

**Crooked River Ranch Trails Project**  
**EA Number: OR-056-07-108**

*Date of Preparation: August, 2008*  
*Deschutes Resource Area, Prineville, Oregon*



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# **1. INTRODUCTION: PURPOSE OF AND NEED FOR ACTION**

## ***1.1 Introduction***

This Environmental Assessment (EA) has been prepared for the Prineville District's and Crooked River National Grassland's proposed Crooked River Ranch Trails Project. The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA assists the BLM and Crooked River National Grassland (CRNG) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a "Finding of No Significant Impact" (FONSI). A FONSI is a document that briefly presents the reasons why implementation of the proposed actions will not result in "significant" environmental impacts (effects) beyond those already addressed in the Middle Deschutes/Lower Crooked Wild and Scenic Rivers' Management Plan (1992), the Upper Deschutes Resource Management Plan (2005), and the Crooked River National Grassland Management Plan (1989). If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project or the project would be dropped. A decision record (DR) may be signed following public comment on the EA to document the decision.

## ***1.2 Background***

The unincorporated community of Crooked River Ranch, Oregon is located between the Crooked River Canyon to the east and the Deschutes River Canyon to the west. Both of these river canyons are designated as Federal Wild and Scenic Rivers (W&SR); with the portions of the Deschutes River additionally designated as a Wilderness Study Area (WSA). Rapid growth of the Crooked River Ranch (CRR) community and the entire Central Oregon region has resulted in increased human use and conflicts on public lands, and elevated concerns regarding natural resources in these special management areas.

## ***1.3 Description of the Proposed Action***

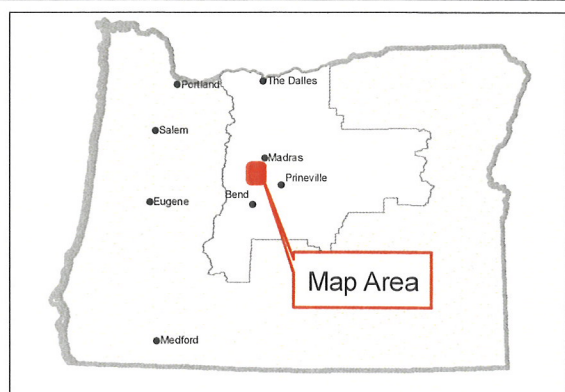
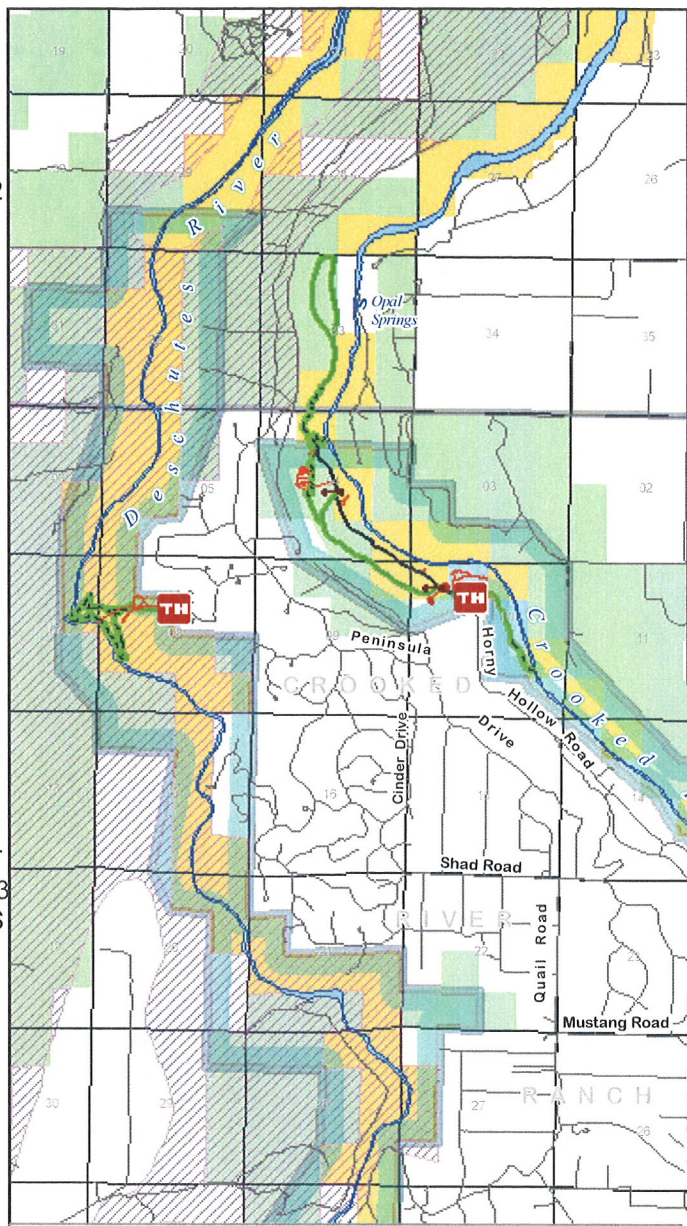
The proposed action would consist of trailhead development and trail construction, rehabilitation and signage at two locations adjacent to the Crooked River; see Map 1, Crooked River Vicinity, for proposed action location. The Otter Bench trailhead would be developed at the end of the paved portion of Horny Hollow Road within the Lower Crooked W&SR. The Scout Camp



T 12 S

T 13 S

T 14 S



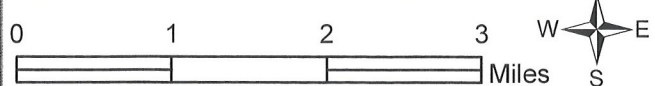
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**Legend**

- Gate
- Seasonal Closure Gate
- Proposed Trailhead
- New Construction
- Reconstruction
- Proposed Trail Obliteration
- Road, Administrative use
- Road
- Wilderness Study Area
- Wild and Scenic River
- Administered Lands**
- Bureau of Land Management
- Crooked River National Grasslands
- State
- Private/Unknown



**Map 1: Crooked River Vicinity**

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

Rock Quarry

NW 43rd Street

Lower Bridge Way

Terrebonne

R 12 E

R 13 E

trailhead would be located at the end of the graveled portion of Scout Camp Road within the Steelhead Falls WSA and Middle Deschutes W&SR. Trailhead development would include fencing, gravel parking areas, vehicular barriers, sign boards and some form of access control (gates, walkovers, etc.). At both locations trails would be constructed or rehabilitated to provide designated trails that are sustainable and maintainable. Unneeded trails would be closed and rehabilitated. Details of the proposed action, including trailheads and trails, are provided in section 2.2 below. Otter Bench project work would occur on public lands managed by Bureau of Land Management (BLM), Oregon Department of Fish and Wildlife (ODFW) and Crooked River National Grassland (CRNG) within the Lower Crooked W&SR boundary. Project work at the Scout Camp location would occur wholly on BLM administered lands within the Middle Deschutes W&SR boundary, Steelhead Falls WSA, and within the State Scenic Waterway.

The project is located in Jefferson County, at:

1. Otter Bench project area

Township (T) 13 South (S), Range (R) 12 East (E), Sections 4, 9, and 10

T 12 S, R 12 E, Section 33

2. Scout Camp project area

T 13 S, R 12 E, Section 7 and 8

## **1.4 Purpose and Need**

The purpose of the proposed action would be to reduce erosion and loss of vegetation due to unmanaged vehicle use and unmaintained roads and trails in the Crooked and Deschutes River canyon areas. The proposed action would also increase and enhance nonmotorized trail opportunities in the CRR area.

The need for the proposed action is related to a variety of social and natural resource factors. Public access in both river canyons at CRR is limited to relatively few locations which are experiencing increasing use levels. Conditions at river access points include an increasingly dense network of user created roads as well as steep and unmaintainable user created river access trails. The trend at these access points is one of increasing vegetative disturbance, dumping, and eroding river banks. Given the ongoing population growth in central Oregon, specifically at CRR, degradation of resources and increased pressure for nonmotorized trail use is occurring. Poor condition of user created river access trails at CRR have resulted in numerous hiking related accidents as indicated by search and rescue reports over the last decade, as well as dangerous conditions for agency staff accessing monitoring locations along the rivers.

The proposed action responds to specific direction stated in the Upper Deschutes Resource Management Plan (UDRMP, 2005) and the Crooked River National Grassland Management Plan (CRNGMP, 1989) related to providing access and identifiable nonmotorized recreation. Specific objectives are detailed in section 1.6 of this document.

The proposed action also responds to direction in the Middle Deschutes/Lower Crooked Wild and Scenic Rivers' Management Plan (1992). While in general, the W&SR Plan calls for limited

development of recreational facilities, it places emphasis on management actions related to recreation that maintain outstandingly remarkable values (ORVs) of both river corridors (see Section IV, Implementation and Monitoring Strategy of the W&SR Plan). The W&SR Plan states that “Recreation opportunities will be limited to specific geographic areas or excluded if resource monitoring determined that recreation use has a significant, adverse impact on outstandingly remarkable values.” The W&SR Plan further states: “public access may be limited to existing roads and trails or restricted or closed in specific locations if resource monitoring determined that significant impacts to outstandingly remarkable values occurred...” Direction for trail management includes the statement that horse, llama and mountain bike use will continue to be allowed in “accessible” areas throughout the two corridors unless monitoring determines these types of activities are inappropriate or are adversely impacting outstandingly remarkable values.

The combination of a user created, unmaintained network of trail routes, coupled with increasing levels of use has resulted in impacts to outstandingly remarkable values (ORVs) due to erosion of steep hill slopes into the canyons. In both river canyons, affected ORVs include scenic, wildlife, botanical and hydrologic resources. In addition to degradation of ORVs, the lack of designated, maintained river access trails has resulted in regular and repeated trespass on private lands – most notably on the Crooked River, at Hollywood Road and at Opal Springs.

## **1.5 Issues**

Landowner contacts, agency consultations (CRNG and ODFW), and internal scoping identified several issues concerning the proposed trailhead development and trail management actions.

1. **ACCESS:** The closure of unmaintained roads could reduce ease of access for some public land visitors.
2. **Off Highway Vehicle (OHV) activity** occurring near unmaintained portions of both the extensions of Scout Camp and Horny Hollow Roads has created a network of roads/ways which are causing vegetative disturbance as well as opportunities for dumping.
3. **NEIGHBORHOOD/LOCAL USE:** Restricting motorized use through closures may shift dumping and shooting from public to private lands. Development of a trailhead with parking may increase conflicts with adjacent residents.
4. **WILDLIFE MANAGEMENT:** There are concerns over the level of vehicle use and public activities on the edge of the canyon, particularly during nesting season for raptors. Increased visitation to the area is a concern during sensitive periods.
5. **INCREASED VISITATION/USE OF CROOKED AND DESCHUTES CANYONS:** Development of trailhead parking areas and designated trails may result in increased visitation to the project area. Improvements and identification of designated river access trails may increase the use of these trails, including routes used as take out points for kayakers. Increased use may lead to trespass on private property if not adequately managed on public lands.
6. **WILDERNESS STUDY AREA MANAGEMENT:** Elimination of vehicle use within the WSA would help maintain wilderness suitability. However, development of a parking area and boundary fence may impair wilderness suitability in the immediate area. Such development is allowed under the Interim Management Policy (IMP) if it is the minimum

necessary for public health and safety in the use and enjoyment of wilderness values, and the minimum necessary to protect wilderness resource values.

7. SAFETY ISSUES: Maintaining emergency access for fire and rescue on proposed road closure areas.

## **1.6 Conformance and Consistency with Land Use Plans**

The trailhead and trail development proposal have been evaluated and are consistent with provisions of the Upper Deschutes Resource Management Plan (UDRMP, Record of Decision, 2005), the Ochoco National Forest and Crooked River National Grassland Land and Resource Management Plan (CRNGMP Record of Decision, 1989), and the Middle Deschutes/Lower Crooked Wild and Scenic River Management Plan (W&SR, Decision Record, 1992). The UDRMP provides specific management guidance for the project area, which includes:

**Objective R-2:** Provide designated access points (includes entry points, parking areas, trailheads, and/or staging areas) to enhance visitor experience, protect resources, and minimize conflicts with adjacent landowners (UDRMP, Page 132).

**Guideline 3:** Designate trailheads for hiking access to Deschutes and Crooked Rivers. Move existing access points away from private residences if feasible and provide marked, defined parking areas and signed trails to public portions of river.

**Objective R-4:** Provide identifiable nonmotorized recreation opportunities to provide visitor satisfaction, protect natural resources, and minimize conflicts among public land visitors and adjacent land owners (UDRMP, Page 133).

**Guideline 1:** The Deschutes and Crooked River Corridors adjacent to Crooked River Ranch are designated Nonmotorized Recreation Exclusive and managed for nonmotorized trail use and river access.

**Objective W-4a – Primary Wildlife Emphasis:** Provide habitat that benefits wildlife and retains high wildlife use. Wildlife habitat is a primary management consideration in these areas (UDRMP, Pages 55-56) .

### **Area Specific Allocation/Allowable uses:**

1. Wild and Scenic River, Wilderness Study Area and River Riparian Habitat in Scattered Parcels: Primary Emphasis for riparian habitat, deer and elk winter range and raptor nesting and foraging habitats.

The CRNGMP also provides specific management guidance for the project area, which includes:

Maintain a natural landscape to enhance and protect recreational and scenic values;

Provide for semiprimitive nonmotorized recreational opportunities;

No motorized use allowed;

Improve trails as necessary to protect soil and watershed.



The W&SR Plan generally provides direction that does not favor facility development or designated trails. This direction may be in part due to the social setting that existed when the plan was developed – when central Oregon’s population was much smaller. However, the W&SR Plan does identify that the Scout Camp trailhead would receive basic site protection measures (boundaries, surfacing, sanitation facilities, etc.) if needed to address resource degradation. The issue of resource degradation due to braided roads and trail systems is accentuated by the Deschutes River canyon’s designation as a WSA.

The W&SR Plan provides overall guidance that existing roads and trails may be restricted or closed in specific locations if resource monitoring determines that impacts to outstandingly remarkable values occur. In addition, the W&SR Plan also identifies that horse, llama and mountain bike use would continue to be allowed in “accessible” areas in the river corridors unless monitoring determines these types of activities are inappropriate or are adversely impacting outstandingly remarkable values.

The proposed action is consistent with management direction for wildlife which calls for BLM to manage the project area with a low density of open, motorized travel routes due, to the project area’s designation in the UDRMP as primary emphasis for deer winter range, raptor nesting and foraging habitats.

## **2.0 ALTERNATIVES**

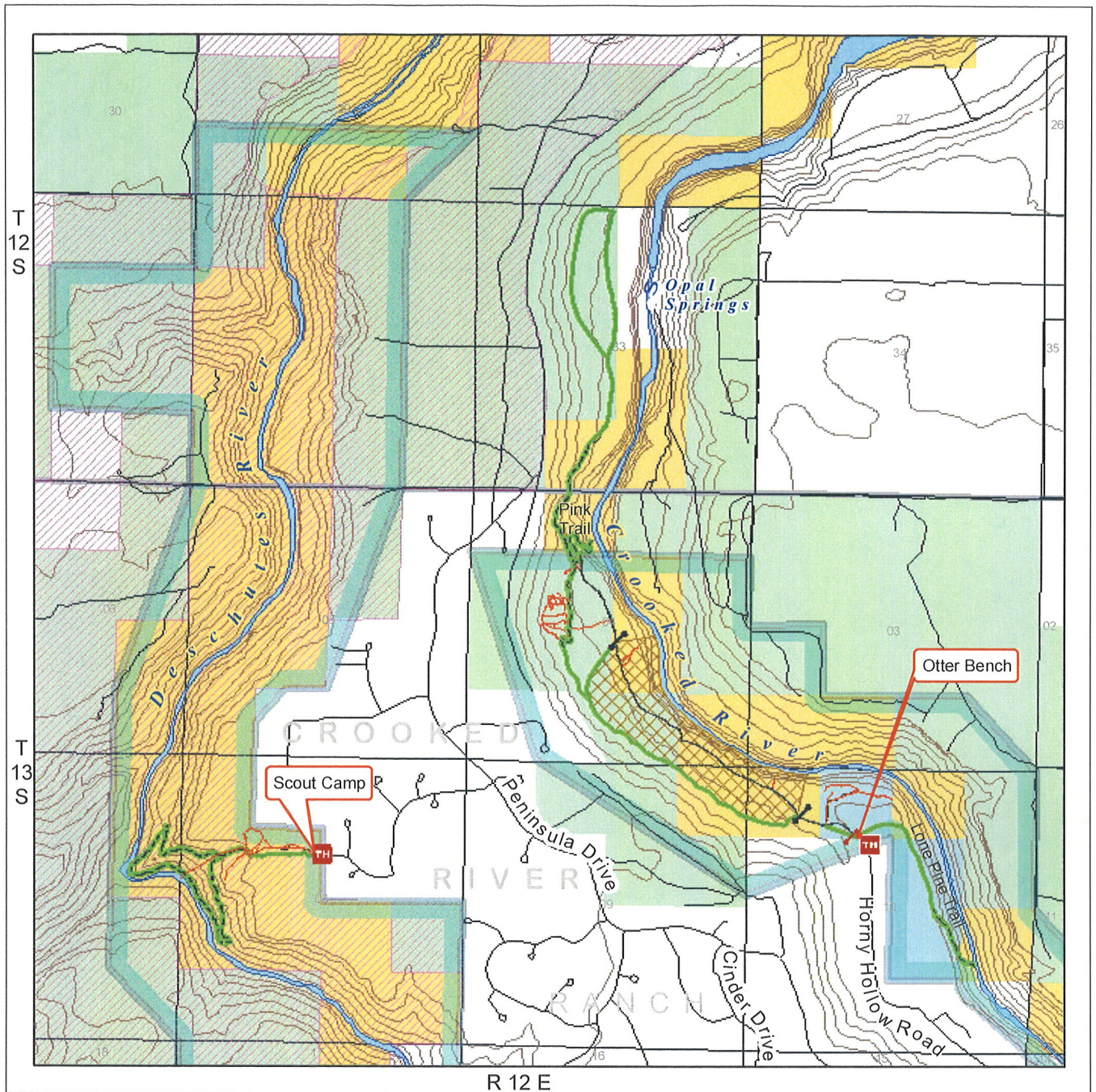
### **2.1 *No Action Alternative***

Under the no action alternative, motorized vehicle access would continue on the unmaintained 1.6 miles of road north of Horny Hollow Road. No trailhead or parking area would be developed. No trail improvements or rehabilitation would occur on river access trails, nor would any trail improvements be made to create a nonmotorized trail system from the end of Horny Hollow Road. The area would continue to be managed for vehicle use on the existing dead end road, while motorized use off the road, including use of the road/trail network at the end of the existing designated road, would be unauthorized.

Motorized vehicle access would continue on approximately 0.3 miles of designated route and an additional 0.5 miles which involves a braided road network and several road spurs within the Steelhead Falls WSA. No trail improvements would occur between the canyon rim and the river, with the public continuing to use the existing network of unmaintained trails. This use would continue to be restricted to nonmotorized use, allowing and including horses, other pack stock, hiking and mountain biking.

### **2.2 *Proposed Action Alternative***

The proposed action is divided into two previously summarized project areas, Otter Bench and Scout Camp; See Map2, Crooked River Trails Project, for detailed view of project location. Each project has similar overall objectives of eliminating resource impacts associated with user



**LEGEND**

- Gate
  - Seasonal Closure Gate
  - Proposed Trailhead
  - Proposed Trail
  - Proposed Trail Reconstruction
  - Proposed Trail Obliteration
  - Road, Administrative use
  - Road
  - 100 Foot Topographic Contours
  - Wildlife Seasonal Closure
  - Wilderness Study Area
  - Wild and Scenic River
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  - State
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**Map 2: Crooked River Trails Project**

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created roads and trails. The primary objectives are to address the issues presented in section 1.5. The proposed action can be summarized as:

1. Provide for a safe, nonmotorized recreational experience through construction / rehabilitation of designated trails, and closure of user created hiking trails and OHV routes.
2. Reduce resource damage and impacts to ORVs by unauthorized use.

The trail design criteria and wildlife mitigation common to both projects are presented prior to specific details of each project.

### **Trail Design Criteria**

The degree of difficulty level and design class for all trails in this project is referenced from Forest Service Handbook 2309.18 which covers design criteria for various types of trails (appendix A). The following Difficulty Level and Trail Class description have been used to describe the proposed trails:

#### Difficulty Level

- a. Easiest: A trail requiring limited skill with little challenge to travel
- b. More Difficult: A trail requiring some skill and challenge to travel
- c. Most Difficult: A trail requiring high degree of skill and challenge to travel

#### Trail Class Descriptions

- a. Class 2, Simple/Minor Development.
- b. Class 3, Developed/Improved

### **Wildlife Restrictions**

All trail and road rehabilitation work that is located within  $\frac{1}{4}$  -  $\frac{1}{2}$  miles of established raptor nesting areas would be done between September 1 and January 31, which is outside the sensitive period (2/1 -8/31). Heavy equipment would not be used from December 1 to April 30 to avoid disturbance of deer and elk. Project implementation would not occur during prime migratory bird nesting season between April 15 and July 30 unless the proposed activity areas are field checked by a biologist and it is determined that no nesting activity is actively occurring in those areas. Under these circumstances the project activity could proceed.

A seasonal wildlife closure area would be defined within the boundaries of the Otter Bench inland trail and Crooked River (Map 2). The trail access to this area would be closed to the public from February through August to protect sensitive bird foraging and nesting habitat. If it is subsequently determined that no nesting activity is actively occurring in those areas, then trail access could be opened.

## 2.2.1 Otter Bench Trail Complex

The proposed Otter Bench trail complex project consists of the following components:

- Development of a trail head and parking area
- Conversion of a dirt road to nonmotorized trail
- Rehabilitation of unauthorized travel routes
- Otter Bench trail construction
- Lone Pine and Pink trails construction and reconstruction

For the location of each of these project components, see Map 2. Details of each subproject follow.

### Otter Bench Trailhead Parking Area

Construct an oval, 160' long by 120' wide surfaced parking area with capacity for 12 vehicles (Diagram 1, Appendix C). The parking would consist of 10 diagonal slots for smaller vehicles up to 20 feet in length and two parallel slots for vehicles with horse trailers up to 40 feet in length. The parking area would be a loop with an internal island of existing rock and vegetation and surfaced with a 6-8 inch layer of 2 inch minus gravel obtained from a weed free source. Parking would be defined by wood bumpers for diagonal parking and wood bollards for the trailer parking. Two hitching rails for tying up horses would be constructed outside this perimeter near the trailer parking. Traffic would be directed in a clockwise flow around the internal island. The perimeter of the area would be defined by fences and large 3-4 foot diameter boulders placed 4-5 feet apart and 12-18 inches deep. Entry to the area would have a fence on both sides, using an existing fence on the left side (west) and a new four foot high, 300 foot long fence on the right (east). The new fence would be a three strand smooth wire designed to meet wildlife friendly standards of height above ground and spacing. Three trail access breaks in the perimeter fences would be defined by steel posts set 4 feet apart. A tubular steel gate would be installed where Horny Hollow Road exits the parking area. Directional signing would be placed at the entrance to the parking area and each trailhead. An informational kiosk would be constructed on the island, containing an overview map, interpretive information and use regulations.

### Horny Hollow Road Conversion to Trail

Beyond the parking area, the 1.6 miles of Horny Hollow road would be restricted to authorized administrative uses. Of the 1.6 miles of road, approximately 0.8 mile occurs on lands managed by CRNG, 0.1 mile is on State lands managed by ODFW and the remainder is BLM managed public land. Access would be restricted with a metal gate. The network of approximately 0.4 miles of user created routes off of Horny Hollow Road would be rehabilitated by ripping, scattering woody debris and seeding. The areas would be seeded with native plants such as bluebunch wheatgrass and bottlebrush squirreltail.



## Otter Bench Trail/Road

The Otter Bench trail system would be composed of four distinct sections: existing unmaintained extension of Horny Hollow Road (road), inland trail, connector trail, and north bench trail. The trail passes through a short portion of ODFW managed lands then alternates between BLM and CRNG managed lands (Map 2). The trail would start from a point about 100 feet east of the road gate and run for 0.1 mi. to the ODFW land boundary where it would join the road for about another 0.1 mi. At this point an inland (West) trail would be constructed to run along the base of the cliff. At a point approximately 1.0 mile beyond the start of the trail, a connector trail would be constructed between the inland trail and the road. This trail would connect back to the road and allow access to the area along the rim north of the sensitive wildlife habitat area.

Nonmotorized access on the road between the start of the inland trail to the connector trail would be seasonally closed to protect wildlife habitat. The inland trail would continue along the cliff beyond the connector trail for another 0.5 mi until it meets the end of the road. The 1.5 miles of existing road and 1.6 miles of inland trails would create a potential 3.1 mile loop. Starting from the north end of the road, an additional section of the trail, north bench section, would be developed along the old road bed now blocked by a slide. The trail would continue on for about 0.2 miles through a rock slide, then another 0.6 miles where it would split to form a 1.2 mile loop. This loop would be set back from the rim to avoid private property and disturbance to wildlife. The entire Otter Bench trail system would be designed for a variety of nonmotorized uses including pedestrian, equestrian and mountain bikes.

The total length of the Otter Bench trail /road including the connector section and road portions would be approximately 5.4 miles. Portions of the existing road would be filled in to eliminate deeper ruts. Approximately 4 miles of new trail would be construction on flat terrain through sagebrush and grasses with occasional open juniper stands. Construction of the inland trail could be done by hand with volunteers or youth crews. The level of difficulty would be "Easiest" with a Class 2/3 design criteria.

## Lone Pine Trail

The Lone Pine trail is predominantly on ODFW managed lands with a short section of less than 0.1 mile on BLM and CRNG managed lands. There would be approximately 0.5 miles of new trail constructed from the trailhead area to the canyon rim then south, along the canyon rim until it meets an existing trail that descends into the canyon. The new trail construction is on generally flat terrain and could be accomplished with volunteer and youth crews. The trail would meet the "Easiest" level with a Class 3 design criteria. The existing 0.2 mile trail into the canyon would be reconstructed to meet the "More Difficult level" and Class 2 design criteria utilizing an experienced trail crew. The trail would terminate at the river with no further development. This trail would be designated and signed for pedestrian (hiking) access only. The BLM and ODFW have completed an intergovernmental agreement to provide for the developments on ODFW lands described in this EA.

## Pink Trail

The Pink trail is entirely on BLM managed lands, descending into the canyon from a point where the end of Horny Hollow Road meets the first section of Otter Bench trail. This existing 0.5

miles of trail would be improved to meet the More Difficult level and Class 2 design criteria. Construction would be done by hand with an experienced trail crew. The trail terminates at the river where there would be no additional development. This trail would be designated and signed for pedestrian (hiking) access only.

Table 1 Summary of Otter Bench Projects

<b>Component</b>	<b>Construction Type</b>	<b>Length/ Area</b>	<b>Construction Method and Material</b>	<b>Trail Difficulty</b>	<b>User Restriction</b>
Otter Bench Trailhead	New	12,000 Sq Ft	Heavy equipment, gravel fencing, barrier posts	n/a	None
Road Closures/ Conversion to Trail	Maintained for Non Motorized Use	1.6 mi.	Gate	More Difficult	Admin. Only
	Obliteration	0.4 mi	Heavy equipment, seeding	n/a	Closed to motorized use
Otter Bench Trail			Hand Crew, Hand seeding		Non-motorized
Road	Existing	1.5 mi		Easiest	
Inland Includes connector	New	1.9 mi		Easiest	
North Bench	Reconstruction/ New	2.0 mi		More Difficult	
Lone Pine Trail			Hand Crew, Hand seeding		Hiker only
Section 1	New	0.5 mi		More Difficult	
Section 2	Reconstruction	0.25 mi		Most Difficult	
Pink Trail	Reconstruction	0.5 mi	Hand Crew, Hand Seeding	Most Difficult	Hiker only

## 2.2.2 Scout Camp Project

The proposed Scout Camp trail project consists of the following components:

- Construction of trailhead and parking area
- Road and route closure and rehabilitation
- Construction of trail to canyon rim
- Construction and reconstruction of loop trail into the canyon

For the location of each of these project components, see Map 2. Details of each subproject follows.

### Scout Camp Trailhead Parking Area

The trailhead would be a 40 by 60 foot rectangle located 6 feet beyond the BLM /private property line at the end of Scout Camp Road. This is within the Steelhead Falls WSA (Diagram 2, Appendix C). Parking would consist of 8 slots for vehicles up to 20 feet in length. Horse trailer space would not be provided since access is for pedestrian (hiker) only trails and the area between the trailhead and canyon rim is limited and not suitable for equestrian use. The parking surface would be a 6-8 inch layer of 2 inch minus gravel obtained from a weed free source. Parking would be defined by wood bumpers. The perimeter of the area would be defined by fences and large, 3-4 foot diameter rocks placed 4-5 feet apart and 12-18 inches deep. Entry to the area would be delineated by a new 200' length fence on either side. The fence would be three strand smooth wire designed to meet wildlife friendly standards of height above ground and spacing. The trail access would be defined by steel posts set 4 feet apart with a third post centered 3 feet back of the two. Directional and informational signing would be placed at the entrance to the parking area and at the trailhead.

### Road Closure and Obliteration

Scout Camp Road beyond the trailhead would be closed and the braided road obliterated. All spur roads/trails would be ripped and seeded. Obliteration would consist of mechanical ripping followed by seeding with native plants such as bluebunch wheatgrass and bottlebrush squirreltail. A total of 0.4 miles of road/trail would be treated.

### Trail to Canyon Rim

There would be approximately 0.2 miles of new trail constructed from the trailhead area to the canyon rim. The trail would be about 40 to 80 feet south and parallel to the existing road and would wind through flat terrain in moderately dense stand of juniper. Construction could be accomplished with volunteer and youth crews. The trail would be designated and signed for pedestrian use and meet the "Easiest level" with a Class 3 design criteria.

## Loop Trail into the Canyon

Existing user created trails would be transformed into a single loop trail starting from a point about 100 feet down the existing trail. Each branch of the trail would run up and down river, gradually descending into the canyon until meeting the river. A new 0.5 mile trail along the river upslope from the riparian zone would complete the loop. The total length of trail would be about 1.3 miles. Numerous user created trails including a set of trails in a gully (Gully Trails), would be rehabilitated with hand crews using native materials and follow-up seeding/planting with native plants. Total length of trail to be rehabilitated is estimated at 0.7 mile. The designated trail would be improved utilizing an experienced trail crew. Continued development of user created trails would be discouraged with natural barriers such as rocks and limbs. The downriver leg of the loop (Down Canyon) and the section along the river (River Trail) would be improved to meet a "More Difficult" level. The upriver leg (Up Canyon) would be improved to the "Most Difficult" level. The loop trail would have a Class 2 design criteria and be signed for hiker access only.

Table 2 Summary of Scout Camp Projects

<b>Component</b>	<b>Construction Type</b>	<b>Length Area</b>	<b>Construction Method and Material</b>	<b>Trail Difficulty</b>	<b>Trail Class</b>
Scout Camp Trailhead	New	2,400 Sq Ft	Machinery, Gravel, Fence, Barrier	n/a	n/a
Road Closure	Obliteration	0.8 mi	Barrier, Mech. Seeded	n/a	n/a
SC Trail			All Hand Crew, Native		All 2
TH to Rim	New	0.2		Easiest	
Gully rehabilitation	Obliteration	0.2		n/a	
Up Canyon	Reconstruct	0.3		Most Difficult	
Down Canyon	Reconstruct	0.5		Most Difficult	
River Trail	Reconstruct/new	0.5		More Difficult	



## **2.3 Alternatives considered but eliminated from further study**

### Otter Bench Area

The improvement of additional existing trails into the canyon was considered including possible connector trails along the river to form a loop between canyon trails. This would enhance recreation opportunities. Improving these trails to a reasonable level of difficulty and meet Class 1 trail standards was not deemed possible within reasonable cost constraints. This trail would also conflict with wildlife habitat.

### Scout Camp

Providing for a higher class trail for the loop trail was considered to decrease the level of difficulty. This alternative was eliminated because it would involve retaining walls and steps with associated increased trail construction costs. In addition, the visual impacts would not fit the wilderness character or visual management objectives of this area.

Reconstruction of the user created trail directly to the river from the point the loop trail divides below the rim (Gully Trail) was also considered. This trail would have been constructed if users continued to create a trail following the existing route directly down slope to the river. This trail would require considerable trail construction expertise to achieve a more difficult level, Class 3 design that would fit into the steep grade. Construction would include a sequence of steps. This higher level of development would be needed to prevent continued erosion on this type of soil and slope. This type of trail was considered incompatible with the wilderness character of the area as well as exceeding cost constraints.

## **3.0 AFFECTED ENVIRONMENT**

### **3.1 Location and setting**

The project area consists of portions of the Crooked and Deschutes River Canyons located adjacent to the northern end of Crooked River Ranch, a 2,500 lot unincorporated community in Deschutes and Jefferson Counties, Oregon. The project area is located about 20 miles north of Redmond, and 40 miles north of Bend, west of State Highway 97. Crooked River Ranch is the largest subdivision in Oregon (2000 census of 3,300 residents, 2003 population estimate of 4,500 to 5,000 people). Of the approximately 2,500 lots in CRR, 100 to 150 remain undeveloped. The ranch is expected to build out to a population of 8,000 within the next 10 years (2013). The ranch has about 128 miles of roads with approximately 15 paved road miles.

The Crooked River Ranch community is bordered by the following public lands:

- BLM lands (Steamboat Rock area) to the south.
- BLM lands (Steelhead Falls Wilderness Study Area and Middle Deschutes Wild and Scenic River) to the west.

- BLM and CRNG (scattered parcels along the Lower Crooked Wild and Scenic River) to the east.
- BLM and CRNG (the peninsula) to the north.

The only road access into the Crooked River Ranch community occurs from the south via Lower Bridge Road. The ranch's northern end (where the project area is located) is thus relatively remote and requires a drive throughout the entire ranch community to reach public lands in the proposed project area. Within the project area there are 2.5 miles of user created trails and an additional 2.8 miles of roads open for the general public. Public lands surrounding the ranch are used for a variety of recreation activities such as angling, hunting, target shooting, horseback riding, biking, hiking, wildlife viewing, picnicking, swimming, and camping.

#### Otter Bench Project Area

The project area consists of three mid-canyon plateaus resulting from prehistoric lava flows. From south to north, these include one plateau directly north of the paved Horny Hollow Road, a second immediately west of Opal Springs, and the third located just upstream of Lake Billy Chinook. The project area also includes the river canyon itself located immediately east of the mid-canyon plateaus.

Residential development along Horny Hollow Road is located immediately south of the project area. Residences are also located on the upper plateau (along Peninsula Drive) to the west. Motor vehicle use is generally restricted to the southernmost portion of the lower plateau located where Horny Hollow Road provides access to residential development. This area currently contains approximately 2 miles of road, of which about 1.6 miles are designated. The unmaintained, designated road is located adjacent to, and west of, the canyon rim. Several spur roads lead from the designated road to viewpoints and parking spots created on the canyon rim. Near the end of the road numerous user created roads and trails occur, primarily on lands managed by CRNG. Beyond the designated portion an old landslide blocks motor vehicle access to the two plateaus further north although a reasonably easy hiking route currently exists through the slide area.

This project area is generally in a natural condition. The scenic quality of the area has been determined to be an "outstandingly remarkable value" of the WSR based on the steep terrain, plateaus, volcanic tuff formations/pillars, water and vegetation. This section of river was designated as a Recreational WSR. From the proposed trailheads or trails, there are occasional views of homes perched on the upper plateau and an isolated commercial spring water development at Opal Springs within the canyon. This development has a pipeline and access road on the east side of the canyon.

#### Scout Camp Area

The project area is located on the east side of the Deschutes River approximately 0.5 miles upstream of the Deschutes River/Whychus Creek confluence. Access to the area is provided via Scout Camp Trail Road, a public road on Crooked River Ranch. Private lands adjacent to the project area consist of residences along Scout Camp Trail Road and North Meadow Drive. A

community pasture and public park (Panoramic Park) is located to the east of this residential area.

A 0.3 mile stretch of unmaintained road on BLM administered land connects Scout Camp Trail Road to a user created parking/camping spot on the edge of the Deschutes River Canyon within the 3,240 acre Steelhead Falls WSA. This user created parking/camping spot is located at the top of a large, steep draw that leads to the Deschutes River. In general, this side of the canyon is composed of loose, pumice soils vegetated with bunchgrasses, shrubs, wildflowers and juniper. No single, distinct trails exist and visitors have created multiple routes down the center and sides of the draw, resulting in redundant trails and eroding slopes.

## **3.2 Resource Condition**

### **Recreation**

Various aspects of recreation opportunities and existing activities are covered in the previous section of location and setting. Specific recreational use not covered follows.

#### **Otter Bench Area**

While these public lands are located at the northern end of CRR, they still receive visitation both from ranch residents and the general public. Access for anglers to reach the Crooked River is a major use, although horseback riding, OHV use, rock climbing, hunting, and target shooting are also popular pursuits. In general, kayak and rafting use of the canyon is limited by the lack of consistent, high volume flows. Kayakers generally take out in the vicinity of CRR by hiking out of the canyon using the improved road at Opal Springs or the abandoned Hollywood Road (both of which requires landowner approval), or they continue downstream to Lake Billy Chinook. River enthusiasts consider this portion of the Crooked River one of the best Class III/IV kayak runs in Oregon.

In general, angler access trails in the area are steep and erosive. However, this section of the canyon does not have an excessive number of user created river access trails. The area receives some dumping, including dead animals, appliances, and tires. Columnar basalt cliffs at the north end of the southernmost plateau have recently received increasing use by climbers including establishment of sport climbing routes.

#### **Scout Camp Area**

Like the Horny Hollow area, these lands are at the far northern end of CRR. While this location generally tends to limit visitation, the area still receives visitation from ranch residents and the general public. The most popular access point to the river is the Steelhead Falls trailhead located approximately 3.5 miles upstream from Scout Camp.

At Scout Camp, fishing is the primary recreational value sought after by those entering the canyon although the opportunity to hike a loop trail with a segment along the river does offer a scenic hiking experience. Other types of activities associated with the Otter Bench area are

generally not prevalent in the Scout Camp area due to the limited public accessible area above the rim. Occasional camping occurs at a point where the trail drops off the rim. There is evidence of limited OHV activity and shooting in this same area. Boating is limited to advance kayakers due to several significant (class V) falls on this section of the Deschutes River. There is no suitable road or trail access for takeout on this section of the river until traversing several miles of flat water on Lake Billy Chinook.

### **Visual Resources**

The scenic quality has been determined to be an “outstandingly remarkable value” of both Wild and Scenic Rivers based on the steep terrain, plateaus, volcanic tuff formations/pillars, water, vegetation and general absence of built features. The Scout Camp area of the project is within the Steelhead falls WSA and a designated scenic section of WSR.

The Visual Resource Management (VRM) Class designations for the project area can be found in Appendix D of the Draft Middle Deschutes /Lower Crooked Wild and Scenic Rivers’ Management Plan and Environmental Assessment, August 1992. The VRM Classifications for the project area range from Class 1 in the canyons to Class 2 and 3 above the rim and plateau areas. The definitions of each indicated Class, including management objectives, is contained in Appendix B.

### **Wilderness Characteristics**

The Otter Bench portion of the project does not possess wilderness characteristics since it fails to meet the minimum size requirement of 5,000 acres. The existence of roads, residential development and lack of required contiguous acreage eliminated this area for designation as WSA and those conditions have not changed.

The Scout Camp portion of the project is entirely within the Steelhead Falls WSA. This WSA was not recommended as suitable for wilderness designation due to its small size, limited wilderness opportunities, proximity to the CRR residential area and subsequent difficulty to manage for wilderness values such as solitude. The project area does have wilderness characteristics of naturalness and solitude within the canyon excluding the portion above of the rim, which is impacted by vehicular use and within site and sound of residences. The portion within the canyon also has outstanding recreational and special features listed for the W&SR.

### **Vegetation/Soils**

Vegetation classification of the area is juniper/sagebrush steppe. Riparian areas are composed of dense thickets of mountain alder, mock orange, red-osier dogwood, water birch, large expanses of cattails, sedges and rushes. The plateau area above and east of the Deschutes canyon includes relatively dense stands of juniper, while the Deschutes canyon slopes are generally unstable and sandy, with grass, some bitterbrush and only a few trees. Scattered ponderosa pine trees occur on the lower canyon slopes. In general, the canyon slopes on the west side of the river are more stable and heavily vegetated. The area sediments are aeolian and residual on top of the rim and are colluvium on the steep slope all the way to the river. Vegetation on the plateau west of the Crooked River is juniper woodland with an understory of shrubs, grasses and forbs. There are



several open areas where the trees are absent due to past agricultural practices and/or fire. The Crooked River steep canyon slopes are mostly shrubs, grasses and forbs with some juniper with loam to clay type soils.

## **Wildlife**

Habitat in the proposed project area is primarily juniper woodland and sagebrush with grass/forb understory and scattered bitterbrush generally along a bench overlooking the Crooked and Deschutes Rivers. The project's upland area is largely separated from the rivers by cliff faces that provide suitable nesting habitat for a variety of avian species including: golden eagles, prairie falcons, American kestrels, red-tailed hawks, violet green and cliff swallows, ravens, vultures, pigeons and canyon wrens. Upland areas likely provides potentially suitable nesting habitat for Virginia's warblers, gray vireos, Brewer's sparrows, and lark sparrows. The upland areas also likely provide suitable foraging habitat for golden eagles, prairie falcons, American kestrels and red-tailed hawks. No federally listed or proposed wildlife species are known to occur in the project area. The project area contains foraging and roosting habitat for fringed myotis, pallid bat, spotted bat, and Townsend's big-eared bat. Additionally the project area provides foraging habitat on the upper flats and roosting and reproductive habitat potential adjacent to the river. Species of local interest include deer, golden eagles and prairie falcons and portions of the proposed project fall within deer winter range.

Bats use cliffs and rock outcroppings to roost and often use the river and adjacent riparian areas for drinking and foraging. Bats will also forage in the uplands. While bald eagles may occasionally use this area, there are no significant nesting platforms for them and the river system is not large enough to provide enough forage for consistent use.

In the Otter Bench area, approximately 1.6 miles of natural surface/unimproved road, 1.25 miles of user created OHV trails, and 1.25 miles of user created hiking trails traverse portions of the project area. The Scout Camp area has 1.3 miles of user created trails and 0.3 miles of roads. Access to wildlife habitat is facilitated by these existing open roads and user created routes. Shooting areas accessed by roads are located within 1 mile of golden eagle and prairie falcon nest sites. These shooting areas are also located over cliffs where bats are likely to roost. Appendix E contains a listing of special status wildlife and species of local interest.

## **Watershed**

The project area has two distinct zones of soil and topography that affect potential for erosion related to roads and trails. The generally flat areas on the plateaus above the river have limited potential for erosion due the flat terrain and sandy to loamy type soils. The steep slopes of the canyon are susceptible to erosion and sloughing related to pedestrian use. There is evidence of gullies and sloughing from user created trails on both the Crooked and Deschutes canyons.

## Cultural

The project area encompasses similar environments along both rivers.

The Otter Bench trail system is situated on a broad bench high above the river. Access to the river from this bench is via a very steep, north-slope descent. Much of the eastern portion of the bench has seen surface disturbance from ranching/farming activity associated with the working Crooked River Ranch between the 1930s and 1960s. Evidence of this is exhibited in the eastern portion of the bench in the form of a juniper chaining/reseeding project and several developed stock ponds linked by a single shallow canal. Cattle were grazed over the eastern and western benches proposed for trail development. A dirt road was bulldozed across the bench and was cut across a steep face to access the western bench in the 1960s. A number of spur roads have been developed off this main road by Crooked River Ranch subdivision residents over the years to access the river, to hunt or target shoot, and to recreate with OHVs.

No previous cultural inventories have been conducted on or in the immediate vicinity of the Otter Bench project area. Pictograph sites are known for this portion of the Crooked River drainage but these are located outside of the project area and at the bottom of the river canyon. Other inventories have been conducted on the CRNG, north of the project area which resulted in the discovery of several surface lithic scatters and historic structural remains.

The Scout Camp trail system is a loop that begins near the eastern rim across from the Wychus Creek and Deschutes River confluence. The trail gradually descends the steep canyon slope, parallels the river upstream, then ascends the steep canyon slope to the spot of the trails beginning. Vegetation is sparse in this area. From this area, users have created random paths to the river for fishing and other recreation pursuits.

No previous inventories have been conducted on or in the immediate vicinity of the Scout Camp project area. Up river, over a mile south, several sites have been recorded near the river. These sites are all prehistoric and represent shell middens, rock shelters and small shell/lithic scatters. None of these are in the project area.

From the archaeological perspective, the probability of finding significant sites within the project area is low to moderate. The types of sites that might be located, based on site setting and previous work in the general area, include prehistoric pictographs, rock shelters, lithic scatters, shell middens, historic structure remains, and historic trash dumps.

All proposed project areas were inventoried at an intensive level. The results of the cultural field observations are contained in Appendix D

## **4.0 ENVIRONMENTAL CONSEQUENCES**

### **4.1 *Effects of the No Action Alternative***

#### **Recreation**

Under the no action alternative for recreation, unrestricted motorized use would continue to limit opportunities for primitive recreation experience. The ease of motorized access to the canyon rims for a variety of activities would continue, but availability of nonmotorized trail outside the canyons would be limited to the same roads. The opportunity for an additional 7.7 miles of nonmotorized trail would not be realized. Trails proposed for rehabilitation would not be improved and would remain hazardous for all nonmotorized use. Use of these trails by bikes and horses would pose additional safety risks. The existing patterns and levels of recreational use would continue and possibly grow with the general population increase in Crooked River Ranch and nearby communities in central Oregon. This would include unauthorized activities such as OHV activity, shooting, dumping and fires. Impacts to private lands such as dumping, shooting and uncontrolled parking would continue and may increase with population growth.

#### **Visual Resources**

Visual impairment associated with multiple trailing, unmaintained, braided roads and surface disturbance from OHV tracks would continue and increase with time. The VRM Class I area at Scout Camp would not meet its VRM objectives. Other areas would meet their Class objectives but visual impacts of multiple rutted or sloughing trails within the canyons would continue.

#### **Wilderness Characteristics**

##### **Otter Bench**

An evaluation of the Otter Bench project area for wilderness characteristics indicated that the area does not have wilderness characteristics since it does not meet the minimum size as well as other criteria. This area remains segregated from the Steelhead Falls WSA by CRR developments and roads.

##### **Scout Camp**

Under the no action alternative, unmanaged use would continue to degrade the wilderness character of the Steelhead Falls WSA through unauthorized expansion of the parking/camping area at the canyon rim, creation of braided roads between Scout Camp trail and the rim, and expansion of the user created trail system down the canyon slope. This alternative would allow continued impairment of the areas suitability for wilderness designation due to this type of disturbance.

## **Vegetation**

Areas where native vegetation has been displaced to bare ground or weeds would remain with implementation of the no action alternative. These areas may expand and new areas develop depending on population trends of the surrounding area.

## **Wildlife**

Disturbance to wildlife from motorized use would continue. This includes target shooting from motorized access points on the rim which disrupts a variety of bird species. Loss of habitat from motorized activities, including denudation and direct seasonal disturbance would continue. Use levels on trails may increase marginally depending on population growth in the surrounding area. This type of unmanaged use would continue to disrupt not only birds but large game animals within the project area. For detailed effects to wildlife see Appendix E.

## **Watershed**

Current trends in trail and road erosion would continue. Trails into both canyons would continue to develop gullies or have sloughing of material down-slope. Additional trails would be created as existing ones become more difficult to use and users seek alternate routes.

## **Cultural**

Current potential impacts to cultural resources from user created motorized and nonmotorized use would continue. The potential impacts include surface disturbance of both historic and prehistoric sites from vehicular activity. Although no specific impacts have been documented, the likelihood of continued expansion of OHV routes could impact noninventoried areas. New, user created, nonmotorized trails could also impact sites in noninventoried areas.

## **4.2 Effects of the Proposed Action**

### **Recreation**

#### **Otter Bench**

The proposed action at Horny Hollow Road would decrease opportunities for motorized recreation adjacent to Crooked River Ranch due to the loss of 1.5 miles of designated road. Opportunities would remain for this use on BLM lands south of the ranch (Steamboat Rock) as well as CRNG lands north of the ranch (The Peninsula). The closure to motorized use will address concerns of both vegetative disturbance and dumping which degrade aesthetic qualities of the area. This section of road would however remain available for administrative and emergency access.

Closure of 1.5 miles of unmaintained road would not eliminate access to the climbing area known as The Hollows, which is on the slope going from the mid to upper plateau. Most access to this area occurs with a short hike from Peninsula Drive, not from Horny Hollow Road.



Visitors wishing to access the climbing area from Horny Hollow Road would have the ability to park at the new Otter Bench trailhead and hike 1.5 miles to the climbing area.

The proposed action for Otter Bench would increase nonmotorized recreation opportunities by developing nearly 4.4 miles of trail for equestrian, hiking and other nonmotorized use. The improvement of the two trails to the river would provide improved, safer access for fishing.

Development of the trailhead parking area with informational and regulatory signage should reduce conflicts with adjacent landowners. Limiting information on the proposed recreational development to signage within the project area should reduce the potential to attract additional visitation/use.

During construction activity at trailheads and on existing trails, visitors may need to use alternate parking and routes to access the canyon. This impact would be short term, lasting no more than two weeks for each component of the project.

### Scout Camp

The proposed action at Scout Camp would enhance recreation. Provision of a parking area with a trail winding through the juniper to the canyon rim would increase the scenic values and experience for hikers. Closure of 0.3 mile of road out to the canyon rim would eliminate opportunities for vehicular access, but would likely increase more primitive qualities of the experience for those willing to hike the short distance to the canyon rim. Access for administrative and emergency use should not pose an obstacle for such a short distance.

The small parking area would help limit vehicle numbers parked along the public portion of Scout Camp Road in front of nearby residences, minimizing conflicts and disturbances. Future options may be explored to link an off-site parking area (e.g., Panoramic Park) to the WSA with separate trail connections on CRR, CRNG and BLM holdings. Parking area size would be limited to no more than a six car capacity to discourage an increase in use.

Trail improvements would improve the recreation experience including access for fishing. These improvements would also increase scenic quality and provide a safer trail while retaining a relatively primitive and natural experience.

The proposed action would close 1.5 miles of trail at Scout Camp to equestrian use due to topography and loose soils. Development of additional designated trails north of Horny Hollow Road would mitigate this impact by providing additional equestrian trail opportunities. However, ranch residents who live near the Scout Camp trailhead would be affected by having to trailer their horses to the Horny Hollow Road area which is approximately 6 miles by road.

The proposal includes designating both Scout Camp and Otter Bench trailheads as day use only. Dispersed camping access from these two trailheads would be discouraged. Limiting information on the proposed recreational development to signage within the project area should reduce the potential to attract additional visitation/use.

The short term impact to visitors from construction activity would be similar to those described for Otter Bench.

## **Visual Resources**

The Otter Bench trailhead would meet the objectives of a VRM Class III area. The parking area would be subordinate to the existing landscape and not dominate the view of the casual observer. This site is located within 0.1 mile of several residences. The parking area would be within their viewshed.

The Otter Bench trails complex is located within a range of VRM Classes I through III. The trails Class 2 design, which blends into the landscape, would comply with the most stringent VRM Class I objectives to preserve the existing landscape. Reconstruction of existing trails in the Class I area would include the removal of multiple user created trails. This would enhance the scenic quality in these areas by reducing visual impacts of multiple, highly eroded trails. Construction of trails in VRM Class II and III areas would not be evident in the landscape and would not attract the attention of the casual observer.

The Scout Camp trailhead would be constructed at the border of a VRM Class I area whose visual quality is already impacted by roads and adjacent residences. The parking area would be kept as close to the BLM / private land boundary as feasible. The size would be limited to fit within an existing impacted area with minimal removal of trees. The trailhead would meet Class III objectives of not dominating the view of the casual observer. The changes would be evident but moderate and repeat basic elements found in the existing landscape.

The Scout Camp trail would be a Class 2 design which meets the basic criteria for a VRM Class I area. The new section of trail from the trailhead to the rim would blend into the stand of juniper. This is proposed to avoid interference with obliterating and rehabbing the existing braided road. Rehabilitation of the roadbed would remove a visual impact not meeting VRM Class I objectives. Multiple trails within the canyon would be reconstructed to a single loop. The net impact of trail removal and reconstruction would enhance visual quality and bring this area into better compliance with VRM Class I objectives.

## **Wilderness Characteristics**

Otter Bench

Same as the No Action Alternative

Scout Camp (Steelhead Falls WSA)

The Scout Camp portion of the proposed action would occur entirely within the Steelhead Falls WSA. Any management activity within a WSA must comply with BLM's Interim Management Policy for Lands Under Wilderness Review. With implementation of the proposed action, rehabilitation of unmaintained road networks and undesignated drive in parking/camping spots on the canyon rim at the Scout Camp project area would not impair wilderness suitability. Planting of native species for rehabilitation is consistent with preserving wilderness characteristics of the area. Motor vehicle control would prevent cross country vehicle use in the WSA. The elimination of OHV activity will address concerns of both vegetative disturbance and dumping which degrade wilderness values. Trail stabilization and visitor information would

reduce the current rate of erosion and impairment of wilderness suitability. Use of heavy equipment to complete rehabilitation of the road network as well as other manual work on the trails is permissible under Interim Management Policy for lands under wilderness review.

Development of a small parking area at or near the edge of the WSA is considered the minimum necessary tool for maintaining wilderness values and protecting public safety. This parking area would ensure continued public access while controlling expansion of disturbed areas due to increasing use levels. The parking area would meet item four of the Interim Management Policy for lands under wilderness review (IMP, Chapter I, Nonimpairment, b.4.) because wilderness quality would increase over the long term by controlling vehicle use. Although natural character of the WSA would be reduced at the parking area, the area's overall natural character would increase over time. If the WSA is considered for wilderness designation the parking area itself could be kept outside the wilderness boundary.

Upon completion of the project the overall naturalness and scenic quality of a hike from the parking area into the canyon would increase. Short term impacts from noise and visibility of heavy equipment used to complete the project should last no longer than two weeks from the time construction and obliteration begins.

## **Vegetation**

A botanical inventory of the project area was completed in 2007 (Report No. 07013). No special status plants were found or are suspected to occur in the project area. Trailhead developments would be located on previously disturbed areas that have limited vegetative cover and/or are occupied with nonnative plants such as cheatgrass. Restriction of motorized access and reduction of user created trails would reduce potential for future loss of native vegetation. The removal of vegetation for 4.6 miles of 1.5 ft.-wide trail would be partially offset by the obliteration and rehabilitation of 1.2 miles of braided roads and 0.7 miles of trails with native grasses. There would be a short term net loss of vegetative cover until obliterated roads and trails reestablish vegetative cover.

## **Wildlife**

The elimination of nonadministrative motorized access beyond the trailheads would reduce impacts to wildlife. Public access to sensitive wildlife areas would be reduced through seasonal trail closures and eliminating OHV activity. Recreational shooting would be discouraged through informational signage. These control measures would provide protection to known nest sites and postpone or reduce the likelihood of territory abandonment. These actions would offset adverse impacts to suitable nesting habitat in upland areas resulting from the Otter Bench trail. Development of additional user created trails that could result in disturbance to raptor nesting activities would be unlikely with the improved, designated trail system.

Based on the biological evaluation for the proposed action there would be no effect on threatened, endangered, proposed and candidate species. With the noted exceptions, there would be no impact or a beneficial impact on sensitive and strategic species. For the sensitive avian

species bald eagle, there was a “No Appreciable Impact” and for the American peregrine falcon a “Not Likely Impact.” For list of species and detailed effects to wildlife see Appendix E.

## **Watershed**

The proposed obliteration and rehabilitation of roads would reduce localized erosion on the plateau areas. Rehabilitation of multiple trails and stabilization of designated trails within the canyons would reduce erosion and sloughing on steep slopes and subsequent development of gullies which could transport sediment to the river. There would be a short term increased potential of erosion until obliterated roads and trails establish vegetative cover. The designation and maintenance of Class 2 level trails should inhibit the development of additional user created trails with the associated potential for erosion.

## **Cultural**

No archaeological sites would be directly impacted by the proposed trail development. The trailhead development at the Otter Bench trail has been moved to avoid direct or indirect impacts to the one archaeological site located in the vicinity. Direct impacts to the one rockshelter along the Scout Camp trail will be eliminated by not constructing a trail in front of it which leaves the existing trail function as is. Closure of motorized access to the public beyond the trailheads would reduce potential for impacts to any unknown sites existing outside the inventory areas, though the area is considered low potential for significant sites. Development of designated and improved trail networks would limit additional user created trails in the vicinity of the project area and thus reduce the disturbance of any undocumented sites.

### **4.3 Cumulative Effects**

Project scoping did not reveal a need to exhaustively list individual past actions or analyze, compare, or describe the environmental effects of these actions. There are no known current or predicted future actions within or surrounding the project area that, when coupled with the actions described in this EA, would lead to effects beyond those already described.

Current conditions on lands potentially affected by the Proposed Action and its alternative resulted from a multitude of natural and human events that have taken place over many decades. A complete, detailed description and analysis of all events and their effects is not possible to compile, would be unduly costly to explore in detail, and would not provide any clearer picture of the existing environment.

Key past events believed to have shaped current environmental conditions in the project area include weather cycles; increased human settlement; livestock grazing practices of early through mid 1900's; general exclusion of unplanned fire from the project area; and, starting in 1970s conversion of the area from livestock grazing to planned residential development.

When coupled with past actions, implementation of the Proposed Action would help ameliorate outcomes of past practices of unplanned public access and road/trail development on state and Federal lands.

The Proposed Action could cause variability in recreational use of the project area and affect levels of solitude experienced within the canyons. Generally, areas where vehicular use is restricted may experience improved solitude while areas with new trails may have reduced solitude. Any increased uses associated with project developments are not anticipated to change the overall trend of increased use related to build out of the Crooked River Ranch.

The above information on individual past actions and events is anecdotal only, and is not a scientifically acceptable methodology for quantifying, illuminating or predicting all the cumulative effects of the Proposed Action and its alternatives.

#### **4.4 Monitoring**

Monitoring would be done in accordance with the Middle Deschutes/Lower Crooked Rivers Management Plan as described in part IV, section C of the plan.

Monitoring trail conditions and providing periodic maintenance of trails could be accomplished by volunteers from the Crooked River Ranch Trails group. Special attention would be given to maintaining rehabilitated areas and prevention of user created trails by maintaining signage and native material barriers as needed. Major trail maintenance due to damage from storms or landslides could be accomplished through Youth Conservation Corp or county correctional work crews under agency supervision.

Trail use levels would be monitored for vehicular traffic using traffic counters at each trailhead. Increases in use of 10% or more per year would indicate needs for increased monitoring of trails.

Sensitive and strategic bird species nesting activity would be monitored seasonally to determine effectiveness of closure and potential adjustments to the area boundary and closure period.

## **5.0 CONSULTATION AND COORDINATION**

### **Agencies and Organizations Consulted**

#### Elected Officials

Frank Wood, Crooked River Ranch Board President

#### Agencies/Organizations/Businesses/Other

Oregon Department of Fish and Wildlife:  
Terry Shrader, acting fisheries biologist  
Karen Tofte, Realty Specialist

Crooked River Ranch:

Aaron Palmquist, Ranch Manager

Crooked River Ranch Road Department:  
George Gregory, Roads Manager

USFS, Crooked River National Grasslands:  
Barb Smith, Recreation

USFS, Deschutes National Forest:  
John Schubert, Trails Specialist  
Kelsey De Jean, Road Maintenance Supervisor

Crooked River Ranch Riders Club:  
Mona Steinberg

Crooked River Ranch Trails Committee:  
Steve Horne

Ranch Residents:  
Craig Soules, CRR Resident  
Marty Wilson, CRR Resident

## **6.0 LIST OF PREPARERS AND REVIEWERS**

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Paul Cuddy, Forest Service Environmental Coordinator



Difficulty Level

- a. Easiest: A trail requiring limited skill with little challenge to travel
- b. More Difficult: A trail requiring some skill and challenge to travel
- c. Most Difficult: A trail requiring high degree of skill and challenge to travel

2.31a - Exhibit 01

Hiker Trail Guide

Difficult 1/	Easiest	More Difficult	Most
Grade			
Max. Pitch			
Grade	20%	30%	+30%
Length	100'	300'	500'
Clearing 2/			
Width	48"	36" to 48"	36"
Height	8'	8'	8'
Tread 3/			
Width	18" to 24" Obstacle-free.	12" to 18" If needed, depending on volume and drainage.	12"
Surface tread side 50% or damage is a	Spot gravel surfacing.	Not surfaced-- leave roots, imbedded rocks, and some logs.	No graded except on slopes over where safety resource problem.

1/ Upper limit of grade and pitch length for most difficult trails depends on soil type, amount of rock, vegetation type, and other conditions affecting stability of the trail surface.

2/ Curve alignment to avoid cutting large trees.

3/ Increase tread width 6 inches on switchbacks or where side slopes exceed 60 percent.

## 2.31b - Exhibit 01

## Pack and Saddle Trail Guide

Difficult 1/	Easiest	More Difficult	Most
Grade			
Max. Pitch			
Grade	15%	25%	+30%
Length	200'	300'	500'
Clearing 2/ Width wide	8'; 6' between large trees. Pack clearance must be 3' from a point 30" above grade of tread.	6' Pack clearance must be 3' from a point 30" above a grade of tread.	3' to 4'
Height 8'	10'	8'	Maximum
Tread 3/ Width	24"	24"	18"
Surface except slopes 30%.	Surfacing as needed for stability.  Reinforce cross drains with logs or rocks on steep gradients (greater than 10%). Special emphasis on puncheon or turnpikes in bog holes. Construct extra trailbed width in steep terrain.	Leave roots and imbedded rocks.  Cross drains permanent with natural roots, rocks, or imbedded logs.	Not graded on side greater than

## 2.31b - Exhibit 01--Continued

1/ Assume pack animals normally are not accommodated on most difficult trails, so less clearing width is needed. Same holds true for day-use horse trails. The upper limit for most difficult saddle animal trails depends on the soil type, amount of rock, vegetation types, and other conditions affecting stability of the trail surface. The skill of the rider and the condition of the animal also are important

considerations.

- 2/ Along a precipice or hazardous area, the trail clearing width should be at least 48 inches to provide safety to the riders and their animals.
- 3/ Increase tread width 12 inches on switchbacks. Tread width on special sections, such as fords or turnpikes, should be at least 36 inches.

2.31c - Exhibit 01

Mountain Bike Trail Guide

	Easiest	More Difficult	Most Difficult <sup>1/</sup>
Grade			
Max. Pitch	10%	30%	+30%
Max. Sustained Pitch	5%	10%	15%
Length	100'	300'	500'
Turning Radius	6'	3'	2'
Length of Trip			
Day	10-20 mi	20-40 mi	40-50 mi
One-half Day	5-10 mi	15-20 mi	20-25 mi
Clearing <sup>2/</sup>			
Width	48"+	36"-48"	36"
Height	8'	8'	Max. 8'
Tread <sup>3/</sup>			
Width	24"+	12"-24"	12"
Surface	Relatively Smooth	Sections of Relatively Rough Surface	Varied--Some Portage Required

1/ Upper limit of grade and pitch length depends on soil type, amount of rock, vegetation type, and other conditions affecting stability of the trail surface.

2/ Curve alignment to avoid cutting large trees.

3/ Increase tread width 6 inches on switchbacks or where side slopes exceed 60 percent.

Trail Class Descriptions

a. Class 2, Simple/Minor Development

Typically managed to accommodate: low to moderate use levels; mid to highly skilled users, capable of traveling over awkward conditions/obstacles; users with moderate orienteering skills; trail suitable for many user types but challenging and involves advanced skills. Maintenance is done for resource protection and safety commensurate with targeted recreational experience, typically at three to five year interval. Tread is constructed with native materials and is discernable and continuous but narrow (1 -1.5 foot width) and rough with few or no allowances for passing. Obstacles are occasionally present, but cleared to define route and protect resource; vegetation may encroach into trailway. Constructed features include structures of limited size and number with functional drainage. Signage is the minimum required for basic direction which is generally limited to regulation and resource protection with very few or no destination signs present.

b. Class 3, Developed/Improved

Typically managed to accommodate: moderate to heavy use; users with intermediate skills level and experience; users with minimal orienteering skills; moderate easy travel by managed user types. Maintenance is done for resource protection, user convenience and safety commensurate with targeted recreational experience, typically at 1-3 year interval. Tread is typically constructed with native materials and is obvious and continuous allowing unhindered one lane travel (1.5 – 2.0 foot width). Obstacles are infrequent with vegetation cleared outside of trailway. Constructed features include structures which may be common and substantial (generally native materials in wilderness). Signage is present for regulation, resource protection and user assurance with directional signage at junctions including destination signs.

## Appendix B. VRM Classification Objectives

### Visual Resource Objective

Change Allowed  
(Relative Level)

Relationship to the  
Casual Observer

#### Class I

Preserve the existing character of the landscape. Manage for natural ecological changes.

Very Low

Activities should not be visible and must not attract attention.

#### Class II

Retain the existing character of the landscape.

Low

Activities may be visible, but should not attract attention.

#### Class III

Partially retain the existing character of the landscape.

Moderate

Activities may attract attention but should not dominate the view.

#### Class IV

Provide for management activities which require major modification of the existing character of the landscape.

High

Activities may attract attention, may dominate the view, but are still mitigated.

# Appendix C. Trail Head Diagrams

Diagram 1. Otter Bench Trailhead

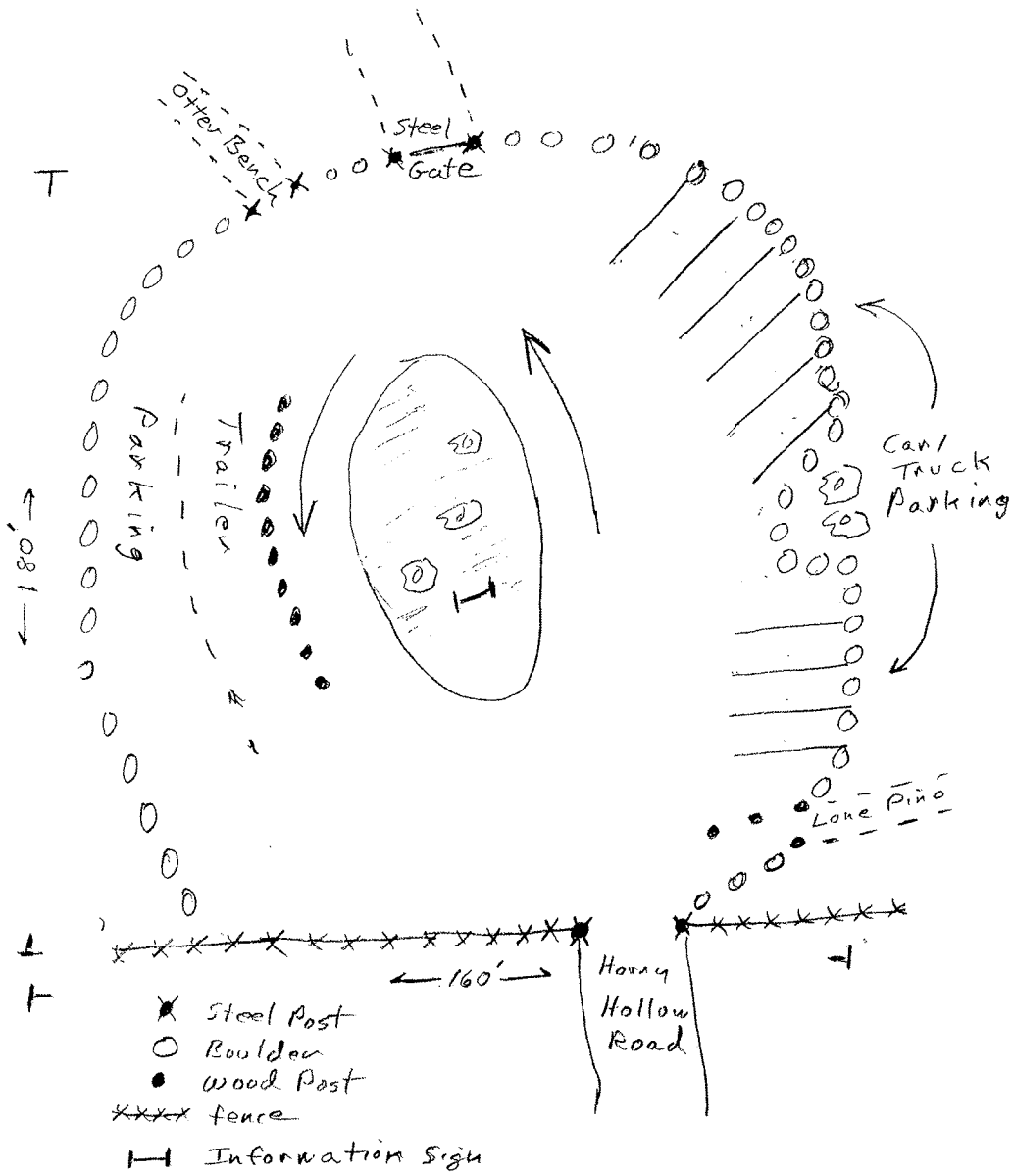
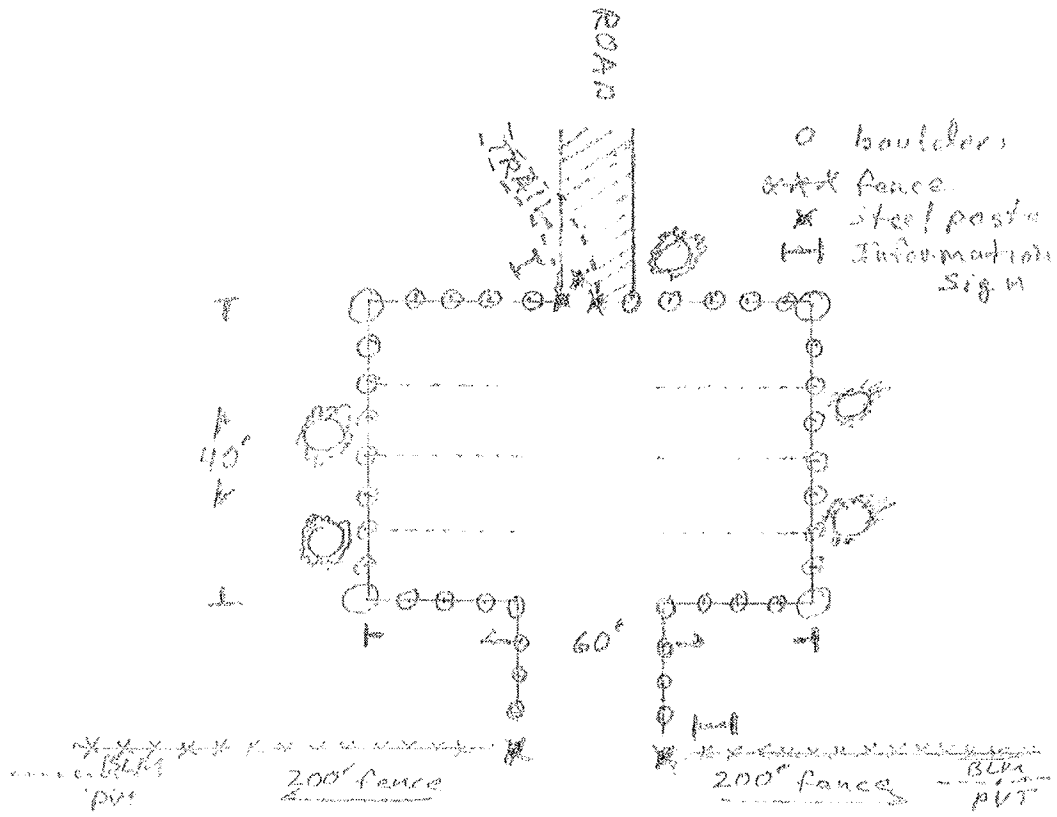




Diagram 2. Scout Camp Trailhead



## Appendix D. Cultural Field Observations

The pedestrian inventory of the Otter Bench trail/parking area was conducted between 8/21/07 and 8/23/07 and resulted in the location and recording of one prehistoric lithic scatter on ODFW land and one prehistoric isolate on BLM land. The lithic scatter consists of a defuse scatter of small obsidian and CCS flakes that has been impacted by previous road construction (flat blading) in two different directions. This area was originally proposed for the parking area but was moved after the discovery of the site. The isolate was located very near the edge of the rim rock overlooking the river canyon. In addition, a former employee with the Crooked River ranch was interviewed to gain insights into the activities associated with ranch operations that are visible within, but not affected by the proposed project.

The pedestrian inventory of the Scout Camp trail/parking area was conducted on 9/7/07 and resulted in the location and recording of two small prehistoric rockshelters. The first rock shelter is located high on the rimrock of the canyon, above the proposed trail route, but is very visible and accessible from where the trailhead would drop into the canyon. The shelter has been badly damaged from unauthorized excavation sometime in the past. The interior of the shelter has a shallow soil deposit (<50cm) that has been completely destroyed through excavation. A small sifted spoils pile is apparent in the front of the shelter where minor amounts of freshwater shell and small obsidian and CCS flakes were noted. A second small rock shelter was located and recorded just above the Deschutes River upstream from the confluence with Wychus Creek. This shelter appears to be susceptible to inundations from the Deschutes River during high flows since it sets approximately 9 feet above the river. The shelter has been scoured by these high flows as evidenced by a shallow (<20cm) floor composed of coarse sand. Some fresh water shell and one CCS flake was noted in the shelter indicating limited prehistoric use. The shelter exhibits current use from canyon visitors. A fire ring, bottle glass and pull tabs were noted in the sandy floor. No excavation has occurred in the shelter. The current user-created trail and the proposed trail will pass in front of this shelter due to the geology at this location.

Appendix E. Effects to Wildlife

SPECIAL STATUS SPECIES	NO ACTION	PROPOSED ACTION
<b>A. Threatened or Endangered Species</b>	No Effect	No Effect
<b>B. Sensitive Species</b>		
Townsend's big-eared bat, spotted bat and fringed myotis	Adverse impacts to potentially suitable foraging habitat would likely increase in coming years from continued unauthorized user created ATV trails, camp sites and nighttime disturbance in the project area.	Existing impacts from unauthorized user created trails, camp sites and nighttime disturbance would be reduced or eliminated. Increasing impacts in the coming years from uncontrolled/undirect public use of the area would be slowed or eliminated.
<b>C. Strategic species</b>	No Impact	No Impact
<b>D. Birds of Conservation Concern</b>		
Prairie falcon	Adverse impacts to cliff nesting habitat would likely increase in the coming years from uncontrolled/undirected public use of the Crooked River Canyon in the project area.	Adverse impacts to cliff nesting habitat could be reduced via controlled and directed public use of the project area.
Loggerhead shrike, gray vireo, Virginia's warbler and Brewer's sparrow	Adverse impacts to suitable upland nesting habitat for these species would likely increase in the coming years from uncontrolled/undirected public use of the sagebrush/bitterbrush/juniper woodland habitat in the project area.	The proposed project would cause direct adverse impacts to suitable nesting habitat by building trails through upland sagebrush/bitterbrush/juniper woodland habitat. The project would reduce adverse impacts to suitable nesting habitat by closing and rehabilitating unauthorized user created trails in suitable habitat. In addition, the proposed project would reduce future impacts to suitable habitat by preventing unauthorized motorized vehicle use of the project area.
<b>E. Species of Local Interest</b>		
Golden Eagle	Increasing uncontrolled/undirected public access along the Crooked Rim in the project area would lead to increasing disturbance to known golden eagle nest sites in the project area, which would likely eventually cause to abandonment of the known territories.	Controlled/directed public access away from known nest sites, and seasonal trail closures would provide protection to known nest sites and postpone or reduce the likelihood of territory abandonment.

<p>Mule deer and Rocky Mountain Elk</p>	<p>Adverse impacts from motorized vehicle use in the area would likely increase in the coming years. Adverse impacts from fire arm use in the area would continue and potentially increase in coming years.</p>	<p>Adverse impacts from motorized vehicle use in the project area would be reduced by closing the area to motorized public access. Adverse impacts from fire arm use in the project area would likely be reduced by restricting the area to non-motorized public access.</p>
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