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# Environmental Assessment

## DEER CREEK SMALL DAM REMOVAL PROJECT

Bend/Ft. Rock Ranger District, Deschutes National Forest  
Deschutes County, Oregon

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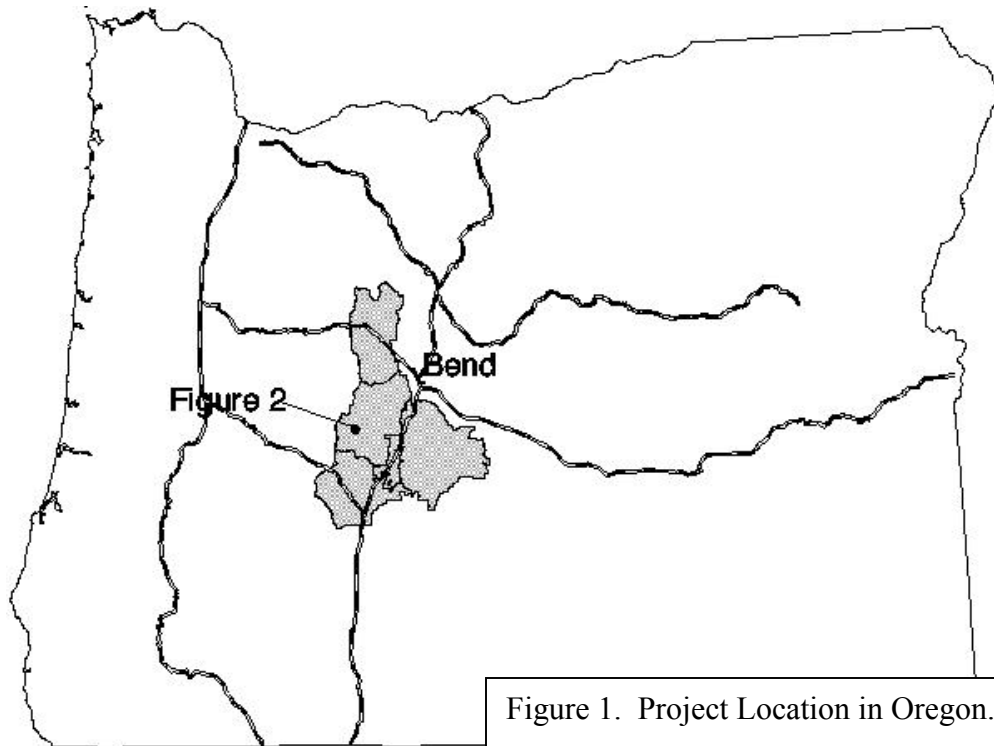


Figure 1. Project Location in Oregon.

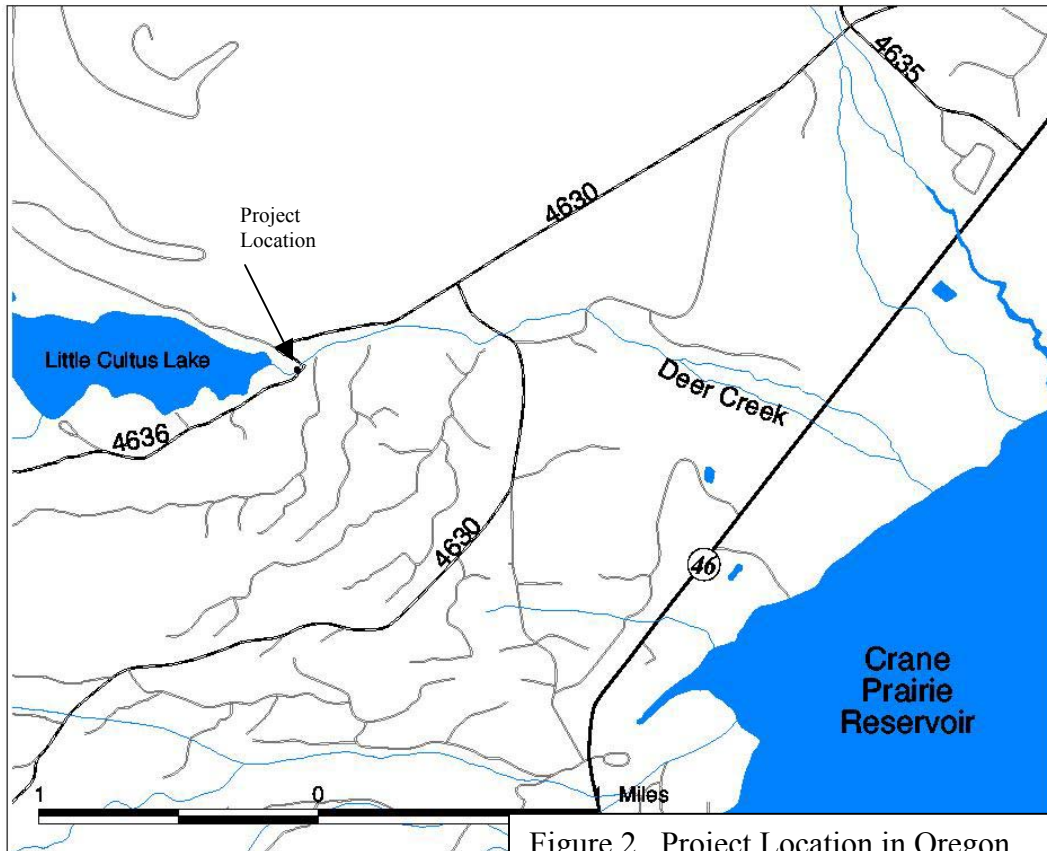


Figure 2. Project Location in Oregon.

# SECTION 1

## PURPOSE AND NEED

### Introduction

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Crescent Ranger District Office in Crescent, Oregon, or the Bend/Ft. Rock Ranger District in Bend, Oregon.

This environmental assessment (EA) evaluates the proposal by the US Forest Service, Bend/Ft Rock Ranger District to remove a small dam on Deer Creek, an intermittent channel between Crane Prairie Reservoir and Little Cultus Lake. The dam, located approximately ¼ mile downstream of the outlet of Little Cultus Lake, has been abandoned by previous owners and is located on National Forest System lands. It currently prevents upstream migration to local fish populations and is no longer needed for management of National Forest System lands. The original proposal, as described during scoping, also included removal of a small dam on an intermittent channel between Lava and Little Lava Lakes and on Crystal Creek. The Crystal Creek project is being documented in a separate Environmental Assessment and the intermittent channel dam project has been discontinued..

**Legal:** T20S R7E, Section 35 NW 1/4; Deschutes County. The project location is approximately 0.25 miles downstream of the outlet of Little Cultus Lake, and about 30 miles southwest of Bend, Oregon.

### Purpose & Need for Action

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The purpose of the project is to improve access and habitat available to fish, and to restore the natural sediment regime to the stream segment. The project is needed because the dam poses a barrier to upstream movement of juvenile fish and because habitat has been altered where the dam is located.

Deer Creek Dam is a concrete weir constructed decades ago and used by the Oregon Game Commission to collect fish for hatchery stock. The collection of fish is no longer occurring, and the dam remains in an unmaintained state. Deer Creek is inhabited with redband trout, a Forest Service Region 6 Sensitive Species. Juvenile redband trout are not able to move past the dam and into Little Cultus Lake where they could disperse into new rearing habitat. The proposed action would remove this barrier.

### Forest Plan Direction

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The 1990 Deschutes National Forest Land and Resource Management Plan (Forest Plan) as amended guides all natural resource management activities and provides standards and guidelines for the Deschutes National Forest. The purpose of the Forest Plan is to provide for the use and protection of Forest resources, fulfill legislative requirements, and address local, regional, and national issues and concerns.

Deer Creek is located in an area designated by the Forest Plan as a Scenic Views Management Area. The goal of this management area is to provide Forest visitors with high quality scenery that represents the natural character of Central Oregon. Standards and guidelines are primarily oriented towards vegetation management (4-121).

The project is located within a Late Successional Reserve (LSR) as allocated by the Northwest Forest Plan. LSRs are to be managed to protect and enhance conditions of late-successional and old-growth forest ecosystems. Standards and Guidelines for Riparian Reserves also apply. Riparian Reserves are portions of watersheds where riparian-dependent resources receive primary emphasis.

## **Decisions to be Made**

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Given the purpose and need, the deciding official reviews the proposed action and the other alternatives in order to make the following decisions:

- Will the Deer Creek dam be removed?
- What conditions will apply during implementation of any action alternative?

The deciding official (Bend-Ft. Rock District Ranger), will consider the information contained in this EA, including the appendices, to make their decision.

## **Scoping Summary and Issues**

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Public involvement first began when the proposal was listed in the Spring 2002 issue of the *Schedule of Proposed Actions for Deschutes and Ochoco National Forests and the Prineville BLM*. The proposal was then provided to the public and other agencies by letter for comment during scoping March 6, 2002 to April 4, 2002. This information was also posted to the Deschutes National Forest's web site.

No key issues related to removal of the dam on Deer Creek were identified during the scoping process. The following environmental components will be included in the Environmental Consequences Section for showing a comparison of the alternatives: Water and Riparian Quality; Wildlife (PETS, MIS, and Survey and Manage Species); Plants (PETS and Survey and Manage Plant Species); Noxious Weeds; Cultural Resources.

## **SECTION 2 ALTERNATIVES**

This section provides a description of the proposed action. Scoping did not reveal any key issues. For that reason, no alternatives to the proposed action were developed. This discussion also includes mitigation measures and project design considerations that will be included in the proposed action.

### **Alternatives**

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#### ***Alternative 1 (No Action)***

As required by the National Environmental Policy Act, the No Action alternative forms a basis for describing and comparing the effects of the proposed action. In this case, no action means that the dam on Deer Creek would remain in place.

#### ***Alternative 2 (Proposed Action)***

The Bend/Ft Rock Ranger District proposes to:

- Remove the dam from Deer Creek.
  - The dam would be completely demolished and removed using a backhoe or excavator.
  - The waste material would be loaded into dump trucks and disposed of at a nearby Forest Service rock quarry.
- Improve the habitat where the dam existed.
  - Sand and silt that accumulated behind the dam (up to 10 cubic yards) would also be removed and disposed of in the same location as the concrete.
  - The stream bottom would be graded to the same slope upstream and downstream of the dam.
  - Up to 2 on-site downed trees would be relocated instream to provide hiding cover for fish.
  - Replant area with native vegetation where necessary.

Implementation would take place in the late summer of 2003.

## ***Mitigation Measures and Project Design Common to Proposed Action***

In response to public and internal comments on the proposal, mitigation measures were developed to reduce some of the potential impacts the various alternatives may cause. The mitigation measures may be applied to any of the action alternatives.

### *Water Quality & Fisheries:*

1. Guidelines of the Oregon Department of Fish and Wildlife limit instream work to the period between July 1<sup>st</sup> and August 31<sup>st</sup>.
2. Work in Deer Creek would be accomplished when the streambed is dry.

### *Noxious Weeds:*

3. Wash all equipment and vehicles before entering National Forest System lands. Remove mud, dirt, and plant parts from project equipment before moving it into project area.
4. Inspect the project area for noxious weeds annually for three (3) years after the project is completed. If noxious weeds are found in the project area after project completion, manually treat the weeds, bag and dispose of them appropriately. Continue inspections for at least 3 years after weeds are no longer observed.

### *Cultural Resources:*

5. A Cultural Resource Specialist will be on site during implementation for monitoring.



## **SECTION 3**

# **ENVIRONMENTAL CONSEQUENCES**

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives.

The sections on effects for wildlife and plants are summarized from the Biological Evaluations for threatened, endangered, and sensitive fish, wildlife, and plant species and the wildlife specialist's report. For more details, these documents appear in the Analysis File.

### ***Water and Riparian Quality***

The area the equipment would be working in occurs within riparian habitat. It is an opening that appears to have been impacted at some time in the past, most likely from dam construction and fish collection activities. The Aquatic Conservation Strategy (ACS) is a component of the Northwest Forest Plan aimed at restoring and maintaining the ecological health of watersheds and aquatic ecosystems. The following discussion is an evaluation of project consistency with the ACS Objectives of the Northwest Forest Plan:

ACS Objective 1: Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.

Neither alternative retards or prevent attainment of this objective. The small size of the project site and the associated effects are minimal on a watershed scale. The project site is less than 1/10 acre of the 10,721 acre Deer Creek 6<sup>th</sup> field sub-watershed. The dam is affecting juvenile fish movement on approximately 1 mile of Deer Creek. Landscape scale aquatic systems are maintained.

ACS Objective 2: Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include flood plains, wetlands, upsweep areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

The No Action alternative obstructs juvenile redband trout distribution within a portion of Deer Creek. However, adult redband trout can navigate the dam to reach the upper area of Deer Creek and Little Cultus Lake, therefore the route remains unobstructed for spawning in these areas. The proposed action would meet this objective by restoring an unobstructed route for all life stages for approximately 1 mile of Deer Creek. Connectivity between watersheds would not be affected under either alternative.

ACS Objective 3: Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

The No Action alternative neither retards nor prevents attainment of this objective. The small size of the dam has minor effects to the physical integrity of the streambanks, and represents a small area when put in context of the entire 2.7-mile stream. The proposed action would restore the streambank integrity at the project site by removal of the dam and rehabilitation of soils and vegetation by hand raking and scattering woody material across the impacted area.

ACS Objective 4: Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

Neither of the alternatives would retard or prevent attainment of this objective. Removal of the dam under the proposed action would be done when Deer Creek, an intermittent stream, is dry.

ACS Objective 5: Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

Neither alternative retards or prevents attainment of this objective. Removal of the dam would allow some sediments that have accumulated behind the dam to move downstream once streamflow returns to the channel.

ACS Objective 6: Maintain and restore in-stream flows sufficient to create and restore riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration and spatial distribution of peak, high, and low flows must be protected.

Neither of the alternatives retards or prevents attainment of this objective. In-stream flows are not affected by any of the alternatives.

ACS Objective 7: Maintain and restore timing, variability, and duration of flood plain inundation and water table elevation in meadows and wetlands.

Neither of the alternatives retards or prevents attainment of this objective. Under existing conditions, the water table is elevated upstream of the dam for approximately 40-50 feet, but no meadows or wetlands are affected. The proposed action would return the floodplain to its natural state at the project site.

ACS Objective 8: Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distribution of coarse woody debris sufficient to sustain physical complexity and stability.

Neither of the alternatives retards or prevents attainment of this objective. Neither of the alternatives has substantial effects to vegetation. The proposed action would result in some damage to streamside vegetation while the dam is removed. Replanting with native vegetation would rehabilitate the project area. The species composition and structural diversity is maintained when put in context of the entire stream.

ACS Objective 9: Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

Although rearing habitat for redband trout is affected by No Action, redband trout are still able to distribute throughout the Deer Creek drainage since adults can navigate the dam. Therefore, the No Action alternative does not retard or prevent attainment of this objective. Alternative 2 would take action to restore habitat for the native redband, and therefore also meets this objective. Alternative 2 would impact the riparian habitat, but the amount of area would be relatively small, and efforts to rehabilitate the site include hand raking and scattering woody material will be undertaken. Long-term impacts are not expected to occur to riparian habitat.

## **Wildlife**

### **Proposed, Threatened, Endangered, or Sensitive Species**

Biological Evaluations were completed for Sensitive, Threatened, and Endangered species of plants and animals for the project.

The project area was evaluated to determine which species might occur based on the presence of required habitats and known locations. A field review occurred at the project site by the District Wildlife Biologist.

Several places along Deer Creek provide suitable habitat for the Oregon spotted frog. There were no spotted frogs detected within the project area or similar habitat areas below the project site. The closest known population is near the inlet to Little Cultus Lake. The deep pool habitat below the dam would be lost, but the placement of instream wood in place of the dam may help to provide some pool habitat. Effects from silt created from the heavy equipment would be short-term. Activities associated with removal of the Deer Creek dam would have NO EFFECT to Oregon spotted frog individuals.

Table 1. Summary of Conclusion of Effects from Biological Evaluation for Deer Creek dam removal.

<b>Proposed (P), Threatened (T), Endangered (E) Species</b>		
Species	Alt. 1 No Action	Alt. 2 Proposed Action
Northern Bald Eagle (T)	NE	NE
Northern Spotted Owl (T)	NE	NE
Northern Spotted Owl Critical Habitat	NE	NE
Canada Lynx (T)	NE	NE
Oregon spotted frog	NE	NE
<b>Region 6 Sensitive Species</b>		

Horned grebe	NI	NI
Rednecked grebe	NI	NI
Bufflehead duck	NI	NI
Harlequin duck	NI	NI
American peregrine falcon	NI	NI
Western sage grouse	NI	NI
Yellow rail	NI	NI
Tricolor blackbird	NI	NI
California wolverine	NI	NI
Pacific fisher	NI	NI
Pygmy rabbit	NI	NI

NE = No Effect. NLAA = May Affect, Not Likely to adversely Effect (must also meet PDCs).

NLJ = Not Likely to Jeopardize (Proposed species only)

NI = No Impact. MIIH = May impact individuals or habitat, but will not likely contribute to a trend toward federal listing or loss of viability to the population or species. BI = Beneficial Impact

## Fisheries

Deer Creek is an intermittent channel that normally is dry by the end of July. The stream is approximately 25 feet wide and up to 2 –3 feet deep when running at bankfull stage. Redband trout utilize the stream on a seasonal basis. Redband trout may occur in the project area. Redbands from Crane Prairie Reservoir move into Little Cultus Lake when flows permit. No known Threatened, Endangered, Proposed, or Candidate fish species occur in the project area. The nearest population of bull trout, a threatened species, is over 80 miles downriver. The bull trout has not been documented in the Deschutes River upriver from Bend since 1954.

With Alternative 1, the dam would continue to be a barrier to movement of juvenile redband trout into habitats upstream of the dam, including the 175-acre Little Cultus Lake. Suitable rearing habitat would continue to be underutilized. A plunge pool that provides fish habitat at the base of the dam would remain. This alternative May Impact Individuals or Habitat of the redband trout, but would not contribute to a trend towards federal listing or loss of viability to the population or species.

With Alternative 2, dam removal would benefit redband trout by allowing dispersal of juvenile trout into new rearing habitat, including Little Cultus Lake. A plunge pool at the base of the dam would be eliminated, but addition of up to two instream trees would providing hiding cover and scour a small pool. Alternative 2 would have Beneficial Impacts to redband trout. Due to the distance to the nearest bull trout population and impoundments downstream, which prevent upstream fish passage, there will be NO EFFECT to bull trout.

## **Survey and Manage Animal Species**

Surveys were conducted where habitat was present for the mollusk species *Pristiloma arcticum crateris* (Crater Lake tightcoil). None were located during surveys. There would be no impact to survey and manage mollusk species at Deer Creek from Alternative 1 or Alternative 2. No other survey and manage species habitats are present at the site.

## **Management Indicator Species**

The Deschutes National Forest Land and Resource Management Plan identifies management indicator species (MIS) in the project area: deer, elk, raptors, woodpeckers, great blue heron, waterfowl, California wolverine, American marten, western big-eared bat. Habitat was reviewed to determine if the project would have any impacts to these Management Indicator Species. The evaluation determined that none of the habitats related to these MIS would be negatively impacted by the proposed action.

## ***Threatened and Endangered and Survey and Manage Plant Species***

A plant survey was conducted at the proposed project site. This survey revealed no Threatened, Endangered, or Sensitive Plant Species within the area of the dam removal. Additionally, no potential habitat for any Survey and Manage Plant species was found within the project area. Neither Alternative would have any impacts to TES or Survey and Manage Plant Species.

## ***Weeds***

A Noxious Weed Risk Assessment was completed for the project site. Implementation of the Alternative 2 at the Deer Creek site was determined to pose a moderate risk of noxious weed introduction and spread. Mitigation measures have been identified to reduce the risk of introducing or spreading noxious weeds. By cleaning equipment before it enters National Forest System Land, weeds should not be introduced to the area.

## ***Cultural Resources***

The project location has been previously surveyed for cultural resources. No prehistoric resources were located. An historic site is located in the project area. Alternative 2 requires an archaeologist to be on site to monitor implementation. This will ensure that no impact to the site occurs. Ground disturbance will be kept to a minimum because the equipment work will be primarily within the channel. By minimizing ground disturbance and monitoring implementation, no effect to cultural resources is expected to result from implementation of the project.

## ***Other Disclosures***

### **Wetlands and floodplains**

Executive Orders 11988 and 11990 direct Federal agencies to avoid, to the extent possible both short-term and long-term adverse impacts associated with the modifications of floodplains and wetlands. The discussion of Aquatic Conservation Strategy Objectives addresses floodplains and wetlands. There would be no long-term adverse impacts to floodplains or wetlands from either alternative.

### **Civil Rights and Environmental Justice**

Civil Rights legislation and Executive Order 12898 (Environmental Justice) direct an analysis of the proposed alternatives as they relate to specific subsets of the American population. The subsets of the general population include ethnic minorities, people with disabilities, and low-income groups. The project is not located in a minority community and would not affect residents of low or moderate income. Therefore the alternatives would not pose a disproportionately high or adverse effect to those populations.

In addition, the effects of this project on the social context of these protected groups are within those described in the Deschutes National Forest Plan. The benefits and risks associated with implementation of the proposed action would be provided to all members of the public. Therefore, the project would not pose disproportionately high or adverse effects to minority communities or to low income groups.

### **Consumers**

The action alternatives would not supply any tangible forest products to the public. There would be no impacts to consumers by either of the alternatives.

### **Prime Lands (Farm, Range, and Forest)**

There are no lands within the boundaries of the Deschutes National Forest that meet the definition of prime farmland, or are considered prime farmland as discussed in the Final Environmental Impact Statement, Deschutes National Forest Land and Resource Management Plan. National Forest Land is generally not considered "prime" forestland. This project, therefore, would not affect prime lands.

## **SECTION 4 CONSULTATION AND COORDINATION**

### **Initial Scoping**

Notification of the proposed project was sent to 241 individuals, groups, and agencies by letter during the scoping period in March 2002. The list of the names and addresses we contacted are available at the Crescent or Bend/Fort Rock Ranger District office. The proposal was also posted on the Deschutes National Forest's internet site.

During initial scoping, the following input was received:

- Friends of Living Oregon Waters (FLOW) offered support for the proposal.
- Beth Coahran, Cultural Resource Manager for the Burns Paiute Tribe requested to be kept informed of the project as it progresses and inquired about cultural surveys.
- Greg R. McClarren responded with a letter of support.

### **Interdisciplinary Team Members and Specialists Consulted:**

Thomas A. Walker, Fisheries Biologist

Patricia Joslin, Botanist

Donald C. Zettel, Archaeologist

Shelly Borchert, Wildlife Biologist

Beth Peer, Writer/Editor

### **References Cited**

USDA, USDI. 1994. Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl. USDA Forest Service and USDI Bureau of Land Management. Portland, Oregon.

(USFS) U.S. Forest Service. 1990. Deschutes National Forest Land and Resource Management Plan. Bend, Oregon.