



Fremont-Winema National Forest

## Related Links

[Fremont Roads Analysis Report Index](#)

# Roads Analysis: Fremont Issue 4

**Fremont-Winema National Forests  
Roads Analysis Report**

**Fremont Portion of the Fremont-Winema National Forests  
December 2006**

## Issue 4: Fish Passage and Road Crossings

It is a National and Regional requirement to evaluate fish passage at road crossings on all fish bearing streams. Evaluation of Fish Passage at Road Crossings is an interdisciplinary effort initiated by Engineering, Hydrology, and Fisheries to identify high priority fish passage sites and determine the total need for funding to improve fish passage throughout the Region. To accomplish this, the Forest completed a culvert inventory analysis. Culvert data was collected using an established procedure; data was reviewed and input into a Regional database. The final report included total number of sites; percent of culverts that do not meet fish passage criteria; total miles of habitat blocked, summarized by species; and top Forest priorities for fish passage restoration.

Key elements of this analysis are to:

1. Identify culverts that are barriers or partial barriers to fish movement.
2. Determine the adequacy of existing culverts and make recommendations for future upgrades or modifications to provide for fish passage.
3. Meet National and Regional direction to identify and resolve fish passage problems.

**Background:**

There are thousands of road crossings (the intersection of a road and a stream) on public and private land. The obligation to provide for fish passage at road crossings leads one to question which road crossings currently provide for fish passage and which crossings may not provide passage.

The Fremont National Forest was charged with the task of inventorying the status of the road crossings on fish bearing streams. The inventory began with an exercise that determined how many road crossings--bridges, culverts, or low water fords--there are on National Forestland. The number of road crossings was determined through GIS (Geographical Information Systems) by taking the intersection between the roads layer and the stream layer. This method generated several points that were not actually crossing and the method was modified. Road crossings were determined through manually determining road crossing locations on district maps.

As part of the pilot program, the field of inventories began in 2000 with 182 road crossings inventoried. In 2001, 157 crossings were inventoried. The final year of inventories was 2002 when 60 culvert crossings were inventoried.

The culverts were inventoried following Region 6 instructions provided in **Appendix A**, "Fish Passage Through Road Crossings Assessment Form". A matrix (**Appendix B**) was used in the field to rate whether or not the culvert met the criteria to allow fish passage. The matrix color-coded the passage criteria:

GREEN culverts are assumed to be adequate for fish passage.

RED culverts do **not** meet the criteria to allow fish passage.

GREY culverts require additional analysis to determine fish passage.

#### **Results:**

The prioritization of the inventoried culverts was based on a point system. Points were assigned to culvert locations based on **species present or expected, stream length upstream, key watersheds, stream type, passage status, and ownership**. The number of points reflects the importance placed on a particular characteristic. Therefore, the more points a culvert received, the higher the culvert was placed on the priority list.

The Fish Passage at Road Crossings Assessment Project on the Fremont National Forest evaluated 399 culvert locations. Of the 399 individual culverts, 357 do not meet the criteria to allow fish passage (RED). There are 32 culverts that rated GREY, and 10 culverts that rated as GREEN. The following tables describe how the culverts inventoried on the Fremont National Forest rated, based on type of culvert.

**Table A**  
**Culvert Type By Fish Passage Criteria**

<b>Culvert Type</b>	<b>GREEN</b>	<b>GREY</b>	<b>RED</b>	<b>Total</b>
<b>Circular</b>				
< 48" diameter	~	5	217	<b>222</b>
> 48" diameter	1	3	34	<b>38</b>
<b>Box</b>	~	~	1	<b>1</b>
<b>Open Bottom Arch</b>	6	7	3	<b>16</b>
<b>Pipe Arch (squashed)</b>				
< 58" span	1	1	44	<b>46</b>
> 58" span	2	16	58	<b>76</b>
<b>Total</b>	<b>10</b>	<b>32</b>	<b>357</b>	<b>399</b>

Based on the inventory of culverts, the estimated number of miles of upstream length that may be blocked by culverts is shown in the following Table by specific species. There was limited information available regarding habitat quality. Species presence was physical presence or expected presence at any particular road crossing. At some road crossings it is not clear what fish, if any, reside in them.

**Table B. Miles of stream length blocks by species**

<b>Species</b>	<b>Miles of Stream Length Blocked</b>
Bull Trout	46
Redband Trout	1,503

**Prioritized List:**

Culverts were prioritized based on the species present, stream length upstream, key water shed, stream type, passage status, ownership, leap distance, and the channel width to bankfull width ratio. The top ten culverts are in the following table. The detailed ranking and prioritization list is included with the appendix for the 399 culverts. The priorities are recommendations only. Implementation of the priority list will depend on NEPA analysis, funding available, and final priority decisions.

[Return to Table of Contents](#)

[Return to top](#)



### **Fremont-Winema National Forest Headquarters**

1301 South G Street  
Lakeview, OR 97630  
(541) 947-2151

### **Bly Ranger District**

61100 Highway 140 E  
Bly, OR 97622  
(541) 353-2427

### **Chemult Ranger District**

110500 Highway 97 N  
Chemult, OR 97731  
(541) 365-7001

### **Chiloquin Ranger District**

38500 Highway 97 N  
Chiloquin, OR 97624  
(541) 783-4001

### **Klamath Ranger District**

2819 Dahlia Street  
Suite A  
Klamath Falls, OR 97601  
(541) 883-6714

### **Lakeview Ranger District**

18049 Highway 395  
Lakeview, OR 97630  
(541) 947-3334

### **Paisley Ranger District**

303 Highway 31

Paisley, OR 97636

(541) 943-3114

### **Silver Lake Ranger District**

65600 Highway 31

Silver Lake, OR 97638

(541) 576-2107

### **Employment**

#### **Contact Us**

[Recreation.gov](#)

[askUSDA](#)

[Report Fraud on USDA Contracts](#)

[Accessibility Statement](#)

[WhiteHouse.gov](#)

[Policies and Links](#)

[Visit OIG](#)

[Privacy Policy](#)

[eGov](#)

[Our Performance](#)

[Plain Writing](#)

[Non-Discrimination Statement](#)

[Anti-Harassment Policy](#)

[No FEAR Act Data](#)

[Open Government](#)

[Careers](#)

[FOIA](#)

[Information Quality](#)

[USA.gov](#)



**Forest Service**

U.S. Department of Agriculture

