

## **Appendix F Fisheries**

The dominant water body in the proposed project area is Lost Creek Reservoir. This reservoir is created by the William L. Jess Dam which was built by the Army Corps of Engineers to provide for flood control and other social benefits in the Rogue River basin. Lost Creek reservoir has a total storage capacity of 465,000 acre-feet, is 10 miles long and covers 3,426 acres at full pool (ODFW 1994). Major streams within the proposed project area include the Middle Fork of the Rogue River, Rogue River immediately below the dam, and the first mile of Big Butte Creek. Other notable streams are Lost Creek (north), Blue Gulch, Knighten Creek, Hole In the Ground Creek, and Skookum Creek.

### **Fish Species and Distribution**

A variety of resident and anadromous fish species occupy the proposed project area. Native fish species that utilize the Lost Creek Reservoir, the Middle Fork of the Rogue River, and tributary creeks to the reservoir include resident rainbow trout (*Oncorhynchus mykiss*), resident cutthroat trout (*O. clarki*), Klamath smallscale sucker (*Catostomus rimiculus*), and sculpin (*Cottus* spp.). Introduced species in the reservoir include brook trout (*Salvelinus fontinalis*), brown trout (*Salvelinus trutta*), smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*), brown bullhead (*Ictalurus nebulosus*), bluegill (*Lepomis macrochirus*), and black crappie (*Pomoxis nigromaculatus*). Native fish species that utilize the upper Rogue River and lower Big Butte Creek include coho salmon (*O. kisutch*), chinook salmon (*O. tshawytscha*), summer and winter steelhead trout (*O. mykiss*), resident rainbow trout (*O. mykiss*), coastal cutthroat trout (*O. clarki*), Pacific lamprey (*Lampetra tridentata*), brook lamprey (*L. richardsoni*), speckled dace (*Rhinichthys osculus*), white sturgeon (*Acipenser transmontanus*), Klamath smallscale sucker (*Catostomus rimiculus*), and sculpin (*Cottus* spp.). Coho salmon are listed as a threatened species under the Endangered Species Act (ESA) of 1973. Pacific lamprey is a State of Oregon designated sensitive species because there is evidence of their populations declining throughout the Pacific Northwest, however there is little known information related to lamprey populations in the Rogue River.

Historically, anadromous fish utilized the Rogue River and its tributaries several miles above the William L. Jess Dam. When the dam was constructed in 1972, this historic range was eliminated. Native fish species such as cutthroat trout, rainbow trout, sculpins and Klamath smallscale suckers still remain within the proposed project area above the dam. Cutthroat trout have been observed in 3 streams that flow into Lost Creek Reservoir: Lost Creek North, a small un-named tributary, and in Skookum Creek in sections 33S - 1E - 1, 11, and 12 and in sections 33S -2E - 3 & 10 (see map). This represents approximately 3.5 miles of resident trout habitat in the proposed project area and approximately 1.5 miles is located on BLM administered lands, excluding the reservoir. Sculpin distribution is currently unknown. Klamath smallscale suckers have been documented only in Lost Creek Reservoir. All the above species utilize the Rogue River and the lower section of Big Butte Creek within the project area.

### **Aquatic Habitat Status**

Aquatic habitat surveys were completed on Lost Creek and Skookum Creek on BLM administered lands in 1997. The sections on private lands were not surveyed. Surveys indicated that overall the aquatic habitat is in fair condition in these sections based on quantities of gravel and cobble substrate, pool habitat, and riparian condition. (Table 1). Some areas had high

levels of fines and had low quantities of large wood pieces. The increased fine sediment levels are likely from a combination of roads and natural erosion.

Table 1. Key Habitat Elements (Interpreted from 1997 Stream Surveys).

	<b>Pool Quality</b>	<b>% Gravel</b>	<b>Riparian Condition</b>	<b>Large Woody Material</b>	<b>Overall Condition</b>
Lost Cr. (north)	Fair	Good	Fair	Fair	Fair
Skookum Cr.	Fair	Good	Fair	Poor	Fair

Riparian surveys were completed in 1997 on both streams. Overall, Lost Creek North was classified as functioning at risk based on high sediment loads and active slumping. Skookum Creek was classified as functioning at risk based on lack of large wood on the upper portion and was properly functioning on the lower section. These surveys were completed on BLM administered lands only.

#### Aquatic Habitat Trend

No surveys have been completed since 1997 but habitat conditions are believed to maintain or improve on surveyed reaches over the past 6 years. A fire occurred in the upper watershed on the western side last year. The streams within the fire were first order streams and there is very little chance the fire will contribute sediment to fish bearing streams. No projects or activities have occurred in the watershed since 1997.

### Environmental Consequences

#### No Action Alternative, Alternative 1

##### a) Direct and Indirect Effects

The No Action alternative would have no direct effect on fish or fish habitat. With no on-the-ground actions, there would be no direct improvements or damage to fish and other members of the aquatic biotic community or to aquatic habitat.

Indirectly, the vegetation within the Riparian Reserve would continue to develop and provide the long-term (50-100+ years) necessary elements for healthy aquatic ecosystems such as instream large wood, shade, and bank stability. Vegetation in non-recovered openings within the transient snow zone (TSZ) would continue to develop. This would be expected to reduce the risk of increasing the magnitude and frequency of peak flow events.

Additionally, this alternative could indirectly contribute to stream sedimentation into streams like Lost Creek North and Skookum Creeks by delaying or foregoing road decommissioning, road

renovation and road maintenance. Road densities, which are fine sediment sources, would remain unacceptably high within the watershed. Problem culverts that contribute sediment into the stream system will continue be chronic source for fine sediment. The problems would be expected to have indirect, adverse effects for fisheries and aquatic resources through habitat degradation over the short and long-term (>5 years or until the road had fully stabilized).

There would be a higher threat of a severe intensity stand replacing fire from the continued fire exclusion and the lack of fuel reduction treatments in the project area. Such a fire could lead to levels of soil erosion and sedimentation even higher than those existing, further damaging fish habitat. It could also temporarily eliminate stream shade and large wood recruitment.

#### b) Short-term Uses vs. Long-term Productivity

Maintaining the current Riparian Reserve vegetation throughout the proposed project area would continue to provide the long-term necessary elements for healthy aquatic ecosystems. Maintaining the current vegetation within the transient snow zone (TSZ) throughout the proposed project area would continue to allow hydrologic recovery in these areas. This would be anticipated to help maintain or increase the current productivity of fisheries and aquatic resources over the long-term (50-100+ years).

By delaying or foregoing road decommissioning, road renovation and road maintenance in the short-term (1-5 years), a higher risk of stream sedimentation from roads is likely in the short-term. This would be anticipated to maintain or increase current levels of stream sedimentation. This would be expected to adversely effect aquatic habitat and potentially the productivity of fisheries and aquatic resources in the watershed over the long-term.

#### c) Irreversible or Irretrievable Commitments of Resources

None anticipated.

#### d) Cumulative Effects

A beneficial cumulative effect to fish and aquatic resources should result due to increased sizes and amounts of large wood contributed to the aquatic ecosystem as the Riparian Reserve vegetation develops and delivers material to the streams over the long-term. This alternative would also be expected to cumulatively reduce the amount of non-recovered openings within the TSZ. As a result, a cumulative reduction in altering the magnitude and frequency of peak flow events should occur.

Alternatively foregoing road decommissioning, road maintenance or renovation opportunities could lead to an increase in stream sedimentation levels from surface erosion or mass failure of cuts and fills. Foregoing these opportunities would be expected to have an adverse cumulative effect on fisheries and aquatic resources through potential cumulative increases in stream sediment levels. Some roads may stabilize over time as they revegetate. However, this may take many decades to achieve. This is also dependent upon private activities and their use and maintenance of the transportation system in the watershed.

- e) Determination of Effects on Northern California/ Southern Oregon Coho Salmon (SO/NC) Coho Salmon, SO/NC Coho Critical Habitat, and Essential Fish Habitat (EFH) from Implementation of Alternative 1.

#### No Effect

The “no action” alternative would have no positive or negative effect to SO/NC coho salmon, coho Critical Habitat or EFH. With no ground disturbing activity occurring, existing conditions would continue and there would be no physical changes that would negatively impact downstream conditions and coho habitat.

### **Effects of Implementing Alternative 2**

- a) Direct and Indirect Effects

No direct effects to fish and aquatic habitat are expected from the proposed timber harvest and fuel treatment activities. Indirect effects which may result from timber harvest could include increased runoff due to reduced canopy cover and soil compaction by heavy equipment operation. This could result in a change in the magnitude or timing of flows in adjacent streams. However, impacts to aquatic resources from the project are expected to be inconsequential and immeasurable because of the project design and small size of the proposed project. Most harvest units are designated for density management or select cut treatment, which would leave a residual canopy closure of 40-60%. This would be expected to maintain the current hydrologic functioning condition of the upland areas. The regeneration harvest would not be expected to measurably effect flows within the project area because of the small number of acres proposed for treatment. This proposed alternative would increase the amount of TSZ openings by 69 acres, which would have a negligible effect to peak flows.

All proposed fuels treatments in riparian zones will be completed by hand using handheld equipment so there would be no soil compaction. The riparian treatment consist of pile burning, which has a very low risk of contributing sediment to streams because the burned areas are small (4 foot diameter) and are surrounded by unburned areas that trap any sediment created. In addition, a 50 foot no-treatment buffer would be maintained on all streams above and below the dam to further reduce the chances of sediment reaching streams. In riparian areas below the dam that are inner gorged draws steeper than 35% slope, they will have full buffer widths maintained. The width of these buffers is based upon the steepness of the adjacent slopes and the presence of true riparian vegetation species. A combination of the light treatments in the riparian areas with 50 feet no treatment buffers will alleviate sediment delivery into adjacent streams. There would be no measurable reduction in shade on these streams resulting from the proposed fuels treatments by maintaining the 50 feet buffer. No heavy mechanical treatment will occur within Riparian Reserves and equipment will only be allowed to travel in these areas on those roads which are already in existence. No mechanical fuels treatments will occur anywhere below Lost Creek Dam that drain into the Rogue River or Big Butte Creek. Aquatic resources should benefit from over-stocked riparian areas being thinned out which will allow them to produce a future large wood supply quicker. Also, there will be a reduced risk of wildfire which can significantly increase sediment levels.

Indirectly, the vegetation within the Riparian Reserves would continue to develop and provide the long-term necessary elements for healthy aquatic ecosystems. In areas where the Riparian Reserve is currently in an early to mid-successional condition it would be expected that late-successional characteristics would develop at a naturally slow rate. This would be expected to increase the length of time before the beneficial effects of a late-successional forest condition in these areas would be expressed in fish-bearing stream reaches. The areas designated for riparian fuel treatments would be expected to achieve late-successional structural characteristics within a shorter time period by reducing the competition for light and nutrients within these stands. Thinning would also indirectly result in increased resistance to a stand-replacement fire.

The proposed road decommissioning would be expected to restore more natural hydrologic flow paths and reduce the risk of erosion and subsequent stream sedimentation from these roads. This would be expected to indirectly benefit fish within the watershed by reducing potential road generated fine sediment. Indirectly, fish and aquatic resources could be negatively effected from low level, localized increases to baseline stream turbidity and sediment levels in the short-term (<1 year). These increases would not be expected to persist beyond one year after completion of the proposed activities.

The proposed road maintenance, road renovation and operator spur construction would be expected to have indirect, negative effects to fish and aquatic habitat from localized increases to baseline stream turbidity and sediment levels in the short-term (<1 year). These increases would not be expected to persist beyond one year after completion of the proposed activities. Conversely, the proposed road maintenance and road renovation actions would be expected to indirectly benefit fish within the watershed by reducing the risk of sedimentation to streams from these roads in the short and long-term (>5 years).

Replacement and/or removal of culverts could directly impact the aquatic system by disturbing stream banks, vegetation, and substrate. Although these actions could result in short-term increases in turbidity and sedimentation, they would result in a direct beneficial effect on the aquatic system in the long term by restoring hydrologic connectivity and function. Replacement of undersized culverts would also indirectly benefit the aquatic system by reducing the risk of road failure during high flow events.

#### b) Short-term Uses vs. Long-term Productivity

No effect to the long-term productivity of fisheries and aquatic resources are anticipated from the proposed timber harvest, fuels treatments, road renovation, decommissioning, and culvert replacement. Maintaining the current Riparian Reserve design and allowing this vegetation to develop throughout the proposed project area would continue to provide the long-term necessary elements for healthy aquatic ecosystems. Maintaining 40-60% or greater canopy closure in proposed harvest units would be an insignificant increase of openings within the TSZ. The timber harvest area within the TSZ is very small throughout the proposed project area and would not effect the hydrologic regime of the area. This would be anticipated to maintain or increase current productivity of fisheries and aquatic resources over the long-term. Peak flows are expected to not change because of the small area being opened.

Short-term (1 -5 years) increases to baseline stream sediment levels are anticipated to occur from road maintenance, renovation, decommissioning, and replacement and/or removal of culverts under the proposed timber sale. However, it is anticipated that an overall reduction in the risk to increasing baseline stream sediment levels would occur due to maintenance, renovation, and decommissioning of the road system. Subsequently, it is anticipated the current productivity of fisheries and aquatic resources in the watershed would be maintained or increased over the long-term.

c) Irreversible or Irretrievable Commitments of Resources

None anticipated.

d) Cumulative Effects

Cumulative effects to the watershed from the proposed timber harvest and fuels treatments would include the reduction in vegetative cover and possible related short-term effects on flows. The recovery of vegetative cover within the grasslands and brush fields through the fuels treatments is expected to occur within a year or two at the most, with an overall benefit provided to the watershed by reducing risks of catastrophic fire. By reducing vegetative cover through these treatments it is expected to provide a long-term benefit to aquatic resources by reducing risks of sedimentation resulting from extreme fire behavior on the landscape.

No adverse cumulative effects to fish and aquatic resources are anticipated from the proposed timber harvest. Additionally, this alternative would allow the vegetation within the Riparian Reserve to continue to develop and contribute a long term supply of large wood to the aquatic ecosystem. This is anticipated to result in a beneficial cumulative effect to fish and aquatic resources due to increased habitat quality and quantity. This proposed alternative would only increase the amount of TSZ openings by 69 acres which would have an insignificant effect to peak flows for the project area.

The proposed project could have a negative effect on fisheries and aquatic resources in the short-term by adding to current levels of stream sediment from road maintenance, renovation, and decommissioning. Conversely, a long-term, beneficial, cumulative effect to fish and aquatic resources is anticipated from reducing potential road generated fine sediment by completing road maintenance, renovation, and decommissioning.

e) Determination of Effects on Southern Oregon/Northern California Coho Salmon, SO/NC Coho Salmon Critical Habitat, and EFH from Implementation of Alternative 2.

Timber Harvest

May Effect, Not Likely to Adversely Effect

It would be expected that some degradation of aquatic habitat may occur due to potential short-term sediment delivery to streams resulting from the planned timber harvest units occurring below Lost Creek Dam. However, by following the appropriate PDFs these effects will be minimized and are not expected to result in “take” of listed fish species. The units that occur above the dam are a “not effect” due to any sediment created being trapped by the reservoir. Alternative 2 is considered “not likely to adversely effect” SO/NC coho salmon (listed

“threatened”), SO/NC Critical Habitat, or EFH. Informal consultation with the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service was initiated in January 1998 for SO/NC coho salmon and SO/NC Critical Habitat. A Letter Of Concurrence was received from NOAA Fisheries Service in April 1998. Essential Fish Habitat consultation is not necessary because this project went through ESA consultation before it was a requirement and that the project was determined to “not likely to adversely effect” EFH.

### Fuels Treatments

#### No Effect

This project is determined to have “No Affect” on listed coho salmon, their Critical Habitat, or EFH. The project is “No Affect” because of the project design features, Riparian Reserve stipulations and there are no delivery mechanisms for sediment to reach coho habitat. These measures will ensure that no fine sediments, flow problems or other potentially harmful physical changes will negatively impact SO/NC coho salmon, Critical Habitat, or EFH.

### **Effects From Implementing Alternative 3**

#### a) Direct and Indirect Effects

No direct effects to fish and aquatic habitat are expected from the proposed timber harvest and fuels treatment activities. Indirect effects which may result from timber harvest could include increased runoff due to reduced canopy cover and soil compaction by heavy equipment operation.

This could result in a change in the magnitude or timing of flows in adjacent streams. However, impacts to peak flows are expected to be less than in Alternative 2 because there will be less regeneration harvest and more selective cut harvest. The few acres of regeneration harvest would not be expected to measurably affect flows within the project area because of the extremely small number of acres proposed for treatment. Most harvest units are designated for density management or select cut treatment which would leave a residual canopy closure of 40-60%. This would be expected to maintain the current hydrologic functioning condition of the upland areas. This proposed alternative would increase the amount of TSZ openings by 12 acres, which would have less than a negligible effect to peak flows.

Same effects from the proposed fuels treatments as Alternative 2.

Same effects on the vegetation within the Riparian Reserves as Alternative 2.

The proposed road decommissioning, road maintenance, road renovation, culvert replacement and/or removal, and operator spur construction would be the same as Alternative 2.

#### b) Short-term Uses vs. Long-term Productivity

Same effects as Alternative 2.

#### c) Irreversible or Irretrievable Commitments of Resources

None anticipated.

d) Cumulative Effects

Same effects as Alternative 2.

e) Determination of Effects on Southern Oregon/Northern California Coho Salmon, SO/NC Coho Salmon Critical Habitat, and EFH from Implementation of Alternative 3.

Timber Harvest

May Effect, Not Likely to Adversely Effect

The effects of this alternative would be identical to those already identified in Alternative 2 because the treatments occurring below the dam that may impact SO/NC coho are the same. Informal consultation with the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service was initiated in January 1998 for SO/NC coho salmon and SO/NC Critical Habitat. A Letter Of Concurrence was received from NOAA Fisheries Service in April 1998. Essential Fish Habitat was not part of consultation prior to September 27, 2001 which was when the timber sale portion was consulted on and so it is not included in this document.

Fuels Treatments

No Effect

The effects of this alternative would be identical to those already identified in Alternative 2 because the treatments occurring below the dam are the same.

**Effects From Implementing Alternative 4**

a) Direct and Indirect Effects

Same effects from timber harvest as Alternative 2.

There are no direct effects to fish or aquatic resources expected from the proposed fuels treatments in Alternative 4. The proposed fuels treatments in riparian zones are the same for all alternatives, so impacts will be the same. This alternative differs from Alternatives 2 & 3 by having no mechanical fuels treatments occurring in the uplands above the dam. With the buffers outlined in the PDFs, there would be no measurable reduction in shade on streams resulting from the proposed fuels treatments. Indirectly, fish and aquatic resources above the dam are expected to not be negatively effected from the fuels treatments because there will be no ground compaction and shade levels will stay the same. Conversely, aquatic resources should benefit from over stocked riparian areas being thinned out which will allow them to produce a future large wood supply quicker. Also, there will be a reduced risk of wildfire which can significantly increase sediment levels.

Same effects on vegetation in the Riparian Reserves as Alternative 2.

The proposed road decommissioning, road maintenance, road renovation, culvert replacement and/or removal, and operator spur construction would be the same as Alternative 2.

b) Short-term Uses vs. Long-term Productivity

Same effects as Alternative 2.

c) Irreversible or Irrecoverable Commitments of Resources

None anticipated.

d) Cumulative Effects

Same cumulative effects as Alternative 2.

e) Determination of Effects on Southern Oregon/Northern California Coho Salmon, SO/NC Coho Salmon Critical Habitat, and EFH from Implementation of Alternative 4.

Timber Harvest

May Effect, Not Likely to Adversely Effect

The effects of this alternative would be identical to those already identified in Alternative 2 because the treatments occurring below the dam that may impact SO/NC coho are the same. Informal consultation with the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service was initiated in January 1998 for SO/NC coho salmon and SO/NC Critical Habitat. A Letter Of Concurrence was received from NOAA Fisheries Service in April 1998.

Fuels Treatments

No Effect

The effects of this alternative would be identical to those already identified in Alternative 2 because the treatments occurring below the dam are the same.

**Effects of Implementing Action Alternative 5**

a) Direct and Indirect Effects

Same effects from timber harvest as Alternative 3.

Same effects from fuels treatments as Alternative 4.

Same effects on vegetation in the Riparian Reserves as Alternative 2.

The proposed road decommissioning, road maintenance, road renovation, culvert replacement and/or removal, and operator spur construction would be the same as Alternative 2.

b) Short-term Uses vs. Long-term Productivity

Same effects as Alternative 2.

c) Irreversible or Irretrievable Commitments of Resources

None anticipated.

d) Cumulative Effects

Same cumulative effects as Alternative 2.

e) Determination of Effects on Southern Oregon/Northern California Coho Salmon, SO/NC Coho Salmon Critical Habitat, and EFH from Implementation of Alternative 5.

Timber Harvest

May Effect, Not Likely to Adversely Effect

The effects of this alternative would be identical to those already identified in Alternative 2 because the treatments occurring below the dam that may impact SO/NC coho are the same. Informal consultation with the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service was initiated in January 1998 for SO/NC coho salmon and SO/NC Critical Habitat. A Letter Of Concurrence was received from NOAA Fisheries Service in April 1998.

Fuels Treatments

No Effect

The effects of this alternative would be identical to those already identified in Alternative 2 because the treatments occurring below the dam are the same.