

***Livestock Stream-Crossing  
Construction  
Environmental Assessment***

EA # OR-105-07-08

Roseburg District, Bureau of Land Management

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# TABLE OF CONTENTS

## CHAPTER ONE

### Purpose and Need for Action

I.	Background.....	1
II.	Purpose .....	1
III.	Need.....	2

## CHAPTER TWO

### Discussion of the Alternatives

I.	Alternative One – No Action.....	3
II.	Alternative Two – The Proposed Action.....	3

## CHAPTER THREE

### The Affected Environment

I.	Vegetation.....	4
II.	Fish and Aquatic Resources .....	5
III.	Water Resources .....	6
IV.	Wildlife.....	6
V.	Cultural/Historical Resources.....	7

## CHAPTER FOUR

### Environmental Consequences

I.	Vegetation.....	8
	A. Alternative One – No Action .....	8
	B. Alternative Two – The Proposed Action .....	8
II.	Fish and Aquatic Resources .....	8
	A. Alternative One – No Action .....	8
	B. Alternative Two – The Proposed Action .....	9
III.	Water Resources.....	9
	A. Alternative One – No Action .....	9
	B. Alternative Two – The Proposed Action .....	9
IV.	Monitoring.....	9

## CHAPTER FIVE

Preparers and Contributors .....	10
Organizations and Individuals to be provided the EA upon completion .....	10
Literature and References Cited.....	11

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## Chapter One

### PURPOSE AND NEED

This chapter provides a description of the purpose and need for the action being proposed and analyzed in this environmental assessment (EA).

#### I. Background

In October, 2000, the 106<sup>th</sup> Congress of the United States passed the “Secure Rural Schools and Community Self-Determination Act of 2000”. The primary purpose of the Act was to provide dependable and predictable funding to counties in the area of the Northwest Forest Plan, in lieu of payments which were historically based on a percentage of revenues generated by the sale of timber from the Federal lands.

Under Title II authority (**Special Projects on Federal Lands**) of the Act, “Funds reserved by an eligible county under paragraph (1)(B)(i) shall be deposited in a special account in the Treasury of the United States and shall be available for expenditure by the Secretary of the Interior . . .” The Secretary may approve the use these funds “. . . for the purpose of entering into and implementing cooperative agreements with willing Federal agencies, State and local governments, private and nonprofit entities, and landowners for protection, restoration and enhancement of fish and wildlife habitat, and other resource objectives consistent with the purposes of this title on Federal land and on non-Federal land where projects would benefit these resources on Federal land.” Resource Advisory Committees were formed to review proposals and make recommendations on adoption or rejection, to the Secretary, or an individual acting as the Secretary’s designated agent.

#### II. Purpose

In 2006, the Roseburg District Resource Advisory Committee recommended approval for partial funding of a proposal submitted by the Partnership for the Umpqua Rivers, for the construction of livestock crossings on three streams to replace low-water crossings and complement riparian fencing installed by the individual landowners for the purpose of excluding livestock from riparian zones.

The project sites are located entirely on private lands downstream of lands managed by the BLM. On two of these streams, Norton Creek and Fate Creek, numerous restoration actions have been implemented over the past ten years, directly by the BLM or in partnership with private individuals and state and local government agencies.

Because adoption of the Resource Advisory Committee recommendation constitutes approval of the Secretary of Interior and the allocation of Federal funds reserved under the Act, the project becomes a Federal action. The National Environmental Policy Act (NEPA) requires that the Bureau of Land Management (BLM) complete an environmental assessment of the project.

### **III. Need**

The objective of the proposed action is to provide a manner by which livestock, and periodically farm equipment, can cross the streams without breaking down stream banks and damaging riparian vegetation, allowing livestock paths and other barren riparian areas to revegetate so that erosion and sedimentation of the waterways is reduced.

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## **Chapter Two**

### **DISCUSSION OF THE ALTERNATIVES**

This chapter describes the basic features of the alternatives being analyzed in this environmental assessment.

#### **I. Alternative One – No Action**

Under this alternative, the BLM would deny the request for funding of this project. As funding has already been recommended and approved, it is not likely that it would be withdrawn unless this analysis determined that the project would put a protected resource at risk and no suitable mitigation or alternative to the proposed action existed. The alternative of “No Action” will be addressed in the discussion of the environmental consequences of the alternatives, however, as it provides a comparative basis for describing the effects of the proposed action.

#### **II. Alternative Two – The Proposed Action**

Under this alternative, construction of the three livestock crossings would be partially funded under Title II of the Secure Rural Schools and Community Self-Determination Act of 2000. The actions that would be implemented are as follows:

- On Fate Creek, in Section 6, T. 30 S., R. 3 W. a wood-decked railcar bridge would be installed at the site of the current low-water crossing, complementing 0.75 miles of riparian fencing already constructed.
- On Norton Creek, in Section 26, T. 24 S., R. 6 W. a wood-decked railcar bridge will be installed to keep livestock out of the creek and off of the stream banks. A mile of fencing will be tied to the bridge, and in conjunction with 1.5 miles of fencing on Williams Creek on the same property will exclude livestock from 2.5 miles of streams.
- On Olalla Creek, in Section 4, T. 29 S., R. 7 W. a wood-decked railcar bridge will be used to bridge the creek, replacing a low-water crossing that is only useable during very low winter flows and most summer flows. It will be tied to a half-mile of existing fence by the construction of an additional quarter-mile of riparian fencing.

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## Chapter Three

# THE AFFECTED ENVIRONMENT

This chapter summarizes the specific resources that are present or potentially present and could be affected by the proposed action.

The proposed action, if implemented, would be undertaken entirely on private lands. Management of these lands is not subject to the Standards and Guidelines of the Northwest Forest Plan or management direction from the Roseburg District *Record of Decision and Resource Management Plan*. Consequently, the analysis of resources and effects of the proposed action is appropriately limited to those for which the BLM has a legislative mandate and responsibility to consider. These are, specifically, the Endangered Species Act, Clean Water Act and Historic Preservation Act.

### I. Vegetation

As illustrated by the photographs below, stream side vegetation has been severely beaten down by livestock crossing the streams, or bedding down beneath the few trees that provide shade from summer heat. In the case of Norton Creek, the larger streamside trees such as alder, Oregon ash and willow are dying out and few younger saplings exist to replace them. The same conditions are evident along Olalla Creek and Fate Creek.

As the native vegetation has been grazed and trampled, favorable conditions have been created for the establishment of non-native and invasive species. Among the species commonly occurring are Himalayan blackberry (*Rubus discolor*), English hawthorne (*Craetegus monogyna*), St. John's wort (*Hypericum perforatum*), meadow knapweed (*Centaurea pratensis*), and bull thistle (*Cirsium vulgare*).

Figure 1



Figure 2



Norton Creek at high (Figure 1) and low (Figure 3) flows

**Figure 3**



**Figure 4**



Olalla Creek livestock crossing site (Figure 3) and cattle path along creek (Figure 4).

**Figure 5**



Fate Creek livestock crossing site (Figure 5).

All three of the project sites were surveyed for Kincaid's lupine (*Lupinus sulphureus* ssp. *kincaidii*), a Federally-threatened species native to the prairies of the Willamette Valley and southwestern Washington, and found in forest openings and meadow gaps in Douglas County, Oregon (Menke and Kaye 2003). The results of these surveys were all negative, and Kincaid's lupine will not be discussed further in this assessment.

## **II. Fish and Aquatic Resources**

Information on the condition of aquatic habitat was obtained from Aquatic Habitat Inventory surveys conducted by the Oregon Department of Fish and Wildlife. For all three of the affected streams the surveys found that the number of pieces, condition and availability of large woody debris, important for the formation of pool habitat, was poor. The general condition of riparian habitat adjacent to the streams was also judged to be poor.



All of three of the streams provide habitat for coho salmon, steelhead trout and cutthroat trout. Streams and habitat that are currently or were historically accessible to Chinook and coho salmon are considered Essential Fish Habitat.

### III. Water Resources

Water quality standards are determined for each water body by the Oregon Department of Environmental Quality (2003). Water bodies that do not meet water quality standards are placed on the state's 303(d) list as Water Quality Limited.

Norton Creek and Fate Creek are listed for exceeding water temperature standards. In addition to listing for exceeding water temperature standards, Olalla Creek is also listed for exceeding biological criteria.

Water temperature is a key factor affecting the growth and survival of aquatic organisms. The effect of stream temperature on aquatic organisms, such as fish, varies between species and within the life cycle of a given species (Lantz, 1971).

“Biological criteria” is an assessment of a water body's ability to support a robust macro-invertebrate community. In addition to stream temperature, other factors responsible for the suppression of macro-invertebrate populations in Olalla Creek include elevated levels of bacteria and organic nutrients that are likely the result of run-off from pastures and feedlots, and livestock activity in the stream and adjoining areas.

### IV. Wildlife

The two principal species of concern are the Federally-threatened northern spotted owl (*Strix occidentalis caurina*) and Federally-threatened marbled murrelet (*Brachyramphus marmoratus*).

The **northern spotted owl** inhabits forest stands with multiple shrub and canopy layers, large overstory trees, large snags, and accumulations of coarse woody debris. It nests in large broken-topped trees, cavities in trees and snags, or platforms in tree canopies (Forsman et al 1984, Hershey et al. 1997). Stands that provide sufficient canopy cover and sub-canopy space for spotted owl movement, but lack habitat components for nesting, roosting and foraging are referred to as dispersal-only habitat.

None of the three project sites provides either suitable habitat or dispersal habitat as they are situated in open country devoid of any large conifers and forest cover. No suitable owl habitat is located within one-quarter mile of any of the project sites, well outside of established disturbance thresholds. Consequently, no effects to spotted owls would be anticipated and the species will not be discussed further in this assessment.

The **marbled murrelet** is a member of the auk family that spends most of its life in coastal areas. It forages at sea, but nests on platforms or large branches in trees (Lank et al. 2003). Murrelets do not build nests, but simply create a depression to hold their single egg.

Suitable habitat for murrelets is generally characterized by large trees greater than 18 inches diameter at breast height, multistoried canopies with moderate closure, sufficient limb size and substrate (moss, duff, etc.) to support nest cups, flight accessibility, and protective cover from weather conditions and potential predators (Manley 1999, Burger 2002, Nelson and Wilson 2002). The Olalla Creek and Norton Creek project sites are located in Marbled Murrelet Management Zone 2, which extends 35 to 50 miles inland from the coast. The Fate Creek site is beyond the limits of any management zones.

As described above, with respect to the spotted owl, the project areas are situated in open country devoid of any large conifers and forest cover. No suitable murrelet habitat is located within one-quarter mile of any of the project sites, well outside of established disturbance thresholds. Consequently, no effects to marbled murrelets would be anticipated and the species will not be discussed further in this assessment.

## **V. Cultural/Historical Resources**

Site surveys for cultural and historical resources were conducted at all three of the proposed bridge locations, consisting of pedestrian surveys and shovel probes. All of the surveys were negative. Consequently, no effects to cultural and historical resources are expected and they will not be discussed further in this analysis.

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## **Chapter Four**

# **ENVIRONMENTAL CONSEQUENCES**

This chapter discusses the specific resource values that may be affected, the nature of the direct and indirect effects in both the short term and long term. Given the extremely small spatial scale of the projects, it is expected any effects would be highly localized and would not be measurable in any cumulative sense.

### **I. Vegetation**

#### **A. Alternative One- No Action**

Browsing and trampling would continue to degrade riparian vegetation and impede or prevent the establishment of trees that would provide shade and stabilize stream banks.

Non-native and invasive plants would continue to exploit disturbed areas to the exclusion of native plants, and making the reintroduction and reestablishment of native vegetation increasingly difficult and costly.

#### **B. Alternative Two- The Proposed Action**

With the installation of the bridges and fencing of stream banks to exclude livestock, native riparian vegetation would begin to recover. Other actions such as invasive plant and weed control and replanting of riparian areas with native plants and trees would aid in this recovery.

### **II. Fish and Aquatic Resources**

#### **A. Alternative One- No Action**

As streamside vegetation, particularly sapling trees, is further degraded, sources of large wood for instream recruitment would be reduced and the condition of riparian habitat and availability of large wood for the formation of pool habitat would remain poor.

Additional sediment from eroded stream banks and streamside areas could become embedded in spawning substrates present in and downstream the project areas. Embedded sediments have been linked to low survival rates for fish embryos, and increased turbidity has been associated with disturbance of normal feeding and territorial behavior in juvenile fish. It has also been shown to reduce growth and displace juvenile coho from occupied habitat (Bjornn and Reiser 1991).

The quality of Essential Fish Habitat for coho salmon would decline as a consequence of declining pool habitat and increased sediment that degrades spawning gravels.

## **B. Alternative Two- The Proposed Action**

Excluding livestock from streams and stream side areas would allow for the recovery of streamside vegetation including trees. In the long term, the reestablishment of trees would provide shade and a source of large wood for instream recruitment and formation of pool habitat.

As vegetation recovers and erosion decreases, reductions in sediment would result in improvements to spawning substrate in and downstream of the project areas. This would increase the productivity of macro-invertebrate populations that provide prey for fish, and increase the quality of rearing habitat for juvenile fish.

## **III. Water Resources**

### **A. Alternative One- No Action**

The continued grazing and trampling of vegetation by livestock would further reduce streamside shade and perpetuate conditions of elevated stream temperatures.

As ground cover is further degraded and stream banks are trampled by livestock, the riparian areas would cease to function as a filtering strip for sediment. Erosion and sedimentation will increase resulting in diminished water quality and the possibility of future listing of the stream as water quality for sediment.

The continued input of livestock waste into the streams could also lead to additional listings for factors such as bacteria, dissolved oxygen, and biological oxygen demand.

### **B. Alternative Two- The Proposed Action**

Excluding livestock from the streams and adjacent riparian areas would lead to improvements in water quality, over the long term. As trees are reestablished they will provide shade that will moderate stream temperatures, and root strength to stabilize stream banks. Grasses and herbaceous ground cover will reduce erosion and sedimentation. Exclusion of livestock from the streams will reduce the bacterial and nutrient inputs.

## **IV. Monitoring**

Annual monitoring would be conducted by staff of Partnership for the Umpqua Rivers via photo points, to track and note changes in project site conditions, over time.

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## **Chapter Five**

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Douglas Timber Operators  
National Marine Fisheries Service  
Natural Resources Conservation Service  
Oregon Department of Environmental Quality  
Oregon Department of Fish and Wildlife  
Partnership for the Umpqua Rivers  
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