indian Creek.

Developing an 80-acre (30-40 unit) campground along the southern portion of the Steens Loop Road will concentrate camping within a designated area. Ground water will improve with the use of vault toilets and waste water disposals. Potable water will be provided. These improvements will provide for human health and safety needs.

Closing approximately 1 mile of road within the river corridor (Segment A) will enhance soil and water due to less erosion.

Maintenance of identified access roads and the low water ford crossing within Segment D will improve soil and water conditions through better road surface and bank and stream stabilization.

IMPACTS TO LIVESTOCK MANAGEMENT

Alternative 1

Livestock management will be impacted within the river corridor, where they currently graze, as a result of enhancing wildlife, fisheries, and riparian habitat.

As allotment management plans are completed, recommended management tools, which can be used through the development of grazing systems, may include removal of livestock, changing seasons of use, and fencing.

The recreational opportunities and experiences associated with different activities will be enhanced with improved livestock management within the corridor.

Alternative 2

This alternative will also have an impact on livestock management. By providing the minimum protection of the outstandingly remarkable values, adjustments in current management will be needed.

Alternative 3

This alternative would have the greatest impact on cattle and wild-horse use by eliminating all grazing on public lands

within the corridor. Extensive fencing would have to be done to control livestock movement. This would be extremely expensive and a maintenance problem.

Alternative 4

Livestock management will be impacted the least by this alternative. Management actions outlined in the existing land-use plans will influence grazing within specific reaches of the river corridor.

Mitigating measures for all four alternatives would be to work with the private landowners and permittees on grazing systems within and adjacent to the river corridor.

The allotments, which include the river system, are extremely large in size and encompass a lot of private land. These allotments need to be looked at as a whole system and not just the problem areas associated with the river corridor.

IMPACTS TO WILD HORSES

Alternative 1

Within the South Steens HMA, in areas identified as having a negative effect on the river environment, wild-horse use would be impacted by this alternative.

Alternative 2

Depending on the location and amount of stream excluded from grazing, wild-horse movement and watering areas within the south fork of the Donner und Blitzen River (Segment C) may be impacted by this alternative.

Alternative 3

Remove all wild-horse use within the river corridor.

Alternative 4

Same as Alternative 1.

Mitigating measures would also be the same as described under Livestock Management.

IMPACTS TO CULTURAL RESOURCES

All four alternatives could have a negative impact on cultural sites. As recreational use increases within the river corridor, vandalism and theft of these resources may also increase.

Implementation of the Riddle Brothers Ranch CRMP will provide access to this National Historic Site where the public will have a better appreciation of these resources and will benefit from the interpretation of of both prehistoric and historic sites.

Mitigating measures would be to provide increased law enforcement patrols on known sites and complete the cultural resource inventory for the river corridor to identify new sites for monitoring and protection.

Visitor information materials would also encourage protection of cultural resources and non-consumptive interpretation.

IMPACTS TO OTHER RESOURCES

Air quality is expected to be maintained or enhanced slightly when road maintenance and surfacing reduce fugitive dust. Smoke from prescribed fires on small habitat improvement projects would be short-term and its effort assessed in the revised fire management activity plan.

Visual quality will be enhanced slightly over time as vegetation management and road maintenance or closures reduce vegetative disturbance.

Economic benefits to the Harney County area are expected to increase slightly over time as river-related use rises. The development of the additional campground with improved amenities and maintained roads and staging areas should encourage some visitors to remain longer and increase local spending. No reliable estimate of current or projected economic benefits is available.

Threatened, endangered, and other special status plants, animals, and fish (Appendix D) would be protected or enhanced under all alternatives. Any projects which might affect listed species would be subject to consultation with the USFWS.

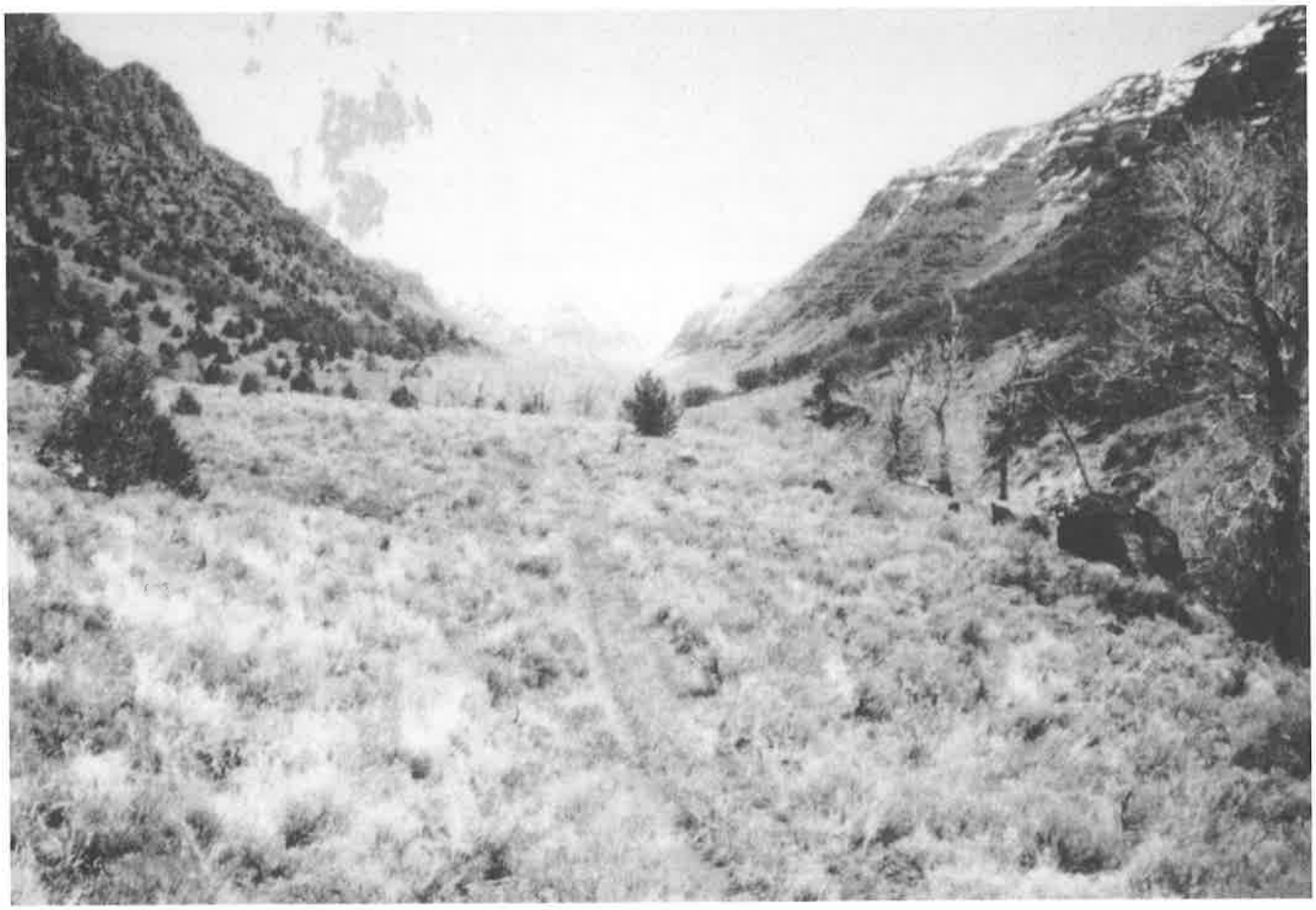
CHAPTER 5
COST AND IMPLEMENTATION

FISCAL REQUIREMENTS

The following are estimated costs based on 1991 dollar values. The proposed sites and administrative costs are listed in priority order for development. Priorities are based on resource and user requirements, guidelines established under the Wild and Scenic Rivers Act, and other commitments and priorities established.

Facility Development	Alternative 1	Alternative 2	Alternative 3	Alternative 4
1. South Steens Campground(includes survey/design and development)	$ 570,000	Same as 1	Same as 1	570,000
Maintenance per year	15,000	Same as 1	Same as 1	15,000
Page Springs Campground maintenance per year	15,000	Same as 1	Same as 1	15,000
2. Day use staging area for Little Blitzen Gorge (includes cost of developing parking area/kiosk)	20,000	Same as 1	0	5,000
3. Staging area/parking for Blitzen Crossing	20,000	Same as 1	0	O
4. Riddle Brothers Ranch Cultural Resource Interpretive Site (includes maintenance of 2 miles access road, stabilization of structures, and preparing the site for interpretation of the ranch to the public)	100,000	Same as 1	Same as 1	Same as 1
5. Additional recreation sites,hiking trails, and vehicle access throughout the river corridor	0	300,000	0	0
Administrative Cost				
1. Public outreach (kiosk, signing, and brochures	30,000	75,000	100,000	10,000
2. Monitoring river corridor for all resources	40,000	60,000	80,000	25,000

CHAPTER 6
APPENDICES



Big Indian Canyon.

APPENDIX A
BOUNDARY DESCRIPTIONS

Donner und Blitzen Wild and Scenic River
Legal Description - Administrative Boundary

Legal description of proposed administrative boundary commencing at the headwaters of the south fork of the Donner und Blitzen (referred to as Segment C on the map) and on the east-west centerline between sections 19, 20, T. 32 S., R. 32-1/2 E., and extending downstream to the sectionline between 8 and 17, T. 32 S., R. 32-1/2 E., then back to point of origin.

Township	Range	Meridian	Section	
35 S.	32-3/4 E.	W.M.	20	Beginning at the section corner common to sections 17, 18, 19 and 20. Thence heading east 0.25 mile, thence heading northeasterly 0.36 mile to a point intersecting the section lines between sections 20 and 17.
35 S.	32-3/4 E.	W.M.	17	Thence heading north 0.25 mile, thence heading east 0.50 mile, thence heading northwesterly 0.36 mile, thence heading north on the section line 0.38 mile.
35 S.	32-3/4 E.	W.M.	18	Thence heading east 0.25 mile, thence heading 0.12 mile north to section line.
35 S.	32-3/4 E.	W.M.	7	Thence heading north 1.25 mile, hence heading northwesterly 0.38 mile to section line.
35 S.	32-3/4 E.	W.M.	8	Thence heading northwesterly 0.53 mile, thence north 0.12 mile to the section line.
35 S.	32-3/4 E.	W.M.	5	Thence heading northeasterly 0.28 mile, thence heading west 0.30 to the section line between sections 5 and 4. Thence heading west 0.75 mile along the section line between Sections 9 and 4.
35 S.	32-3/4 E.	W.M.	4	Thence heading north 0.50 mile, thence heading east 0.75 mile to section line. Thence north along section line. Thence north along section line 0.25 mile, thence northeasterly 0.27 mile to section line, thence east 0.25 mile.
34 S.	32-3/4 E.	W.M.	33	Thence heading north 0.25 mile, thence heading northeasterly 0.55 mile to section line, thence heading north 0.12 mile, thence heading northeasterly 0.57 mile to the section line, thence heading north 0.25 mile to section corner.
34 S.	32-3/4 E.	W.M.	27	Thence heading northeasterly 0.70 mile, thence heading north 0.50 to section line.
34 S.	32-3/4 E.	W.M.	22	Thence heading northwesterly 0.36 mile, thence heading west 0.25 mile to section line.
34 S.	32-3/4 E.	W.M.	21	Thence heading west 1.0 mile to section line.
34 S.	32-3/4 E.	W.M.	20	Thence heading along the east rim of the Blitzen River Canyon for 1.13 mile.

Township	Range	Meridian	Section	
34 S.	32-3/4 E.	W.M.	17	Thence continuing along the east rim of the river canyon for 1.25 mile.
34 S.	32-3/4 E.	W.M.	7	Thence continuing along the east rim of the river canyon for 0.25 mile. Thence east 0.12 mile to section line. Thence north 0.26 mile along section line.
				Refer to Segment D on the map.
34 S.	32-3/4 E.	W.M.	8	Thence east 1.0 mile to section line.
34 S.	32-3/4 E.	W.M.	9	Thence continuing east 1.0 mile through center of section.
34 S.	32-3/4 E.	W.M.	10	Thence heading northeasterly 1.10 mile to section corner.
34 S.	32-3/4 E.	W.M.	2	Thence heading north 0.12 mile. Thence heading east 1.0 mile to section line. Thence heading south 0.12 mile to section corner.
				Refer to Segment E on the map.
34 S.	32-3/4 E.	W.M.	12	Thence heading east 0.25 mile along section line.Thence heading southeasterly 0.75 mile to section line.
33 S.	33 E.	W.M.	29	Thence continuing southeasterly 0.36 mile to section line.
33 S.	33 E.	W.M.	32	Thence continuing southeasterly 0.36 mile. Then heading east 0.50 mile to section line.
33 S.	33 E.	W.M.	33	Thence continuing east 1.0 mile to section line.
33 S.	33 E.	W.M.	34	Thence continuing east 0.50 mile to center of section. Thence heading north 0.25 mile section line.
33 S.	33 E.	W.M.	27	Thence continuing north 0.25 mile. Thence heading west 0.50 mile to section line.
33 S.	33 E.	W.M.	28	Thence continuing west 0.75 mile. Thence heading northwesterly 0.32 mile to section line.
33 S.	33 E.	W.M.	29	Thence heading west 0.50 mile to center of section. Thence heading northwesterly 0.53 mile to section line. Thence heading north 0.25 mile to section corner.
34 S.	32-3/4 E.	W.M.	1	Thence heading west 1.0 mile through center of section to section line. Thence heading north 0.50 mile to section corner.
				Refer to Segment D on the map
33 S.	32-3/4 E.	W.M.	36	Thence continuing north 0.25 mile along section line. Thence heading east 0.50 mile, thence southeasterly 0.53 mile to section line.
33 S.	33 E.	W.M.	20	Thence heading east 0.50 mile to center of section. Thence heading southeasterly 0.55 mile to section line.
33 S.	33 E.	W.M.	21	Thence continuing southeasterly 0.34 mile to section line. Thence heading east 0.75 mile to section corner.

Township	Range	Meridian	Section	
33 S.	33 E.	W.M.	27	Thence heading south 0.25 along section line. Thence heading west 1.0 mile to section line. Thence heading north 0.25 mile to section corner.
33 S.	33 E.	W.M.	26	Thence heading east 1.0 mile along the top of section 26 to section corner.
33 S.	33 E.	W.M.	23	Thence heading north 0.85 mile to the southern portion of the Steens Mountain Loop Road. Thence heading northwesterly 0.25 mile along the southern portion of the Steens Mountain Loop Road to section line. Thence head west 0.75 mile to section corner.
33 S.	33 E.	W.M.	22	Thence heading south 0.12 mile along section line. Thence heading west 1.25 mile along the north rim of Big Indian Canyon.
33 S.	33 E.	W.M.	21	Thence continuing west 0.12 mile along the North Rim of Big Indian Canyon.
33 S.	33 E.	W.M.	16	Thence continuing west 1.25 mile along the north rim of Big Indian Canyon.
33 S.	33 E.	W.M.	17	Thence continuing west 1.25 mile along the north rim of Big Indian Canyon.
33 S.	33 E.	W.M.	21	Thence continuing west 0.12 mile along the north rim of Big Indian Canyon.
33 S.	33 E.	W.M.	16	Thence continuing west 1.25 mile along the north rim of Big Indian Canyon.
33 S.	33 E.	W.M.	17	Thence continuing west 1.25 mile along the north rim of Big Indian Canyon.
33 S.	32-3/4 E.	W.M.	36	Thence continuing west 0.25 mile along the north rim of Big Indian Canyon.
33 S.	32-3/4 E.	W.M.	25	Thence continuing west 1.0 mile along the north rim of the Big Indian Canyon.
33 S.	32-3/4 E.	W.M.	26	Thence continuing west 0.50 mile along the north rim of Big Indian Canyon.
33 S.	32-3/4 E.	W.M.	35	Thence continuing south 1.25 mile along the west rim of the Big Indian Canyon to junction of the southern portion of Steens Mountain Loop Road.
33 S.	32-3/4 E.	W.M.	2	Thence continuing southeasterly 1.25 mile along the southern portion of Steens Mountain Loop Road. Thence heading south 0.34 mile to center of the section. Thence heading west 0.50 mile to section line.
33 S.	32-3/4 E.	W.M.	3	Thence heading southwesterly 1.07 mile to section corner.
33 S.	32-3/4 E.	W.M.	4, 5, 6	Thence heading west 2.25 miles along the southern boundary of sections 4, 5, and 6.

Township	Range	Meridian	Section	
			Refer to Segment C on the map.	
33 S.	32-3/4 E.	W.M.	7	Thence heading south 0.25 mile. Thence heading west 0.67 mile to section line. Thence heading north 0.25 mile along section line to section corner.
33 S.	32-1/2 E.	W.M.	1, 36	Thence heading west 0.50 mile along section line. Thence leading north 0.50 mile to center of section. Thence heading west to rim of Blitzen River Canyon. Thence heading north 2.75 mile to confluence of Little Blitzen River. Thence heading east 0.84 mile to section line.
			Refer to Segment B on the map.	
33 S.	32-3/4 E.	W.M.	31	Thence continuing east 0.40 mile to center of section. Thence heading southeasterly 0.87 mile to section corner.
33 S.	32-3/4 E.	W.M.	32	Thence heading east 1.0 mile along the south boundary of section 32.
33 S.	32-3/4 E.	W.M.	33	Thence heading northeasterly 1.21 mile to section line.
33 S.	32-3/4 E.	W.M.	34	Thence heading east 1.0 mile to section line.
33 S.	32-3/4 E.	W.M.	35, 26 25	Thence heading north 0.17 mile along section line to south rim of Little Blitzen River Canyon. Thence heading east 2.25 miles along the south rim of Little Blitzen Canyon to section line between sections 25 and 8.
33 S.	33 E.	W.M.	8, 17 16	Thence continuing east 2.25 miles along south rim of Little Blitzen Canyon to section line between sections 16 and 15.
33 S.	33 E.	W.M.	15, 14 13, 12 11, 10 9, 8, 5	Thence heading southeasterly 0.59 mile. Thence heading east 0.75 mile. Thence heading north 0.50 mile. Thence heading east 1.25 mile to east end of the Little Blitzen River Canyon. Thence continuing 1.0 mile around the headwall of Little Blitzen River Canyon. Thence heading north 0.25 mile. Thence heading west 1.50 mile to section line between sections 10 and 11. Thence continuing west 3.25 mile to section line between sections 5 and 24, along the north rim of Little Blitzen River Canyon.
33 S.	32-3/4 E.	W.M.	24, 23 26, 27 28, 33 32, 31	Continuing west 4.0 miles along the north rim of Little Blitzen River Canyon to center of section. Thence heading west 0.34 mile to center of section. Thence heading south 0.75 mile into section 33. Thence heading west 0.25 mile. Thence heading south 0.25. Thence heading west 1.25 mile to section line. Thence heading north 0.75 mile along section line. Thence heading west 1.0 mile to section line. Thence heading south 0.25 mile along section line to section corner.
33 S.	32-1/2 E.	W.M.	25	Thence heading west 1.0 mile along the south boundary of Sec. 25 to confluence with the Blitzen River Canyon.

Township	Range	Meridian	Section	
			Refer to Segment A on the map.	
33 S.	32-1/2 E.	W.M.	26, 27 22, 23 22, 15 14, 15 10, 9, 1	Thence heading north 9.50 miles along the east rim of Blitzen River Canyon to section line between sections 4 and 33.
32 S.	32-1/2 E.	W.M.	33	Thence heading north 0.50 mile. Thence heading northeasterly 0.34 mile to south rim of Fish Creek Canyon.
			Refer to Segment F on the map.	
32 S.	32-1/2 E.	W.M.	34, 35	Thence heading east 2.0 mile along the south rim of Fish Creek to intersection of T. 32 S., and T. 33 S. township line.
33 S.	32-1/2 E.	W.M.	2, 1	Thence continuing east 0.50 mile to intersection of township line between T. 32 S., and T. 33 S.
32 S.	32-1/2 E.	W.M.	36	Thence continuing east 0.25 mile along south rim of Fish Creek Canyon to township line between T. 32 S. and T. 33 S.
33 S.	32-1/2 E.	W.M.	1	Thence continuing east 0.50 mile along the south rim of Fish Creek Canyon to section line.
33 S.	32-3/4 E.	W.M.	6, 5 4, 10 11, 12	Thence continuing east 1.50 mile along south rim of Fish Creek to where rim ends. Thence continuing east 1.17 mile to section line. Thence heading southeasterly 0.84 mile to section corner. Thence heading south 0.25 mile. Thence heading east 2.75 mile. Thence heading southeasterly 0.36 mile to section line. Thence continuing east 1.0 mile to township line between T. 33 S., and T. 32-1/2 S.
32-1/2 S.	33 E.	W.M.	32, 33	Thence heading southeasterly 1.09 mile to section line between sections 32 and 33. Thence continuing southeasterly 0.55 mile to township line T. 32-1/2 S. and T. 33 S.
33 S.	33 E.	W.M.	4, 3	Thence heading southeasterly 0.57 mile to center of section. Thence heading east 1.0 mile to center of section 3. Thence heading north 0.09 mile to the northern portion of Steens Mountain Loop Road. Thence heading northwesterly 0.50 along the northern portion of the Loop Road to township line.
32-1/2 S.	33 E.	W.M.	34, 33	Thence continuing northwesterly 1.50 mile along the northern portion of the Loop Road to section line. Thence heading west 0.45 mile to section line. Thence heading north 0.25 mile along section line. Thence heading west 0.25 mile. Thence heading north 0.25 mile. Thence heading west 0.75 mile to section line.
33 S.	32-3/4 E.	W.M.	1, 2, 3, 4	Thence heading northwesterly 0.50 mile. Thence heading west 1.50 mile to section line. Thence heading north 0.11 mile. Thence heading west 0.50 mile. Thence heading north 0.11 mile to center of section. Thence heading west 0.25 mile. Thence heading north 0.25 mile. Thence heading northwesterly 0.50 mile to township line.

Township	Range	Meridian	Section	
32 S.	32-3/4 E.	W.M.	5, 6	Thence continuing south 0.12 mile to north rim of Fish Creek Canyon. Thence continuing west 1.25 mil along the north rim of Fish Creek Canyon.
33 S.	32-1/2 E.	W.M.	1	Thence continuing west 0.25 mile along the north rim of Fish Creek Canyon to section line.
32 S.	32-1/2 E.	W.M.	36, 35 34, 33 28, 20 17	Thence continuing west 3.50 mile along the north rim of Fish Creek Canyon to confluence of Blitzen River between sections 33 and 28.

Refer to Segment A on the map.

Thence continuing north 3.0 miles along the east rim of Blitzen River Canyon to center of section 17. Thence heading east 0.25 mile. Thence heading north 0.50 mile to section line. Thence heading west 0.50 mile to road by Camper Corral. This is the northern boundary of the Wild and Scenic River adjacent to Malheur Wildlife Refuge.

32 S.	32-1/2 E.	W.M.	17, 18 19, 20 29, 28 33	Thence continuing south 1.0 mile along jeep trail to section line between sections 18 and 19.

Thence heading east 0.11 mile to section corner. Thence heading south 1.50 mile along section line between sections 19 and 20. Then heading east 1.09 mile to west rim of Blitzen River Canyon. Thence heading south 4.0 miles along the west rim of Blitzen River Canyon to township line between T. 32 S. and T. 33 S.

33 S.	32-1/2 E.	W.M.	4, 9, 10	Thence heading south 1.0 mile along the west rim of Blitzen River Canyon. Thence heading west 0.50 mile to section line. Thence heading south 0.25 mile to section corner. Thence heading southeasterly 0.50 mile to west rim of Blitzen River Canyon.

Thence heading south 1.0 mile along west rim of Blitzen River Canyon to section corner. Thence heading east 0.11 mile. Thence heading north 0.21 mile to canyon rim. Thence continuing south 2.25 miles to section line between sections 15 and 22. Thence continuing west 0.12 mile to section corner. Thence heading south 0.25 mile along section line. Thence heading east 0.25 mile to canyon rim. Thence heading south 1.0 mile along west rim of Blitzen River Canyon rim. Thence heading east 0.25 mile to canyon rim. Thence heading south 0.25 mile along canyon rim. Thence heading west 0.11 mile. Thence heading south 0.25 mile. Thence heading east 0.50 mile to canyon rim. Thence heading south 0.36 mile to section corner. Thence heading east 0.25 mile to canyon rim. Thence heading south 2.25 miles along Blitzen River Canyon rim to township line between T. 33 S. and T. 34 S.

Refer to Segment C on the map.

34 S.	32-1/2 E.	W.M.	2, 1	Thence continuing south 0.11 mile. Thence continuing east 0.34 mile to canyon rim. Thence heading south 1.0 mile along west rim Blitzen

Township	Range	Meridian	Section	
				River Canyon. Thence heading west 0.09 mile. Thence heading south 0.50 mile. Thence heading southeasterly 0.34 mile to center of section 12. Thence heading east 0.50 mile to section line between sections 12 and 7. Thence heading south 0.25 mile along section line.
34 S.	32-3/4 E.	W.M.	7, 18 17, 20 29, 28 33, 32	Thence continuing east 0.67 mile to west rim of Blitzen River Canyon. Thence heading south 3.0 miles along west rim of Blitzen River Canyon. Thence heading south 0.23 mile to section line between sections 20 and 29. Thence heading east 0.25 mile to section corner. Thence heading south 0.11 mile along section line. Thence heading east 1.11 mile. Thence heading south 0.25 mile. Thence heading southwesterly 0.86 mile to section line between sections 28 and 33.
35 S.	32-3/4 E.	W.M.	5, 7 18, 19 20	Thence continuing southwesterly 2.0 miles to section line between sections 5 and 6. Thence heading southwesterly 1.06 mile. Thence heading south 0.50 mile. Thence heading southeasterly 0.34 mile to center of section 28. Thence heading south 0.25 mile. Thence heading southeasterly 0.34 mile to section line between sections 18 and 19. Thence heading east 0.25 mile to point of origin.

APPENDIX B
RECREATION OPPORTUNITY SPECTRUM CLASS DESCRIPTIONS

OPPORTUNITY CLASS	EXPERIENCE OPPORTUNITY	SETTINC OPPORTUNITY	ACTIVE OPPORTUNITY
Primitive	Opportunity for isolation from the sights and sound of man to feel a part of the natural environment to have a high degree of challenge and risk and to use outdoor skills.	Area is characterizedby essentially unmodified natural environment of fairly large size. Concentration of users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of man-induced restrictions and controls. Only facilities essential for resource protection are used. No facilities for comfort or convenience of the user are provided. Spacing of groups is informal and dispersed to minimize contact between groups. Motorized use within the are is not permitted.	Camping Hiking Climbing Enjoying Scenery or Natural Features Nature Study Photography Horseback Riding Spelunking Hunting (big game, small game, upland birds, waterfowl) Ski Touring and Snowshoeing Swimming Diving (Skin and Scuba) Fishing Canoeing Sailing River Running (non-motorized craft)
Semi-Primitive Nonmotorized	Some opportunity for isolation from the sights and sounds of man, but not as important as for primitive opportunities. Opportunity to have a high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills.	Area is characterized by predominantly unmodified natural environment of moderate to large size. Concentration of users is low, but here is often evidence of other area users. On-site controls and restrictions may be present, but are subtle. Facilities are provide for the protection of resource values and the safety of users only. Spacing of groups may be formalized to disperse use and limit contact between groups. Motorized use is not permitted.	Same as above.
Semi-Primitive	Some opportunity for isolation from the sights and sounds of man, but not as important as for primitive opportunities. Opportunity to have a high degree of interaction with the natural environment, to have	Area is characterized by a predomunantly unmodified natural environment of moderate to large size. Concentration of users is low and there is often evidence of other area users. On-site controls and restrictions may	Same as the above, plus the following: ORV Use (4-WD, Dune Buggy, Dirt Bike, Snowmobile) Power Boating.

OPPORTUNITY CLASS	EXPERIENCE OPPORTUNITY	SETTINC OPPORTUNITY	ACTIVE OPPORTUNITY
	moderate challenge and risk, and to use outdoor skill. Explicit opportunity to use motorized equipment while in the area.	be present, but are subtle. Facilities are provided for the protection of resource values and the safety of users only. Spacing of groups may be formalized to disperse use and limit contact between groups. Motorized use is not permitted.	
Roaded Natural	About equal opportunities for affiliation with other user groups and for isolation from sights and sounds of man. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities are not very important except in specific challenging activities. Practice of outdoor skills may be important. Opportunities for both motorized and nonmotorized recreation are present.	Area is characterized by a generally natural environment with moderate evidence of the sights and sounds of man. Resource modification and utilization practices are evident, but harmonize with the natural environment. Concentration of users is low to moderate with facilities sometimes provided for group activity. On-site controls and restrictions offer a sense of security. Rustic facilities are provided for user convenience as well as for safety and resource protection. Conventional motorized use is provided for in construction standards and design of facilities .	All activities listed previously, plus the following: Picnicking Rock Collecting Wood Gathering Auto Touring Downhill Skiing Snowplay Water Skiing & OtherWater Sports Hang Gliding Interpretive Use Rustic Resorts and Organized Camps
Modern Urban	Opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. Experiencing the natural environment, and the use of outdoor skills are largely unimportant.	Area is characterized by a highly modified environment, although the background may have natural elements. Vegetation is often exotic and manicured. Soil may be protected by surfacing. Sights and sounds of man, on-site are predominate. Large numbers of users can be expected. Modern facilities are provided for the use and convenience of large numbers of people. Controls and restrictions are obvious and numerous. Facilities for high intensity motor use and parking are present with forms of mass transit often available.	All activities listed previously.

APPENDIX C
MAMMAL, AMPHIBIANS/REPTILE LIST FOR DONNER UND BLITZEN RIVER

MAMMAL LIST
By Guy Sheeter - Wildlife Biologist

Preble's (Malheur) Shrew (Sorex preblei)	Inhabits riparian and dry bunchgrass areas, may be common on Steens up to 9,200 feet; State rare species list.
Merriams Shrew (Sorex merriami)	Found on lower slopes of Steens Mountain and one unconfurmed record on sand dunes in the Alvord Basin; State rar~ species list.
Vagrant Shrew (Sorex vagrans)	Primarily found in wet meadows and less so in bunchgrass area< in the Alvord Basin up to 9,000 feet elevation. Most common shrew in the area.
Water Shrew (Sorex palustris)	Inhabits streams and lakes on Steens Mountain from 7,600 feet elevation to the base.
Little Brown Bat (Myotis lucifugus)	Congregates in buildings near marsh feeding areas, also roosts in trees and rimrock.
Yuma Myotis (Myotis yumenensis)	Similar habits as little brown bat.
Long-eared Myotis (Myotis euotis)	Abundant, roosts in rimrock and snags.
Long-legged Myotis (Myotis volans)	Fairly widespread through the area, but probably not abundant; roosts in rimrock and trees.
California Myotis (Myosotis californicus)	Widespread, but not abundant, crevice dwellers.
Small-footed Myotis (Myosotis leibii)	Common in the Alvord Basin and recorded up to 6,000 feet; roosts in rimrock.
Pallid Bat (Antrozous pallidus)	Fairly common; roosts in small caves and crevices.
Bushy-tailed Woodrat (Microtus montanus)	Restricted to rimrock and talus slopes up to 8,400 feet, absent from basin floor.
Montane Meadow Mouse (Microtus montanus)	Common in wet meadows in the Alvord Basin and in mountains up to 9,000 feet.
Long-tailed Vole (Microtus longicaudus)	Primarily found in transition areas between wet and dry meadows from 4,600 feet to 8,600 feet.

Sagebrush Vole (Lagurus curtatus)	Found in bunchgrass-sagebrush areas up to 9,400 feet; no records below 5,400 feet.
Muskrat (Ondantra zibethicus)	Recorded from west side of Steens Mountain in marshes and large streams up to 7,000 feet. Mann ! ~ke.
Westem Jumping Mouse (Zapus princeps)	Riparian areas on Steens up to 8,600 feet, also recorded from Trout Creek Mountains.
Beaver (Castor canadensis)	Permanent streams and some lakes, found only in Wildhorse Creek and Denio Creek on east side of Steens and Pueblo Mountains.
Porcupine (Erethizon dorsatum)	Widely distributed in the mountains; in the basins it is found near creek beds, willow thickets and meadows.
Coyote (Canis latrans)	Widespread throughout the area, especially meadows, roadside marshes and riparian habitats.
Raccoon (Procyon lotor)	Found in riparian areas up to 5,400 feet. Found on east side of Steens?
Long-tailed Weasel (Mustela frenata)	Widespread up to 8,400 feet.
Mink (Mustela vison)	Found on west side of Steens Mountain along watercourses up to 6,000 feet.
River Otter (Lutra canadensis)	Introduced to the Malheur National Wildlife Refuge. Sightings have been reported in the Little Blitzen Canyon.
Badger (Taxidea taxus)	Widespread in areas where ground squirrels and pocket gophers occur.
Yellow Pine Chipmunk (Eutamias amoenus)	Riparian areas on Steens Mountain from 5,800 feet to 9,400 feet.
Northern Pocket Gopher ~Thomomys talpoides)	Common from base of Steens Mountain up to 9,000 feet.
Little Pocket Mouse (Perognathus longimembris)	Common in isolated areas in mixed saltbush communities, rocky flats with sparse vegetation and some dune areas.
Great Basin Pocket Mouse (Perognathus parvus)	More widespread than little pocket mouse in sagebrush and hopsage communities where sandy to sandy loam soil occurs. Found in the Alvord Basin and on Steens Mountain up to 8,60(feet on overgrazed areas.
Western Harvest Mouse tReithrodontomys megalotis)	Most common along marsh edges and saltgrass meadows, but also occurs sporadically in sandy areas and cliffs to 5,000 feet.
Deer Mouse (Peromyscus maniculatus)	Widespread, found in all habits except marshes up to 9,400 feet The most abundant mammal in the area.
Canyon Mouse (Peromyscus crinitus)	Restricted to rimrock areas, on lower slopes of east and west side of Alvord Basin.
Big Brown Bat (Eptesicus fuscus)	Uncommon in the area, in riparian areas; roosts in tree holes, snags and human structures (buildings and bridges).

Silver-haired Bat (Lasionycteris noctivagans)	Migratory, associated with trees, collected in several areas in th~ Alvord Basin and canyon mouths on Steens Mountain.
Hoary Bat (Lasiurus cinereus)	Characteristically found in riparian areas, uncommon in area, roosts in trees.
Townsend's Big-eared Bat (Plecotus townsendii)	Recorded from Catlow Valley; roosts in a variety of structures, prefers dark dry areas such as caves.
Western Pipistrelle (Pipistrellus hesperus)	Found on talus slopes, east side of Steens Mountain and along walls of deep canyons.
Pika (Ochotona princeps)	Found on talus slopes, east side of Steens Mountain and along walls of deep canyons.
Black-tailed Jackrabbit (Lepus californicus)	Common throughout the area up to 7,000 feet, except wet areas.
Nuttall's (Mountain) Cottontail (Sylvilagus nuttallii)	Locally abundant around creeks, marshes, meadows, rocky areas and dense stands of sagebrush.
Yellow-bellied Marmot (Marmot flaviventris)	Colonies found near rock rubble and broken rimrock from 4,20(feet to 9,000 feet.
Belding Ground Squirrel (Syermophilus beldingi)	Found locally in meadows in Alvord Basin and widespread on Steens Mountain.
Townsend Ground Squirrel (Spermophilus townsendi)	Prefers dry grasslands, with shallow soil. Present?
Golden-mantled Ground Squirrel (Spermophilus lateralis)	Widespread over Steens Mountain, especially in dry deep soil with rocks or logs above 4,500 feet.
Antelope Ground Squirrel (Ammospermophilus leucurus)	Widespread in Alvord Basin, excluding wet meadows and marshy areas.
Least chipmunk (Eutamias)	Occurs in many habitats in the Alvord Basin up to 9,000 feet on Steens Mountain.
Striped Skunk (Mephitis mephitis!	Rare on lower slopes of mountains.
Spotted Skunk (Spilogale gracilis)	Found on lower slopes of mountains.
Mountain Lion (Felis concolor)	Rare, reported from mountains. One sighting near county road near Catlow Rim. One near Page Springs on Malheur National Wildlife Refuge.
Bobcat (Lynx rufus)	Widely distributed up to 7,000 feet elevation.
Mule Deer (Odocoileus hemionus)	Widespread where there is adequate water.
Rocky Mountain Elk (Cervus canadensis)	Few in the area.
Pronghorn Antelope (Antilocapra americana)	Widespread

Primary sources of information:

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An Ecological Study of the Alvord Basin Sand Dunes, Southeastern Oregon. 1980. Final Technical Report NSF-OS0. Oregon State University.

AMPHIBIANS AND REPTILES LIST
by Guy Sheeter - Wildlife Biologist

Spadefoot toad (Scaphiopus intermontanus)	Found wherever temporary and permanent poops exists exist at lower elevations.
Western Toad (Bofo boreas)	Sporadic distribution at lower elevations; found up to 9,200 feet.
Pacific Tree Frog (Hyla regilla)	Abundant in permanently wet meadows, springs, ponds and lakes up to 7,400 feet.
Spotted Frog (Rena pretiosa)	One record at Fish Lake, 1981 record from Blitzen River.
Bullfrog (Rena catasbiena)	Found in lower Blitzen River near Page Springs Campground.
Sagebrush Lizard (Sceloporus gracious)	Common in dense stands of sagebrush, greasewood and rabbitbrush.
Western Fence Lizard (Sceloporus occidentalis)	Frequently found around rock outcrops at lower elevations.
Side-blotched Lizard (Uta stansburiana)	Found in a variety of habitats, usually where there are some rocky areas.
Western Skink (Eumces skiltonianus)	Rocky areas from base of Steens to 6,400 feet.
Night Snake (Hypsiglena torquata!	Rare, secretive snake.
Yellow-bellied Racer (Coluber constrictor)	Occasionally seen at lower elevations up to 5,600 feeL
Rubber Boa (Charina bottae)	Rare, recorded from base of Steens Mountain up to 5,800 feet.
Striped Whipsnake (Masticophus taeniatu)	Fairly uncommon, found in a variety of habitats.

Gopher Snakes (Pituophis melanoleucus)	Widespread along edge of basins and lower slopes of mountains.
Common Garter Snakes (Thamnophis sirtalis)	Uncommon, found in riparian areas up to 6,400 feet.
Western Aquatic Garter Snake (Thamnophis elegans)	The most widespread and numerous reptile on Steens Mountain. Also common around water in the basins.
Western Rattlesnake (Crotalus viridis)	Most common near rimrock areas, where winter dens are located.

Primary sources of information:

Hansen, C.G. 1956. An Ecological Survey of the Vertebrate Animals on Steens Mountain, Harney County, Oregon. PhD Thesis Oregon State University, Corvallis.

A Preliminary Ecological Survey of the Alvord Basin. 1976. Final Technical Report NSF-SOF (76-08175) Eastern Oregon State College.

An Ecological study of the Alvord Basin Sand Dunes, Southeastern Oregon. 1980. Final Technical Report (NSF-OSO). Oregon State University.

APPENDIX D
SPECIAL STATUS, RARE, THREATENED AND ENDANGERED SPECIES
DONNER UND BLITZEN RIVER WILD AND SCENIC AREA

SPECIES	U.S. FISH AND WILDLIFE SERVICE STATUS	OREGON DEPT. FISH AND WILDLIFE STATUS	OREGON DEPT. OF AGRICULTURE STATUS	OREGON NATURAL HERITAGE PROGRAM
MAMMALS				
Wolverine		S P		2
Califomia Bighorn Sheep	C2			4
Pacific Westem Big-eared bat	C2	SC		2
Spotted bat	C2			2
BIRDS				
Bald eagle	LT	LT		1
American peregrine falcon	LE	LE		1
Northem goshawk		SC		3
Swainsons hawk		SV		3
Ferruginous hawk	C2	SV		3
Burrowing owl		S C		3
*Trumpeter swan (introduced in Oregon)				
Barrow's golden eye		S P		4
Bufflehead		S P		2
Greater sandhill crane		SV		4
American white pelican		SV		2
White-faced ibis	C2	SV		4
Westem sage grouse	C2	SV		4
Yellow-billed cuckoo		S C		2
Bobolink		S C		3
Lewis woodpecker		S C		3
Westem bluebird		SV		4
Black rosy finch (only found near summit)		SP		3
AMPHIBIANS				
Spotted frog		S C		
FISH				
Redband trout	C2	SV		3
Malheur Mottled Sculpin	C2	S C		3
SENSITIVE PLANT SPECIES LIST				
Cusick horsemint				2
*slimleaf onion				
sierra onion				2
lanceleaved grapefem				2

SPECIES	U.S. FISH AND WILDLIFE SERVICE STATUS	OREGON DEPT. FISH AND WILDLIFE STATUS	OREGON DEPT. OF AGRICULTURE STATUS	OREGON NATURAL HERITAGE PROGRAM
gray moonwort				2
pinnate grapefern				2
little grapefern				4
*back sedge				
new sedge				
Steens Mountain paintbrush			SC	1
*Peck thistle				
sierra spring-beauty				4
Hayden cymopterus				2
Cusick draba				4
moss gentian				2
slender gentian				2
one-flowered goldenwerd				4
*Bolander quillwort				
least rush				3
alpine lily				3
*small-leaved lupine				
nodding melic				2
*Copelands owlclover				
Davidson penstemon				4
Drummond willow				4
wedge-leaf saxifrage				2
weakstemmed stonecrop				4
scapose catchfly				4

*No status as of yet, but considered a sensitive species.

Definitions

Endangered taxa are those which are in danger of becoming extinct within the foreseeable future throughout all or a significant portion of their range.

Threatened taxa are those likely to become endangered within the foreseeable future.

LE = Listed Endangered. Taxa listed by the USFWS as Endangered under the Endangered Species Act (ESA), or by the State of Oregon Department of Agriculture (ODA) and ODFW under the Oregon Endangered Species Act of 1987 (OESA).

LT = Listed Threatened. Taxa listed by the USFWS, ODA, or ODFW as Threatened..

SC = State Critical. Species for which listing as threatened or endangered is pending; or those for which listing as threatened or endangered may be appropriate if immediate conservation actions are not taken. Also considered critical are some peripheral species which are at risk throughout their range and some disjunct populations.

SV = State Vulnerable. Species for which listing as threatened or endangered is not believed to be imminent and can be avoided through continued or expanded use of adequate protective measures and monitoring. In some cases, the population is sustainable, and protective measures are being implemented; in others, the population may be declining and improved protective measures are needed to maintain sustainable populations over time.

SP = State Peripheral or Naturally Rare. Peripheral species refer to those whose Oregon populations are on the edge of their range. Naturally rare species are those which had low population numbers historically in Oregon because of naturally limiting factors. Maintaining the status quo for the habitats and populations of these species is a minimum requirement. Disjunct populations of several species which occur in Oregon should not be confused with peripheral.

C2 = Candidate 2. USFWS candidates which need additional information in order to propose as Threatened or Endangered under the Endangered Species Act.

Oregon Natural Heritage Program List (ONHP)
1. Taxa threatened with extinction or presumed to be extinct throughout the entire range.
2. Taxa threatened with extinction or presumed to be extinct in Oregon.
3. Review list for species where more information is needed before status can be determined
4. Taxa of concern but not currently threatened or endangered.

APPENDIX E
AQUATIC HABITAT INVENTORY
DONNER UND BLITZEN RIVER

Segment A - Donner und Blitzen River
Mainstem not surveyed in 1991.

Segment B - Little Blitzen River

Reach	River Mile	Condition
18	0.0 - 1.5	Fair
19	1.5 - 3.1	Fair
20	3.1 - 4.0	Fair
21	4.0 - 4.9	Fair
35	7.8 - 10.3	Good
38	10.3 - 11.4	Good

Segment C - South Fork Donner und Blitzen River

Reach	River Mile	Condition
28	0.0 - 1.8	Good
29	2.8 - 3.7	Good
30	3.7 - 4.7	Good
39	4.7 - 5.8	Good
34	5.8 - 6.8	Good
31	7.3 - 8.0	Fair
32	9.7 - 10.9	Poor
33	10.9 - 12.5	Poor
10	12.5 - 13.8	Poor
13	15.2 - 16.6	Poor
	Deep Creek	
15	0.0 - 0.8	Poor
16	0.8 - 1.1	Poor
17	1.4 - 1.8	Fair

Segment D - Indian and Big Indian Creek

Reach	River Mile	Condition
22	0.0 - 1.1	Fair
23	1.1 - 2.1	Fair
24	2.1 - 2.6	Good
25	2.6 - 4.5	Good
27	4.5 - 5.7	Good
36	9.4 - 10.8	Excellent

Segment E - Little Indian Creek

Reach	River Mile	Condition
26	0.0 - 1.2	Good

Segment F - Fish Creek
Not surveyed in 1991.

APPENDIX F
UNIQUE NATURAL AREAS/BOTANICAL SPECIES LIST
FOR THE DONNER UND BLITZEN RIVER

Segment	Description
A	Page Springs riparian zone - Extensive native sedge meadow - Diversity of riparian plant species - Black cottonwood dominated riparian area
B	Meadow/riparian complex at Riddle Brothers Ranch - Extensive bottomland - Black cottonwood dominated riparian zone - Diverse stream morphology Rooster Comb RNA/ACEC - Designated RNA/ACEC - Mountain mahogany/bluebunch wheatgrass community - Numerous sensitive plant species Little Blitzen RNA/ACEC - Designated RNA/ACEC for 5 plant community cells - Numerous sensitive plant species
C	South Fork Canyon riparian zone - Extensive low elevation canyon riparian community - Sensitive plant species Huffman Camp meadow - Low elevation aspen - Good condition uplands - Meadow South Fork headwaters - Springs - High elevation wetlands - Low elevation wetlands
D	Big Indian mahogany - Good condition mountain mahogany communities including mountain mahogany/mountain snowberry, mountain mahogany/bluebunch wheatgrass, mountain mahogany/bluebunch wheatgrass-Idaho fescue, mountain mahogany-western juniper/bluebunch wheatgrass and mountain mahogany-quaking aspen/mountain snowberry-Idaho fescue-blue wildrye Big Indian headwaters - Linear terraced wetlands

Segment	Description
	- Sensitive plant species Big Indian cirque - Native cirque wellands - Alpine ponds - Sensitive planL species
E	Little Indian riparian zone - Riparian habitat including ferns and other west Cascade species - Western birch dominant Little Indian beaver pond area - Good condition linear wetlands - Aspen/willow forest - Sensitive plant species Little Indian side slopes - Mountain snowberry/mountain big sagebrush community - Mountain mahogany community - Aspen community Little Indian headwaters - Diverse wetlands - Subalpine hillslopes wetlands - Sensitive plant species
F	Fish Creek beaver ponds - Extensive aspen forests - Meadows, ponds created by beaver ponds - Numerous wetlands - Sensitive plant species Headwaters of Fish Creek - Meadows in a gentle basin - Sensitive plant species

GENERAL SPECIES LIST
BLITZEN WILD AND SCENIC RIVER

TREES/SHRUBS

Alnus incana	mountain alder
Amelanchier alnifolia	serviceberry
Artemisia arbuscula	low sagebrush
Artemisia tridentata	big sagebrush
Artemisia tridentata spp. vaseyana	mountain big sagebrush
Atriplex spinosa	spiny hopsage
Berbens repens	Oregon grape
Betula occidentalis	westem birch
Ceanothus velutinus	tobacco brush
Cercocarpus ledifolius	curlleaf mountain mahogany
Chrysothamnus nauseosus	rubber rabbitbrush
Chrysothamnus viscidiflorus	green rabbitbrush
Comus stolonifera	redosier dogwood
Crataegus douglasii	black hawthom
Holodiscus discolor	creambush oceanspray
Holodiscus dumosus	oceanspray
Jun~perus communis	mountain juniper
Juniperus occidentalis	westem juniper
Leptodactylon pungens	prickly phlox
Lonicera spp.	honeysuckle
Populus tremuloides	quaking aspen
Populus trichocarpa	black cottonwood
Prunus emarginata	bittercherry
Prunus virginiana	chokecherry
Purshia tridentata	antelope bitterbrush
Ribes aureum	golden currant
Ribes cereum	squaw currant
Ribes hudsonianum	black currant
Ribes inerme	white-stem gooseberry
Ribes spp.	gooseberries
Rosa woodsii	Wood rose
Rosa woodsii v. ultramontana	pearhip rose
Salix amygdaloides	peach-leaf willow
Salix boothii	Booth willow
Salix commutata	undergreen willow
Salix drummondiana	Drummond willow
Salix exigua	coyote willow
Salix geyeriana	Geyer willow
Salix lasiandra	Pacific willow
Salix lemmonii	Lemmon willow
Salix phylicifolia	tealeaf willow
Salix rigida	rigid willow
Salix scouleriana	Scouler willow
Salix spp.	willows

Sambucus cerulea	blue elderberry
Symphoricarpos oreophilus	mountain snowberry
Tetradymia canescens	gray horsebrush

FORBS

Achillea millefolium	western yarrow
Aconitum columbiana	monkshood
Actxa rubra	baneberry
Agastache cusickii	Cusick horsemint
Agastache urticifolia	nettle-leaved horsemint
Agoseris aurantiaca	orange agoseris
Agoseris spp.	false-dandelion
Allium acuminatum	tapertip onion
Allium amplectens	slim-leaf onion
Allium campanulatum	Sierra onion
Allium spp.	onion
Alyssum alyssoides	page alyssum
Amsinckia intermedia	fueweed fiddleneck
Amsinckia menziesii	Menzies fiddleneck
Antennaria microphylla	rose pussytoes
Antennaria spp.	pussytoes
Aquilegia formosa	red columbine
Arabix hoelboelii	Hoelboell rockcress
Arabis sparsiflora	sicklepod rockcress
Arabis spp.	rockcress
Arenaria rubella	reddish sandwort
Arenaria spp.	sandwort
Arnica mollis	hairy arnica
Arnica sororia	twin arnica
Arnica spp	arnica
Artemisia dracunculus	tarragon
Artemisia ludoviciana	Louisiana sage
Asclepias speciosa	showy milkwed
Aster alpigenus	alpine aster
Aster alpinus	boreal aster
Aster foliaceus	alpine aster
Aster spp.	aster
Astragalus curvicarpus	curvepod milkvetch
Astragalus filipes	threadstalk milkvetch
Astragalus lentiginosus	specklepod milkvetch
Astragalus obscurus	arcane milkvetch
Astragalus purshii	wooly-pod milkvetch
Astragalus spp.	milkvetch
Athyrium felix-femina	ladyfern
Balsamorhiza sagittata	arrowleaf balsamroot
Barbarea orthoceras	American wintercress
Botrychium minganense	gray moonwort
Botrychium simplex	little grapefern
Botrychium spp.	grapeferns
Brickellia microphylla	small-leaved brickellia
Brodiaea hyacinthina	hyacinth brodaea
Camassia quamash	common camas
Camelina microcarpa	littlepod falseflax
Camissonia tanacetifolia	tansy-leaved evening primrose
Campanula rotundifolia	Scotch bellnower

Cardamine pensylvanica	Pennsylvania bittercress
Castilleja applegateii	wavy-leaved paintbrush
Castilleja linearifolia	Wyoming Indian paintbrush
Castilleja miniata	thin-leaved paintbrush
Castilleja pilosa v. steenesis	Steens Mountain paintbrush
Castilleja spp	Indian paintbrush
Cerastium benngianum	alpine chickweed
Cerastium spp.	chickweed
Cerastium viscosum	sticky chickweed
Cerastium vulgatum	common chickweed
Chenopodium albus	lambsquarter
Cirsium arvense	Canada thistle
Cirsium peckii	Steens Mountain thistle
Cirsium spp.	thistle
Cirsium utahense	Utah thistle
Cirsium vulgare	bull thistle
Clarkia pulchella	ragged robin
Clarkia rhomboidea	common clarkia
Claytonia nevadensis	Sierra spring-beauty
Clematis ligusticifolia	westem clematis
Collinsia parviflora	blue-eyed mary
Collomia grandiflora	large-flowered collomia
Collomia tinctoria	orange-staining collomia
Crepis acuminata	taper-tip hawksbeard
Crepis atrabarba	slender hawksbeard
Crepis spp.	hawksbeard
Cryptantha intermedia	common cryptantha
Cryptantha supp.	cyrptantha
Cryptantha watsonii	Watson cryptantha
Cuscuta spp.	dodder
Cymopterus nivalis	Hayden cymopterus
Cystopteris fragilis	brittle bladderfem
Delphinium spp.	larkspur
Descurainia pinnata	westem tansymustard
Descurainia sophia	flixweed
Descurainia spp.	tansymustard
Dipsacus sylvestris	teasel
Dodecatheon spp.	shooting star
Draba crassifolia	thick-leaved draba
Draba sphaeroides v. cusickii	Cusick draba
Epilobium alpinum	alpine willowweed
Epilobium angustifolium	fireweed
Epilobium minutum	small-flowered willowweed
Epilobium spp.	willowweed
Epilobium watsonii	Watson willowweed
Equisetum spp.	horsetail
Erigeron divergens	spreading fleabane
Erigeron peregrinus	subalpine daisy
Erigeron philadelphicus	Philadelphia daisy
Erigeron spp.	fleabane
Erigonum heracleoides	shrubby buckwheat
Eriogonum spp.	buckwheat
Eriogonum strictum	strict buckwheat
Eriogonum vimineum	broom buckwheat
Eriophyllum lanatum	wooly sunflower
Erodium cicutarium	fillaree
Floerkia proserpinacoides	false-memmaid

Fragaria virginiana	wild strawberry
Frasera speciosa	giant frasera
Fritillaria atropurpurea	chocolate lily
Galium aparine	goose-grass
Galium spp.	bedstraw
Gayophytum spp.	groundsmoke
Gentiana affinis	prairie gentian
Gentiana calycosa	mountain bog bentian
Gentiana prostrata	moss gentian
Gentianella tenella	slender gentian
Gentianopsis simplex	
Geranium oreganum	westem geranium
Geranium spp.	geranium
Geranium viscossisimum	sticky geranium
Geum macrophyllum	large-leaved avens
Geum triflorum	old-man's whiskers
Gilia spp.	gilia
Gnaphalium palustre	lowland cudweed
Habenaria dilatata	while bog orchid
Hackelia floribunda	many-flowered stickseed
Hackelia micrantha	blut stickseed
Haplopappus uniflorus ssp. linearis	one-flowered goldenweed
Helenium hoopsii	orange sneezeweed
Heracleum lanatum	cow parsnip
Heterocodon rariflorum	heterocodon
Heuchera spp.	alumroot
Hieracium cynoglossoides	houndstongue hawkweed
Hieracium spp.	hawkweed
Holosteum umbellatum	jaggedchickweed
Horkelia fusca	tawny horkelia
Hydrophyllum capitatum	ballhead waterleaf
Hypericum anagalloides	bog St. Johnswort
Hypericum formosum	western St. Johnswort
Illiamna rivularis	streambank globemallow
Iris missouriensis	western blue flag
Ivesia baileyi	Bailey ivesia
Lactuca serriola	prickly lettuce
Lactuca spp.	lettuce
Layia glandulosa	tidytips
Lemna minor	water lentil
Lepidium perfoliatum	clasping pepperweed
Ligusticum grayii	Gray licorice-root
Ligusticum spp.	licorice-root
Limosella aquatica	mudwort
Linanthastrum nuttallii	Nuttall linanthastrum
Linanthus harknessii	Harkness linanthus
Linanthus spp.	linanthus
Lithophragma spp.	prairie star
Lithospermum arvense	corn gromwell
Lithospermum ruderale	wayside gromwell
Lloydia serotina	alp lily
Lomatium spp.	lomatium
Lomatium triternatum	nine-leaved lomatium
Lupinus caudatus	tailcup lupine
Lupinus leucophyllus	velvet lupine

Lupinus Iyallii ssp. minutifolia	small-leaved lupine
Lupinus microcarpus	chick lupine
Lupinus spp.	lupine
Machaeranlhera spp.	hoaryaster
Marchantia polymorpha	liverwort
Marrubium vulgare	horehound
Medicago lupulina	black medicago
Mentha arvensis	common rieldmint
Mentzelia dispersa	small-flowered mentzelia
Mertensia ciliata	streamside bluebell
Mertensia cusickii	Toiyabe bluebell
Mertensia spp.	bluebell
Microseris spp.	false agoseris
Microseris troximoides	false agoseris
Mimulus breviflorus	shortawn monkeyflower
Mimulus brewerii	Brewer monkeyflower
Mimulus guttatus	yellow monkeyflower
Mimulus moschatus	musk flower
Mimulus primuloides	primrose monkeyflower
Mimulus lewisii	Lewis' monkeyflower
Mimulus spp.	monkeyflowers
Mitella pentandra	alpine mitrewort
Monardella odroritissima	monardella
Montia chamissoi	water montia
Montia linearis	narrowleaved montia
Montia perfoliata	miners lettuce
Myosurus minima	least mouse-tail
Navarettia breweri	yellow-flowered navarettia
Naverettia spp.	navarettia
Nemophila parviflora	small-flowered nemophila
Nemophila pedunculata	meadow nemophila
Nemophila spp.	nemophila
Oenothera flava	yellow evening primrose
Orobanche corymbosa	flat-topped broom rape
Orthocarpus copelandii v. cryptandrus	Copeland owlclover
Orthocarpus spp.	owlclover
Osmorhiza occidentalis	westem sweet-root
Paeonia brownii	brown peony
Parietaria pensylvanica	pellitory
Parnassia fimbriata	Rocky Mountain parnassia
Parnassia palustris	northern grass-of-Parnassus
Pedicularis groenlandica	elephant's head
Penstemon davidsonii v. praeteritus	Davidson penstemon
Penstemon deustus	hotrock penstemon
Penstemon oreocharis	herbaceous penstemon
Penstemon procerus	small-flowered penstemon
Penstemon rydbergii	Rydberg penstemon
Penstemon speciosus	showy penstemon
Perideridia spp.	yampah
Perideridia bolanderi	Bolander yampah
Perideridia gairdneri	Gairdner yampah
Phacelia hastata	silverleaf phacelia
Phacelia heterophylla	varileaf phacelia
Phacelia linearis	thread leaf phacelia

Philonotis fontana	moss
Phlox longifolia	longleaf phlox
Plagiobothrys scouleri v. penicillatus	Scouler plagiobothrys
Plagiobothrys spp.	popcorn flower
Plectritis macrocera	longhorn plectritis
Polemonium occidentale	western polemonium
Polygonum aviculare	knotweed
Polygonum bistortoides	American bistort
Polygonum spp.	knotweed
Polystichum munitum	western swordfern
Potamogeton spp.	pondweed
Potentilla breweri	Brewer cinque foil
Potentilla drummondii	Drummond cinquefoil
Potentilla fruticosa	shrubby cinquefoil
Potentilla glomerata	Great Basin cinquefoil
Potentilla gracilis	slender cinquefoil
Potentilla occidentalis	western cinquefoil
Potentilla spp.	cinquefoils
Prunella vulgaris	self-heal
Ranunculus alismaefolius	water-plantain buttercup
Ranunculus aquatilis	white-water buttercup
Ranunculus cymbalaria	shore bttercup
Ranunculus macounii	Macoun buttercup
Ranunculus occidentalis	western buttercup
Ranunculus repens	creeping buttercup
Ranunculus spp.	buttercup
Ranunculus testiculatus	bur buttercup
Ranunculus uncinatus	little buttercup
Rheum rhapponticum	rhubarb
Rorippa curvisiliqua	western yellow cress
Rorippa nasturtium-aquaticum	watercress
Rudbeckia occidentalis	blackhead
Rumex acetosella	sheep sorrel
Rumex crispus	curly dock
Rumex spp.	dock
Saxifraga adscendens v. oregonensis	wedge-leaf saxifrage
Saxifraga arguta	brook saxifrage
Saxifraga occidentalis	western saxifrage
Saxifraga oregana	Oregon saxifrage
Saxifraga spp.	saxifrage
Scutellaria anturrhinoides	skullcap
Scutellaria spp.	skullcap
Sedum debile	weak-stemmed stonecrop
Senecio cymbaLariodes	alpine meadow butterweed
Senecio foetidus v. hydrophiloides	tall groundsel
Senecio serra	butterweed
Senecio spp.	groundsel
Senecio streptanthifolius	cleft-leaved groundsel
Senecio triangularis	arrowleaf groundsel
Sibbaldia procumbens	creeping sibbaldia
Sidalcea oregana	Oregon checkermallow
Silene menziesii	Menzie silene
Silene oregana	Oregon silene
Silene scaposa ssp. scaposa	scapose catchfly
Sisymbrium altissimum	Jim Hill mustard

Sisyrinchium idahoense	Idaho blue-eyed grass
Sisyrinchium angustifolium	blue-eyedgrass
Smilacina racemosa	western soloman seal
Smilacina stellata	starry solomon seal
Solidago canadensis	meadow goldenrod
Solidago missouriensis	Missouri goldenrod
Solidago multiradiata	northem goldenrod
Solidago occidentalis	westem goldenrod
Solidago spp.	goldenrod
Sonchus asper	prickly sowthistle
Sphenosciadium capitellatum	woolly-head parsnip
Spiranthes romanzoffiana	ladies-tresses
Spraguea umbellata	pussypaws
Stellana~amesiana	sticky starwort
Stellaria longipes	long-stalk starwort
Stellaria spp.	starwort
Stephanomeria tenuifolia	narrowleaved skeletonweed
Streptanthus cordatus	heart-leaved streptanthus
Taraxacum officinale	common dandelion
Thalictrum fendleri	fendler meadowrue
Thalictrum occidentale	westem meadowrue
Thalictrum spp.	meadowrue
Thermopsis montana	golden pea
Thlaspi arvense	field pennycress
Tragopogon dubius	meadow salsify
Trifolium hybridum	alsike clover
Trifolium longipes	long-stalked clover
Trifolium microcephalum	small-head clover
Trifolium spp.	clovers
Trifolium wormskjoldii	springbank clover
Urticadioecia	stinging nettle
Valeriana sitchensis	Sitka valerian
Veratrum californicum	false-hellebore
Verbascum thapsis	common mullein
Veronica americana	American speedwell
Veronica arvensis	common speedwell
Veronica humifusa	speedwell
Veronica peregrina	purslane speedwell
Veronica serphyllifolia	thyme-leaved speedwell
Veronica spp.	speedwell
Veronica wormskjoldii	American alpine speedwell
Vicia americana	vetch
Viola adunca	hook violet
Viola purpurea	purplish violet
Viola spp.	violet
Woodsia orgegana	western woodsia
Wyethia spp.	mules ears
Zigadenus elegans	death camas
Zigadenus venenosus	meadow death camas

GRASS/GRASSLIKE

Agropyron cristatum	crested wheatgrass
Agropyron dasystachyum	thickspiked wheatgrass
Agropyron repens	quackgrass
Agropyron smithii	westem wheatgrass

Agrophron spicatum	bluebunch wheatgrass
Agropyron spp.	wheatgrass
Agropyron trachycaulum	slender wheatgrass
Agrostis alba	redtop
Agrostis exarata	spike bentgrass
Agrostis interrupta	interrupted bentgrass
Agrostis humilus	alpine ben~grass
Agrostis tenuis	colonial bentgrass
Agrostis spp.	bentgrass
Alopecurus aequalis	shortawn foxtail
Bromus carinatus	mountain brome
Bromus mollis	soft brome
Bromus spp.	brome
Bromus tectorum	cheatgrass
Bromus vulgaris	Columbia brome
Carex athrostachya	slender beaked sedge
Carex atrata v. erecta	blackened sedge
Carex aurea	golden sedge
Carex backii	Back sedge
Carex douglasii	Douglas' sedge
Carex fillifolia	thread-leaf sedge
Carex geyerii	elk sedge
Carex hoodii	Hood sedge
Carex jonesii	Jones' sedge
Carex lanuginosa	wooly sedge
Carex lenticularis	tufted sedge
Carex luzulina	woodrush sedge
Carex microptera	small-wing sedge
Carex multicostata	many-ribbed sedge
Carex nardina	spike sedge
Carex nebraskensis	Nebraska sedge
Carex nova	new sedge
Carex petasata	Liddon sedge
Carex praegracilis	clustered field sedge
Carex raynoldsii	Raynold sedge
Carex rossii	Ross' sedge
Carex rostrata	beaked sedge
Carex scirpoidea	single-spike sedge
Carex scopulorum	Holm Rocky Mountain sedge
Carex sheldonii	Sheldon sedge
Carex spectabilis	showy sedge
Carex stipata	saw-beak sedge
Carex vallicola	valley sedge
Carex vesicaria	inllated sedge
Carex spp.	sedges.
Dactylis glomerata	orchard grass
Danthonia unispicata	one-spike oatgrass
Deschampsia atropurpurea	mountain hairgrass
Deschampsia caespitosa	tufted hairgrass
Deschampsia danthonoides	annual hairgrass
Deschampsia elongata	slender hairgrass
Eleocharis pauciflora	few-flowered spike-rush
Elymus cinereus	basin wildrye
Elymus glaucus	blue wildrye
Elymus spp.	wildrye
Elymus triticoides	creeping wildrye
Festuca idahoensis	Idaho fescue

Festuca ovina	sheep fescue
Glyceria borealis	northern mannagrass
Glyceria spp.	mannagrass
Glyceria striata	fowl mannagrass
Hordeum brachyantherum	meadow barley
Hordeum leporinum	charming barley
Isoetes bolanderi	Bolander quillwort
Juncus balticus	Baltic rush
Juncus bufonis	toad rush
Juncus hemiendytus v. abjectus	least rush
Juncus nevadensis	Nevada rush
Juncus oxymeris	pointed rush
Juncus regelii	regel rush
Juncus spp.	rush
Koelaria cristata	prairie junegrass
Luzula campestris	field woodrush
Luzula spp.	woodrush
Melica bulbosa	oniongrass
Melica geyeri	Geyer oniongrass
Melica spectabilis	showy oniongrass
Melica spp.	oniongrasses
Melica stricta	nodding melic
Muhlenbergia filiformis	slender muhly
Phleum alpinum	alpine timothy
Phleum pratense	common timo~hy
Poa ampla	big bluegrass
Poa annua	annual bluegrass
Poa cusickii	Cusick bluegrass
Poa nevadensis	Nevada bluegrass
Poa palustrus	fowl bluegrass
Poa pratensis	Kentucky bluegrass
Poa secunda	Sandbergs bluegrass
Poa spp.	bluegrasses
Puccinellia pauciflora	weak mannagrass
Pyrola asarifolia	leafless pyrola
Scirpus acutus	hardstem bulrush
Scirpus microcarpus	small-fruit bulrush
Scirpus spp.	bulrush
Sitanion hysterix	bottlebrush squirreltail
Stipa columbiana	Columbia needlegrass
Stipa lettermanii	Letterman needlegrass
Stipa occidentalis	westem needlegrass
Stipa spp.	needlegrasses
Stipa thurberiana	Thurber needlegrass
Trisetum spicatum	spike trisetum
Typha latifolia	cattail
Ventenata dubia	ventenata

APPENDIX G
LAWS AND REGULATIONS

1. The Wild and Scenic Rivers Act, Amendment: Public Law 100-557: 100th Congress, S.2148: October 28, 1988.

2. The Wild and Scenic Rivers Act: Public Law 90-542: 90th Congress 119: October 2, 1968.

3. Federal Land Policy and Management Act: Public Law 94-579: 94th Congress S.507: October 21, 1976.

4. 43 Code of Federal Regulations:
   Subchapter F - Wildlife Management (6000)
   Subchapter G - Recreation Programs (8000)
   Subpart 3809 - Surface Management
   Part 7 - Protection of Archaeological Resources

APPENDIX H
PLANNING PARTICIPANTS

Bureau of Land Management

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Michael T. Green, District Manager
Donald R. Cain, Associate District Manager
Victor E. Pritchard, Assistant District Manager, Resources
Glenn T. Patterson, Assistant District Manager, Andrews Resource Area

Staff Participation

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Mark L. Armstrong, Public Affairs Officer
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Bruce M. Crespin, Archaeologist
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APPENDIX I
BIBLIOGRAPHY

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APPENDIX J
MANDATORY ITEMS
Burns District Office

	Potentially Impacted*	No Impact	Not Present On Site	Evaluator
* 1. Threatened or Endangered Species	X			Hall
2. Floodplains		X		McDonald
* 3. Wilderness Values	X			Moore
* 4. Areas of Critical Environmental Concern	X			Hall
5. Water Resources		X		McDonald
6. Air Quality		X		McDonald
* 7. Cultural or Historical Resource Values	X			Crespin
8. Prime or Unique Farmlands			X	McDonald
* 9. Wild and Scenic Rivers	X			McDonald
*10. Wetlands/Riparian Zones	X			Sheeter
* 11. Native American Religious Concerns			X	Crespin
12. Hazardous Wastes of Solids		X		McDonald

*Items checked are discussed in EA.

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DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
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