

## ENVIRONMENTAL ASSESSMENT

**EA Number:** OR-104-06-04

**BLM Office:** Swiftwater RA, Roseburg District

**Proposed Action Title:** Umpqua Basin Tree Revetment Project 2006

### Location of Proposed Action

Table 1: Location of Stream Segments Proposed for Restoration

Stream Name	Township	Range	Section(s)
Deer Creek (Both Forks)	27 South	5 West	15, 16, 19, 20, 21, 22, 23, 24, 25, 26, 35 & 36
		4 West	14, 15, 16, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 31, 32, 34 & 35
	28 South	5 West	1, 2, 11, 12, 13 & 24
		4 West	4, 5, 8 & 9
Dixon Creek	26 South	5 West	22, 23, 27, 28, 29 & 33
Huntley Creek	26 South	4 West	10 & 15
North Myrtle Creek	27 South	4 West	31
	28 South	3 West	6
		4 West	12, 13, 23, 24, 26, 27, 33 & 34
	29 South	4 West	4, 5, 7, 8, 17 & 18
5 West		13, 14, 22, 23, 24, 27 & 28	
South Myrtle Creek	29 South	2 West	6
		3 West	2, 10, 15, 16, 19, 20 & 21
		4 West	19, 20, 21, 22, 23, 24, 29 & 30
		5 West	25, 26 & 27
Pass Creek	22 South	5 West	4, 8, 9 & 17
	21 South	5 West	25, 33, 34, 35 & 36
		4 West	9, 10, 11, 14, 16, 17, 19, 20 & 30
Tenmile Creek	28 South	7 West	27, 28, 29, 31, 32 & 33
		8 West	4, 15, 16, 23, 24 & 25
Shoestring Creek	30 South	5 West	30
		6 West	25 & 36
Quines Creek	32 South	5 West	22, 23, 26 & 35

U.S. Department of the Interior, Bureau of Land Management  
Roseburg District Office  
777 NW Garden Valley Blvd.  
Roseburg, Oregon 97470

Comments on this environmental assessment, including the names and street addresses of respondents, will be made available for public review at the above address during regular business hours, 8:00 A.M. to 4:30 P.M., Monday through Friday, except holidays.

Individual respondents may request confidentiality. Such requests will be honored to the extent allowed by the law. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Submissions from organizations, businesses, and individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

In keeping with Bureau of Land Management policy, the Roseburg District posts Environmental Assessments, Environmental Impact Statements, Findings of No Significant Impact, and Decision Records/Documentations on the district web page under Planning & Environmental Analysis, at [www.or.blm.gov/roseburg](http://www.or.blm.gov/roseburg), on the same day in which legal notices of availability for public review and notices of decision are published in The News-Review, Roseburg, Oregon. Individuals desiring a paper copy of such documents will be provided one upon request. Individuals with the ability to access these documents on-line are encouraged to do so as this reduces paper consumption and administrative costs associated with copying and mailing.

**Table of Contents**

Location of Proposed Action..... 1  
Table of Contents ..... 3  
Chapter 1 Purpose & Need for Action ..... 4  
    A. Background ..... 4  
    B. Proposed Action..... 4  
    C. Relevant Policies, Assessments, and Plans..... 5  
    D. Objectives ..... 6  
    E. Decision Factors..... 6  
Chapter 2 Discussion of Alternatives ..... 7  
    A. The No Action Alternative ..... 7  
    B. The Proposed Action Alternative ..... 7  
    C. Project Design Features as part of the Action Alternative ..... 8  
    D. Monitoring..... 8  
    E. Issues and Resources Considered but Eliminated..... 8  
Chapter 3 Affected Environment & Consequences by Resource..... 9  
    A. Affected Environment ..... 9  
        1. Botany ..... 9  
        2. Hydrology..... 9  
        3. Soils ..... 10  
        4. Fisheries..... 10  
        5. Wildlife..... 12  
    B. Environmental Impacts of the No Action..... 12  
    C. Environmental Impacts of the Proposed Action..... 13  
        1. Description of Potential Impacts ..... 13  
            a. Botany..... 13  
            b. Hydrology..... 13  
            c. Soils ..... 14  
            d. Fisheries..... 14  
            e. Wildlife..... 14  
        2. Cumulative Impacts Analysis..... 14  
            a. Botany..... 14  
            b. Hydrology..... 14  
            c. Soils ..... 15  
            d. Fisheries..... 15  
            e. Wildlife..... 15  
Chapter 2 Contacts, Consultations, and Preparers ..... 18  
    Agencies, Persons, and Permittees Contacted..... 18  
    Public Notification ..... 18  
    List of Preparers ..... 18  
    References Cited..... 19

## **Chapter 1 Purpose & Need for Action**

### **A. Background**

The Bureau of Land Management (BLM) responded to Section 205 of the Secure Rural Schools and Community Self-Determination Act of 2000 (Pub. L. No. 106-393) (the Act) by forming the Roseburg District BLM Resource Advisory Committee (RAC). It is an organization of local community members that collaborates in federal land management activities in the selection of projects to be conducted on federal lands or that will benefit resources on federal lands using O&C/County funds under Title II of the Act. The RAC's designated federal officer (DFO) shall submit federal projects to be considered for funding under Title II of the Act to the Resource Advisory Committee. The Committee members shall review the federal projects and transmit their recommendations on those projects to the DFO on or before September 1. No later than September 30, the DFO will submit to the Secretary of the Interior, or his designee, a description of projects that the Resource Advisory Committee recommends undertaking using funds reserved by eligible counties for expenditure pursuant to Title II of the Act and within the Committee's geographic jurisdiction.

The Act states that “[p]roject funds shall be expended solely on projects that meet the requirements outlined in the Act including a description of the project,” duration, cost, source(s) of funding, and expected outcomes that meet or exceed desired ecological conditions. The project must also detail a monitoring plan that tracks and identifies the impacts, implementation, and assesses the projects results whether or not the project exceeded desired ecological conditions, etc.

Douglas Soil and Water Conservation District (DSWCD) proposed the Umpqua Basin Tree Revetment Project for funding, because many streams in Douglas County have streambank erosion. This erosion has resulted in increased levels of sediment delivered and suspended or stirred up in the stream-flow. Existing riparian vegetation is sparse and does not provide enough root mass to support bank stability or stream canopy to provide shade. The Roseburg BLM District RAC recommended and Jay Carlson, Roseburg District Manager (DFO) approved the project in September 2005. The Bureau of Land Management is developing the National Environmental Policy Act (NEPA) documentation because the project is federally funded.

This federally funded project would benefit the Bureau of Land Management by improving watershed health; by improving stream stability with willows and other native plant species, reducing sedimentation in project streams which would improve pool, spawning and rearing habitat for resident and anadromous fish. Overall, this would improve habitat for coho salmon and other native fish populations. It would also enhance relationships between the BLM, local communities, and private landowners through collaboration with DSWCS and the RAC.

### **B. Proposed Action**

The DSWCD proposes to improve stream channel conditions (selected from approximately 130 stream miles) entirely on privately owned and managed lands by placing and securing tree revetments along streambanks, removing invasive brush, and planting native vegetation along

streambanks and riparian areas. Revetments are structures, such as clumps of Christmas trees, secured to streambanks, positioned to catch sediment, and slow stream velocities. This would improve overall stream conditions and water quality by adding structure to riparian systems. Tree revetments are an effective method for landowners to prevent or control streambank erosion as part of an overall riparian zone restoration process. The identified project areas are well suited for tree revetments because of poorly developed and unstable riparian corridors and eroding streambanks. The revetments collect sediment and provide a foundation for riparian vegetation reestablishment. The sediment trapped by the revetments improve downstream water quality, reduce stream current near eroding banks, and develop areas to serve as a planting sites for riparian zone vegetation. This vegetation helps to trap more sediment, binds the soil to the streambank, and provides future streamside shade.

Project sites were selected from private lands that are easily accessible with fair habitat conditions, but actively eroding streambanks. Operations would occur during the dry season when soil strengths are at their greatest. Poorly drained areas would be avoided when water tables are high. The project would be completed within the ODFW instream - work period of July 1 through September 16.

The proposed project would be conducted by hand, without the use of mechanized equipment, minimizing ground disturbance. Seven to ten tree revetments would have “t” posts installed in the streambank to secure clumps of trees, by cable in selected streams throughout the County (potential location maps attached). Invasive brush would be manually removed and native riparian vegetation would be hand planted along the banks for long-term bank stability and riparian habitat improvement.

### **C. Relevant Policies, Assessments, and Plans**

This project would occur entirely on privately owned and managed lands. Although the *Roseburg District Record of Decision and Resource Management Plan* (RMP) does not apply, CEQ regulations state that since the project would be “entirely or partly financed” by federal agencies this would be considered a federal action (1508.18 (a) and (b) (4)). For this reason, the National Environmental Policy Act does apply and the project impacts must be analyzed.

1. The project would follow the “Umpqua Basin Watershed Assessment and Action Plan” developed by the Umpqua Basin Watershed Council. The plan recommends placement of instream structures similar to tree revetments to “improve pools, collect gravel and improve overall fish habitat.” It also recommends riparian area protection that includes “planting native riparian trees and shrubs and understory vegetation (Title II, 2005).
2. The project would also take direction from “The Oregon Plan for Salmon and Watersheds” that encourages “restoration and healthy function of Oregon’s natural aquatic systems” (Title II, 2005).

### **D. Objectives**

The overall objectives of the proposed action are to directly improve streambank and indirectly

improve stream/fish habitat conditions in selected areas for species that use them sometime during their lifecycle.

Specific objectives of the proposed action are to:

- Place revetments in such a manner as to trap silt and sediment and reduce the stream's current near eroding streambanks.
- Remove invasive brush to make room for native riparian vegetation.
- Plant native riparian vegetation along streambanks to stabilize banks and provide shade and riparian habitat for terrestrial and aquatic species.
- Place revetments and plants in such a manner to improve stream conditions (i.e., temperature, turbidity, etc.)

## **E. Decision Factors**

Factors to be considered when selecting among alternatives will include:

- The degree to which the objectives previously described would be achieved including: the manner that placement of revetments would be conducted, the time period of the proposed treatment, cost and funding sources;
- The expected result from tree revetments installation, invasive brush removal, and native riparian vegetation planting;
- The indirect benefit to federal lands and resources through stabilizing streambanks and reducing erosion and downstream sedimentation on privately owned and managed lands;
- Willingness of private landowners to participate in the proposed project.

## **Chapter 2 Discussion of Alternatives**

### **A. The No Action Alternative**

The No Action Alternative provides a baseline for the comparison of the alternatives. This alternative describes the existing condition and continuing trends anticipated in the absence of the proposal but with the implementation of other reasonably foreseeable federal and private projects.

Federal funding would not be extended to assist in streambank stabilization or improvement of stream conditions on private lands from this project. Although funding could be sought from alternate sources, both lateral (along the streambed) and vertical (down-cutting) erosion would likely continue until funding was obtained to accomplish the work.

Lateral erosion creates the majority of sedimentation. The rate of stream bank erosion is not constant, but is episodic, occurring during large storm events. However, one to two feet of bank erosion is common annually and in some locations, as much as 10 feet can erode in a single flood event. Sediment levels and amounts of suspended particles in the stream-flow would likely continue unchecked. Invasive plants would likely continue to occupy growing space, inhibiting growth of native plants. Sediment would not be trapped adequately and stream current would continue to erode banks. Poorly developed and unstable riparian corridors would continue.

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

This alternative proposes funding of the Douglas Soil and Water Conservation District project to improve stream channel conditions (selected from approximately 130 stream miles) on private lands by placing and securing tree revetments along streambanks, removing invasive brush, and planting native vegetation along streambanks and riparian areas. Landowners, students and community volunteers would contribute labor. DSWCD would be responsible for youth or volunteer programs.

#### **1. Invasive Brush Removal**

Hand cutting and pulling invasive, noxious, and non-native brush would be performed to prepare potential treatment locations.

#### **2. Installing Revetments**

Seven to ten tree revetments (structures, such as clumps of Christmas trees, secured to streambanks, positioned to catch sediment, and slow stream velocities) would have series of "t" posts installed in streambanks. Clumps of trees would be attached to the "t" posts by a cable to hold the trees in place during high water events. The posts and tree clumps would be arranged along the streambank to catch and hold sediment in place, then divert stream current away from the streambank.

#### **3. Native Vegetation Planting**

DSWCD obtained permission to harvest trees from six sites, which would be donated to the project. No trees would be removed from federal lands directly related to this project. Native trees and shrubs would be planted in or along streambanks. Landowners, students and

community volunteers would contribute labor for native riparian tree and shrub species planting. DSWCD would be responsible for youth or volunteer programs.

This project would follow the “Umpqua Basin Watershed Assessment and Action Plan” developed by the Umpqua Basin Watershed Council. The plan’s key findings and recommendations include “the placement of large root wads, logs and/or boulders in streams or creeks to improve pools, collect gravel and improve overall fish habitat.” Additionally, the plan encourages land use practices that enhance or protect the riparian areas by: “Protecting riparian areas from livestock-caused browsing and bank erosion through riparian fencing and providing off-channel water systems and by planting native riparian trees and shrubs and understory vegetation in areas with poor or fair riparian areas.”

### **C. Project Design Features as part of the Action Alternative**

#### **1. To protect riparian habitat:**

All operations in the riparian area would be done by hand. No mechanized equipment would be used in the riparian area. The project would be completed within the ODFW instream work period of July 1 through September 16.

#### **2. To minimize soil erosion as a source of sedimentation to streams:**

Materials used in the project would be manually transported to the project. No roads would be constructed to access project locations and easily accessible sites would be selected to facilitate access.

#### **3. To prevent the spread of noxious weeds:**

Equipment would be clean and free of weed seed prior to operations in the riparian area.

### **D. Monitoring**

Douglas Soil and Water Conservation District would establish photo points to visit for photo documentation at year 1, 2, 5, and 10 after operations are completed. Landowners, at their discretion, may assist in monitoring by providing photos from the established photo points.

### **E. Issues and Resources Considered but Eliminated**

Although this proposed action is a federal action, Aquatic Conservation Strategy (ACS) consistency was not evaluate in this analysis, because the proposed action is not a on federally administered lands. The ACS applies to federally administered lands within the Northwest Forest Planning Area.



## Chapter 3 Affected Environment & Consequences by Resource

### A. Affected Environment

The affected area was analyzed for the resources listed below.

1. The proposed projects would be located on private lands, therefore surveys for Special Status or Survey and Manage plants are not applicable (Bureau Manual 6840).
2. The proposed projects would be located on private lands, therefore surveys for Special Status or Survey and Manage wildlife species are not applicable (Bureau Manual 6840).
3. A records review for cultural resources indicated the presence of two previously recorded archaeological sites within the project area. The areas near the two sites have been excluded from the project.

**1. Botany** – Review of data, records, and maps have indicated that Special Status Plants are not likely to exist in the project areas. Specifically, habitat is not present for *Plagiobothrys hirtus* (Recovery Plan for the Rough Popcorn Flower, USFWS, Portland OR, 2003). Additionally, there is no habitat present for *Lupinus sulphureus ssp. kincaidii*. (Recovery Outline for *Lupinus sulphureus ssp. kincaidii*, USFWS, Portland OR, 2006).

There are infestations of noxious, invasive, and non-native plants throughout the project area, including Scotch broom (*Cytisus scoparius*), Himalayan blackberry (*Rubus discolor*), Gorse (*Ulex europaeus*), Yellow star thistle (*Centaurea solstitialis*), and Hawthorn (*Crataegus monogyna*) among others. These species would be cut or pulled within the revetment sites.

**2. Hydrology** - The proposed project is located within the following fifth-field watersheds and sixth-field subwatersheds:

**Table 2. Watersheds and Subwatersheds.**

Tree Revetment Project	Watershed	Subwatershed
Deer Creek North Fork Deer Creek South Fork Deer Creek	Lower South Umpqua	Upper Deer Creek Lower Deer Creek
Dixon Creek	Lower North Umpqua	Cooper Creek
Huntley Creek	Lower North Umpqua	Cooper Creek
Myrtle Creek North Myrtle Creek South Myrtle Creek	Myrtle Creek	Upper North Myrtle Lower North Myrtle Upper South Myrtle Lower South Myrtle
Pass Creek	Elk Creek/Umpqua River	Upper Pass Creek Lower Pass Creek
Shoestring Creek	Lower Cow Creek	Lower Cow Creek
Tenmile Creek	Olalla Creek-Lookingglass Creek	Tenmile Creek
Quines Creek	Middle Cow Creek	Cow Creek-Quines Creek

Beneficial Uses of Water downstream of the project areas consist primarily of domestic water supply, irrigation and livestock watering, resident fish and aquatic life, and salmonid spawning and rearing. Deer Creek, North Myrtle Creek, South Myrtle Creek, and Quines Creek were identified by the ODEQ as water quality limited for summer temperature. In addition, Deer Creek is listed for exceeding the dissolved oxygen and fecal coliform standards. The North Fork of Deer Creek is also listed for fecal coliforms (Oregon DEQ, 2003).

**3. Soils** – The proposed tree revetments would affect soils formed on floodplains, terraces, alluvial fans and footslopes bordering and in close proximity to treatment streams. The soil properties are highly variable. They typically have soil textures that are moderately erodible and sensitive to compaction. Some textures are highly erodible. Both moderately erodible and highly erodible soil textures are very sensitive to stream bank erosion under bare soil conditions. Some affected soils might have a seasonably high water table (poorly drained soils) (Natural Resource Conservation Service Soil Survey of Douglas County).

**4. Fisheries** – The proposed action would occur on fish-bearing streams or their tributaries. The affected fifth-field watersheds are:

1. Lower South Umpqua,
2. Lower North Umpqua,
3. Myrtle Creek
4. Elk Creek/Umpqua River
5. Middle Cow Creek
6. Lower Cow Creek
7. Olalla Creek-Lookingglass Creek

Oregon Coast Steelhead trout (*Oncorhynchus mykiss*), Coastal Cutthroat trout (*O. clarki clarki*), Oregon Coast Chinook salmon (*O. tshawytscha*), Oregon Coast coho salmon (*O. kitsutch*) and Pacific Lamprey (*Lampetra tridentate*) are present in each watershed. The Umpqua Chub (*Oregonichthys kalawatseti*) has been documented in the Lower South Umpqua, and Lower and Middle Cow Creek. There are no Threatened or Endangered species within the proposed project area. Oregon Coast Steelhead trout (*O. mykiss*) are a Federal Species of Concern. The proposed project is located within Essential Fish Habitat for coho and Chinook salmon.

**Current Fish Distributions and Habitat Conditions (Compiled from BLM Watershed Analysis, ODFW Habitat Inventory/StreamNet GIS and ODEQ 303d List of Water Quality Limited Streams) –**

Lower South Umpqua:

Project Areas: Deer Creek, North Fork of Deer Creek, South Fork of Deer Creek

The Oregon Department of Fish and Wildlife (ODFW) documented winter steelhead and coho salmon presence throughout much of the Deer Creek watershed. Poor habitat conditions consisting of high stream temperatures and lack of stream habitat complexity (large woody structure,

backwater pools, side channels, and flood plain connectivity) prevent sea-run cutthroat trout from using stream reach in the lower part of the South Umpqua River Basin.

ODFW Aquatic Habitat Inventories rated eleven of the twelve Deer Creek stream reach surveyed as being in “Fair” condition. One stream range was rated as being in “Poor” condition. Limiting factors cited include; reduced instream habitat structure, increased sedimentation, and absence of functional riparian areas. The Oregon Department of Environmental Quality (ODEQ) lists Deer Creek as water quality limited for: habitat modification, temperature (salmonid spawning 12.8 degrees Celsius, rearing 17.8 degrees Celsius), and dissolved oxygen (spawning).

#### Lower North Umpqua

Project Areas: Dixon Creek, Huntley Creek.

ODFW has documented winter steelhead, coho salmon and cutthroat trout presence throughout much of Dixon Creek and Huntley Creek. Cutthroat is found primarily in headwater streams with gradients greater than 4 percent. ODFW reports that juvenile Pacific lamprey is found throughout the Lower North Umpqua watershed.

Within the Lower North Umpqua Watershed, ODFW surveyed 24 stream reach. Of these reach, none rated as fair or good. Twenty-three stream reach were rated as poor. More than 80% of reach have poor riparian areas, and 60% of reach have poor pool habitat. In the Lower North Umpqua Watershed, the North Umpqua River is 303(d) listed for summer and fall temperatures (Salmonid spawning 12.8 degrees Celsius, rearing 17.8 degrees Celsius).

#### Myrtle Creek

Project Areas: Myrtle Creek, North Myrtle Creek, South Myrtle Creek.

Fall Chinook, coho salmon, and winter Steelhead trout are present in the watershed. Chinook and coho are found in lower portions of the watershed. Coho and Steelhead use the upper portions of both creeks.

ODFW Aquatic Habitat Inventories rated 74 out of approximately 875 miles in the Myrtle Creek basin. Upper South Myrtle Creek and North Myrtle Creek were rated as “Fair”. Lower South Myrtle Creek was rated as “Poor”. Relatively high width to depth ratios, lack of deep pools, sedimentation and lack of large woody debris contributed to less than optimal habitat. North Myrtle Creek is listed as water quality limited by the ODEQ for; habitat modification, temperature (salmonid year round non-spawning 18 degrees C), and dissolved oxygen (non-spawning). South Myrtle Creek is listed for temperature (salmonid year round non-spawning).

#### Elk Creek/Umpqua River

Project Areas: Pass Creek

Elk Creek and its tributaries contain spawning and rearing habitat for low-to-mid water velocity dependant fish species. These include coho and Chinook salmon, steelhead, cutthroat trout, and pacific lamprey.

ODFW Aquatic Habitat Inventories indicate that Pass Creek has a high percentage of instream fine sediment (35 percent - >50 percent). Harvey (2001) reported macroinvertebrate densities in several South Umpqua tributaries decreased by 75 percent when larger stream substrates became 40 percent embedded by fines. Diversity was also reduced, in particular, larger macroinvertebrates of high food value to juvenile salmonids. The ODEQ lists Pass Creek as water quality limited for dissolved oxygen and temperature (salmonids, year round, non-spawning 18 degrees Celsius).

Olalla Creek-Lookingglass Creek

Project Areas: Tenmile Creek

Specific fish distribution and habitat information for Tenmile Creek was not available. However, ODFW has documented winter steelhead and resident rainbow trout, fall and spring Chinook salmon, coho salmon and sea-run and resident cutthroat trout as present in the Olalla/Lookingglass watershed. Umpqua chub and Pacific lamprey are also present. ODEQ does not list Tenmile Creek as water quality limited.

Middle and Lower Cow Creek

Project Areas: Lower Cow Creek- Quines Creek, Middle Cow Creek-Shoestring Creek.

ODFW has documented Lower and Middle Cow Creek use by winter steelhead and resident rainbow trout, fall and spring Chinook salmon, coho salmon and sea-run and resident cutthroat trout. Coho distribution in the watershed includes Quines Creek. BLM Bureau Sensitive Pacific lamprey and Umpqua chub are also present in Cow Creek.

Specific habitat information for Shoestring and Quines Creek is limited. However, ODFW Aquatic Habitat Inventories rated 52 of 67 streams in the Lower Cow Creek WAU as "Fair". Two streams were rated as poor. Lack of large woody debris, excessive sediment, lack of shade and high stream temperatures were cited as limiting factors. The ODEQ lists Quines Creek as limited for salmonids due to habitat modification and elevated temperature (rearing 17.8 degrees Celsius).

**5. Wildlife** – Of the federally threatened wildlife species, the bald eagle (*Haliaeetus leucocephalus*), marbled murrelet (*Brachyramphus marmoratus*), and northern spotted owl (*Strix occidentalis caurina*) are known to occur within the proposed action area. However, none of the stream segments proposed for restoration occurs within one mile of a known bald eagle nest territory or marbled murrelet nest sites. No known spotted owl activity center occurs within 65 yards of proposed stream segments.

Within the proposed action area can be found designated habitats for the marbled Murrelet or the spotted owl. However, the stream segments proposed for restoration are not located within these critical habitat designations.

## **B. Environmental Impacts of the No Action**

The No Action Alternative provides a baseline for the comparison of the alternatives. This alternative represents the existing condition. If this alternative were selected there would be no improvement to the existing degrading conditions. Soil erosion would continue to degrade the streambanks and add fine and coarse sediment into the stream channels. Water quality would continue to decline and fisheries habitat conditions would continue to be impacted by chronic sedimentation. The impacts to fisheries from the discharge of sediment would be a result of two distinct mechanisms - increased turbidity and increased deposition of sediment. Increases in turbidity can cause respiratory distress (gill irritation). Respiratory distress would cause salmonids to avoid turbidity, thereby delaying adult salmonid spawning migrations, and by forcing juvenile fish to avoid rearing habitats (Meehan 1991). Delays in spawning migration and habitat avoidance both result in use of a fish's energy reserves, and can lead to increased fish mortality. Increases in fine sediment (silt and clay) deposits on the streambed can result in embedded spawning gravels, thereby reducing the flow of oxygenated water to incubating eggs and reducing the number of eggs that successfully hatch. If large amounts of sediments enter the stream channel, pools may also start to fill in, further reducing the amount and quality of the habitat, and reducing the number of fish that could potentially rear there. Noxious, invasive and non-native plant species would continue to inhabit growing spaces along the streambanks and native riparian plant species would likely be crowded out. Structure from noxious, invasive, and non-native plants would create habitat unsuitable for wildlife species within riparian areas.

## **C. Environmental Impacts of the Proposed Action**

### **1. Description of Potential Impacts**

Analysis considers the direct impacts (effects caused by the action and occurring at the same place and time), indirect impacts (effects caused by the action but occurring later in time and farther removed in distance) and cumulative impacts (effects of the action when added to other past, present and reasonably foreseeable future actions) on the resource values.

**a. Botany** – Based on a determination that there would be minimal ground disturbance associated with the project, the Proposed Action is expected to have no effect on Special Status Plants (SSP). No adverse impacts to SSP are anticipated under this alternative because manual labor is used for placement of cables and tree clumps in the riparian areas. Project design features (e.g. equipment cleaning, and manual weed removal) would likely reduce the abundance and distribution of noxious, invasive, and non-native plant species within the Proposed Action project sites.

**b. Hydrology** – Tree revetments would have a direct effect on channel morphology by preventing or controlling streambank erosion. Streambank erosion tends to increase stream width to depth ratios which results in wider and shallower streams. Streambank erosion can also lead to a loss in streamside vegetation which provides shade to the stream. Wide, shallow streams tend to absorb more solar radiation, which along with reductions in stream shade can result in increased stream temperatures. The revetments collect sediment and provide a substrate for riparian

vegetation reestablishment. The sediment trapped by the revetments would improve downstream water quality, reduce stream current near eroding banks, and serve as a planting site for riparian zone vegetation. This vegetation helps to trap more sediment, binds the soil to the streambank, and eventually provides streamside shade. Stabilized streambanks would allow for deposits of sediment to build up within the stream channel, which tends to result in a decrease in stream width to depth ratios, which results in a narrower and deeper stream. A deep, narrow stream would absorb less solar radiation and along with improved stream shade over time would be expected to decrease stream temperatures. This would improve water quality conditions for the streams listed as water quality limited for stream temperature. Decreased stream temperatures would also help improve dissolved oxygen levels in Deer Creek, but this project would have no effect on fecal coliform levels in the listed streams (Deer Creek and North Fork Deer Creek).

**c. Soils** – Manually moving trees and equipment from roads to streambanks and securing them by hand would reduce impacts to soil displacement and compaction. Dry season operations would reduce soil compaction because soil strengths are at their greatest during this period and poorly drained areas would be avoided when water tables are high. The revetments are expected to stabilize streambanks and generate a foundation for riparian vegetation.

**d. Fisheries** – No adverse impacts to fisheries are anticipated under this alternative.

Successful stabilization of eroding stream banks, and development of properly functioning riparian areas, are expected to provide several direct benefits to aquatic life. Physical habitat can be expected to improve through development of undercut banks, which provide vital cover and holding areas for fish. Increased riparian vegetation is expected to enhance overhead cover from predators and reduce thermal inputs. Reducing stream width to depth ratios is expected to increase water velocities, locally, flushing fines and improving spawning substrate. Fish holding areas in pools are expected to improve with increasing channel depth. Energy inputs to the stream, in the form of riparian leaf fall, increase macroinvertebrate productivity and is expected to enhance fish carrying capacity. Dill, et al., found that the sizes of coho territories are inversely related to the density of aquatic bottom food in the area (Grooot and Margolis, 1991).

**e. Wildlife** – There would be no direct or indirect impacts to federally-listed threatened or endangered wildlife species or critical habitat, because no federally-listed terrestrial wildlife species or their respective habitats are present within the proposed project area.

Once the revetments collect sediment and provide a foundation for riparian vegetation reestablishment, streamside shade would develop in time, which would improve habitat conditions for wildlife species that use the riparian corridors. In addition, planting of native species would improve the quality and structure of native vegetative habitat for wildlife species within the riparian habitats.

## **2. Cumulative Impacts Analysis**

**a. Botany** – Noxious, invasive and non-native plant species populations at the site level would be reduced by manual removal. No cumulative effects are anticipated for federally listed Threatened or Endangered plant species.

**b. Hydrology** – At the fifth-field watershed scale, the scope of this project is too small for substantively altering current watershed functions. It can be reasonably expected that under the “Umpqua Basin Watershed Assessment and Action Plan” that landowners would protect . . . riparian areas from livestock-caused browsing and bank erosion through riparian fencing and providing off-channel water systems. . . .” In five to ten years, this would lower the fecal coliform levels in the water and establishment of native riparian plants would improve bank stability. Fine sediment would be removed from the streambed while allowing it to be deposited onto vegetated streambanks. As other restoration projects are implemented, streambank stability and water quality would continue to improve.

**c. Soils** - At the fifth-field watershed scale, the scope of this project is too small to affect soil quality and productivity. It can be reasonably expected that under the “Umpqua Basin Watershed Assessment and Action Plan” that landowners would “protect . . . riparian areas from livestock-caused browsing and bank erosion through riparian fencing and providing off-channel water systems. . . .”

**d. Fisheries** – As indicated in the Hydrology and Soils assessments above, the proposed streambank treatments would be limited to the site scale and not extended to the fifth- Field. However, the proposed project would have a long-term (five to ten year) benefit through the reduction of sedimentation and improved water quality. A long-term reduction of chronic sedimentation would increase the fisheries potential though an increase in fish migration, as well as improved spawning and rearing habitats.

**e. Wildlife** – As indicated in the Hydrology and Soils assessments above, the proposed streambank treatments would be limited to the site scale and not extended to the fifth- Field. However, the proposed project, in conjunction with the “Umpqua Basin Watershed Assessment and Action Plan” would have a long-term (five to ten year) benefit through the reduction of sedimentation and improved water quality. A long-term reduction of chronic sedimentation would increase the fisheries potential through an increase in fish migration, as well as improved spawning and rearing habitats.

**Critical Elements of the Human Environment**

“Critical Elements of the Human Environment” is a list of elements specified in BLM Handbook H-1790-1 that must be considered in all EA's. These are elements of the human environment subject to requirements specified in statute, regulation, or executive order. These elements have been analyzed for potential effects and are as follows:

<u>Critical Elements</u>	<u>Potentially Affected</u>	
	<u>No</u>	<u>Yes</u>
Air Quality	X	
ACEC	X	
Cultural Resources	X	
Environmental Justice	X	
Farmlands, Prime/Unique	X	
Floodplains	X	
Invasive and Nonnative Species		X
Nat. Amer. Religious Concerns	X	

Threatened & Endangered Species	X	
Waste, Hazardous/Solid	X	
Water Quality, Drinking / Ground		X
Wetlands/Riparian Zones		X
Wild and Scenic Rivers	X	
Wilderness	X	

The following elements of the human environment are subject to requirements specified in statute, regulation, or executive order (BLM NEPA Handbook, Appendix 5). These resources or values are either not present or would not be affected by the proposed actions or alternatives, unless otherwise described in this EA. This negative declaration is documented below by individuals who assisted in the preparation of this analysis.

Table 3. Critical Elements of Human Environment for Umpqua Basin Tree Revetment Project

Element	Responsible Position	Remarks
Air Quality	Fuels Management Specialist	Possible minimal localized dust within project area
Areas of Critical Environmental Concern	Environmental Specialist	Project is not within or near an ACEC.
Cultural Resources	Archeologist	Project boundary adjusted to avoid site impacts.
Environmental Justice	Environmental Specialist	No disproportionate use by Native Americans, minorities or low-income populations.
Farm Lands (prime or unique)	Soil Scientist	"No discernable effects are anticipated" (PRMP pg. 1-7)
Flood Plains	Hydrologist	Floodplain function would not be affected.
Invasive Nonnative Species	Botanist	Treatment of invasive species and non-native species is not a component of this EA.
Native American Religious Concerns	Environmental Specialist	No concerns were noted from public contact
T&E Terrestrial Species	Wildlife Biologist	Proposed project would have no effect on T&E species.
T&E Plant Species	Botanist	Surveys for SSP are not required for this project.
T&E Aquatic Species	Fisheries Biologist	There are no listed fish species within the project area.
Hazardous/Solid Wastes	Area Hazardous Materials Coordinator	Applicable Haz. Mat. Policies would be in effect.
Water Quality Drinking/Ground Water	Hydrologist	No adverse affect to Water Quality or Drinking/Ground Water.
Wetlands/Riparian Zones	Hydrologist	No adverse affect to Riparian Zones or Wetlands.



Element	Responsible Position	Remarks
Wild and Scenic Rivers	Recreation Planner	Project is not within scenic river corridor
Wilderness	Recreation Planner	Project is not within a wilderness study area.

The following items are not considered a Critical Element, but have been cited by regulation or Executive Order as an item warranting consideration in NEPA documents:

**Healthy Lands Initiative** – This project would not violate the Healthy Lands Initiative.

**Adverse Energy** – Executive Order 13212 provides that all decisions made by the Bureau of Land Management will take into consideration adverse impacts on the President’s National Energy Policy. This project would not have a direct or indirect adverse impact on energy development, production, supply, and/or distribution and therefore would not adversely affect the President’s National Energy Policy.

**Indian Trust Resources** – Secretarial Order No. 3175 (November 8, 1993) requires that any significant impact to Indian Trust resources be identified and addressed in NEPA documents. There are no known Indian Trust resources; therefore, this project is expected to have no impacts to these resources.

## Chapter 4 Contacts, Consultations, and Preparers

### Agencies, Persons, and Permittees Contacted

US Fish and Wildlife Service  
National Oceanic and Atmospheric Administration (NOAA - fisheries)  
State Historic Preservation Office  
Douglas County Commissioners  
Seneca Jones Timber Co.  
Lone Rock Timber Co.  
Giustina Resources Ltd. Partnership  
Weyerhaeuser Company  
Woolley Enterprises Inc.  
Roseburg Resources Co.

### Preparers

A.C. Clough	Team Lead
Jeffrey Wall	NEPA Writer/Editor
Isaac Barner	Cultural Resources
James Harvey	Fish Biology
Daniel Cressy	Soil
Daniel Dammann	Hydrology
Elizabeth Gayner	Wildlife Biology
Evan Olson	Botany
Gary Basham	Botany

### Public Notification

1. Notification was provided (June 29, 2006) to affected **Tribal Governments** (Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz, and the Cow Creek Band of Umpqua Tribe of Indians). No comments were received.
2. The **general public** was notified via the *Roseburg District Planning Update* (Winter 2006) which was sent to approximately 150 addressees. These addressees consist of members of the public that have expressed interest in Roseburg District BLM projects. No comments were received.
3. This EA, and its associated documents, will be provided to certain **State, County and local government** offices including USFWS, NMFS, Oregon Department of Environmental Quality, and the Oregon Department of Fish and Wildlife. If the decision is made to implement this project, it will be sent to the aforementioned State, County, and local government offices.
4. A 15-day **public comment period** will be established for review of this EA. A Notice of Availability would be published in *The News-Review*. The public comment period will begin with publication of the notice published in *The News-Review* on June 19, 2007 and

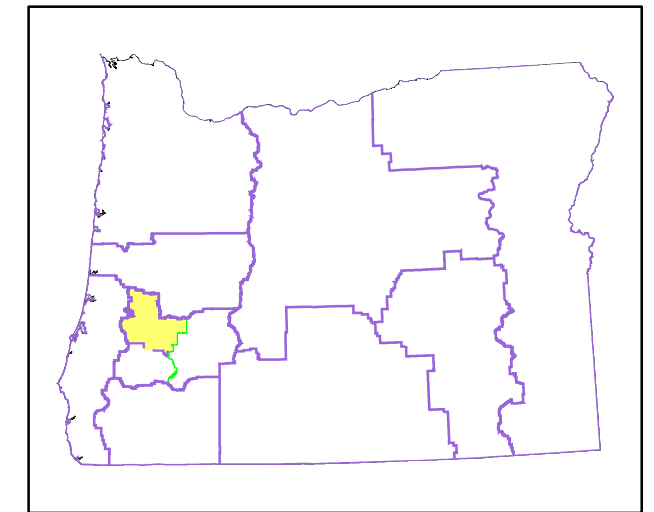
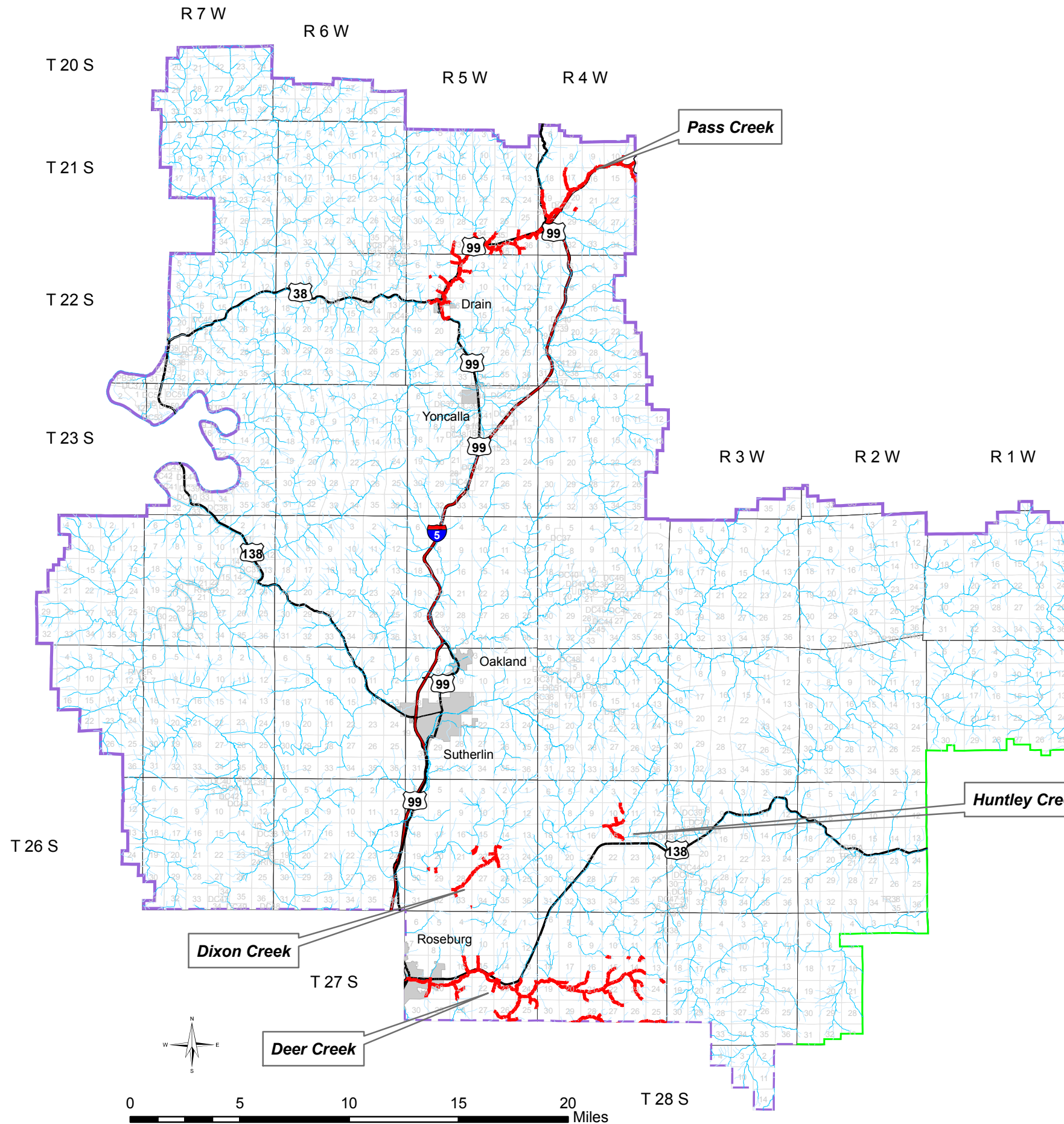
end close of business July 5, 2007. Comments must be received during this period to be considered for the subsequent decision. This EA and its associated documents will be sent to all parties who request them. If the decision is made to implement this project, a notice will be published in *The News-Review* and notification sent to all parties who request them.

## References

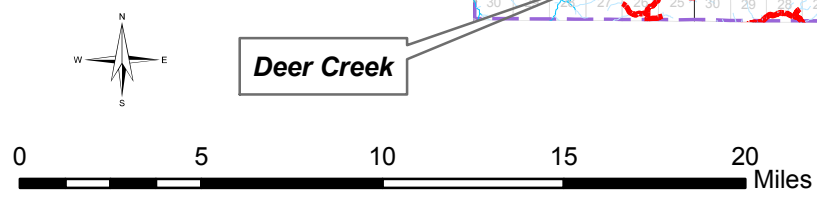
- Geyer, Nancy A. 2000. Lower South Umpqua Watershed Analysis. Umpqua Basin Watershed Council and Bureau of Land Management – Roseburg District. Roseburg, Oregon, USA.
- Groot, C. and L.Margolis editors.1991. Pacific Salmon Life Histories. UBC Press, Vancouver, British Columbia.
- Harvey, J.H. 2001. Results of Macroinvertebrate Monitoring Conducted in Support of the South Umpqua River Water Quality Management Plan. Bureau of Land Management – Roseburg District, Roseburg, Oregon, USA.
- Meehan, William R. editor.1991. Influences of Forest and Rangeland Management on Salmonid Fishes and their Habitats. American Fisheries Society. Evans City, Pennsylvania, USA.
- Oregon Department of Environmental Quality, 2003. Oregon’s final 2002 303(d) list, Portland Oregon [<http://www.deq.state.or.us/wq/303dlist/303dpage.htm>].
- Oregon Department of Environmental Quality. 2006. Oregon DEQ Water Quality Division: Oregon’s 2004/2006 Integrated Report [<http://www.deq.state.or.us/wq/wqldata/wqlsdata2004/view303dlist04.asp>].
- Oregon Department of Fish and Wildlife. Umpqua Basin Aquatic Habitat Surveys.
- Soil Survey of Douglas County Area, Oregon. USDA Natural Resource Conservation Service in Cooperation with USDA Forest Service, DOT, BLM, Oregon Agricultural Experiment Stations and Douglas County. 1994.
- Title II Project Application for 2005 Funds (Round #5) Roseburg District Resource Advisory Committee. p. 6.
- USDA Forest Service and USDI Bureau of Land Management and Fish and Wildlife Service. 2006. Programmatic Conservation Agreement for Kincaid’s Lupine in Douglas County. April 2006. p. 2.
- USDI Bureau of Land Management. 1992a. Draft Roseburg District Resource Management Plan and EIS. Roseburg, Oregon, USA. 2 vols.
- USDI Bureau of Land Management. 1994. Roseburg District Proposed Resource Management Plan/Environmental Impact Statement. Roseburg, Oregon, USA.


- USDI Bureau of Land Management. 1995. Record of Decision and Resource Management Plan. Roseburg District. Roseburg, Oregon, USA. 216 pp.
- USDI Bureau of Land Management. 1998. Ollalla-Lookingglass Watershed Analysis. April 1998.
- USDI Bureau of Land Management. 2000. Lower South Umpqua Watershed Analysis. May 2000. Roseburg District. Roseburg, Oregon, USA.
- USDI Bureau of Land Management. 2002. Myrtle Creek Watershed Analysis and Water Quality Restoration Plan. October 2002.
- USDI Bureau of Land Management. 2002. Lower Cow Creek Watershed Analysis and Water Quality Restoration Plan. November 2002. BLM District Office, Roseburg, Oregon.
- USDI Bureau of Land Management. 2004. Elk Creek/Umpqua River Watershed Analysis. March 2004. BLM District Office, Roseburg, Oregon. 120 pp.
- USDI Bureau of Land Management and Fish and Wildlife Service. 2003. OR/WA Field Book for ESA, Streamlined Consultation and Special Status Species: Section A—Bureau of Land Management Policies; 6840 Special Status Species Management. Last Updated: March 27, 2003.
- USDI Fish and Wildlife Service. 2003. Recovery Plan for the Rough Popcorn Flower (*Plagiobothrys hirtus*).

# Swiftwater Stream Revetment Project



- Legend**
- Stream Revetment Project
  - Stream - 3rd order and higher
  - Stream - 2nd order
  - Interstate
  - State Highway
  - Other
  - National Forest Boundary
  - Resource Area Boundary
  - Roseburg District Boundary
  - City Limit
  - Township Range
  - Section

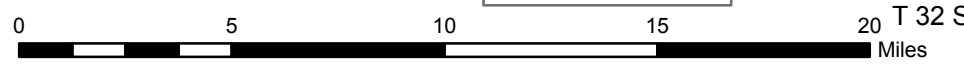
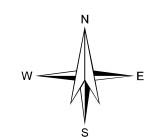
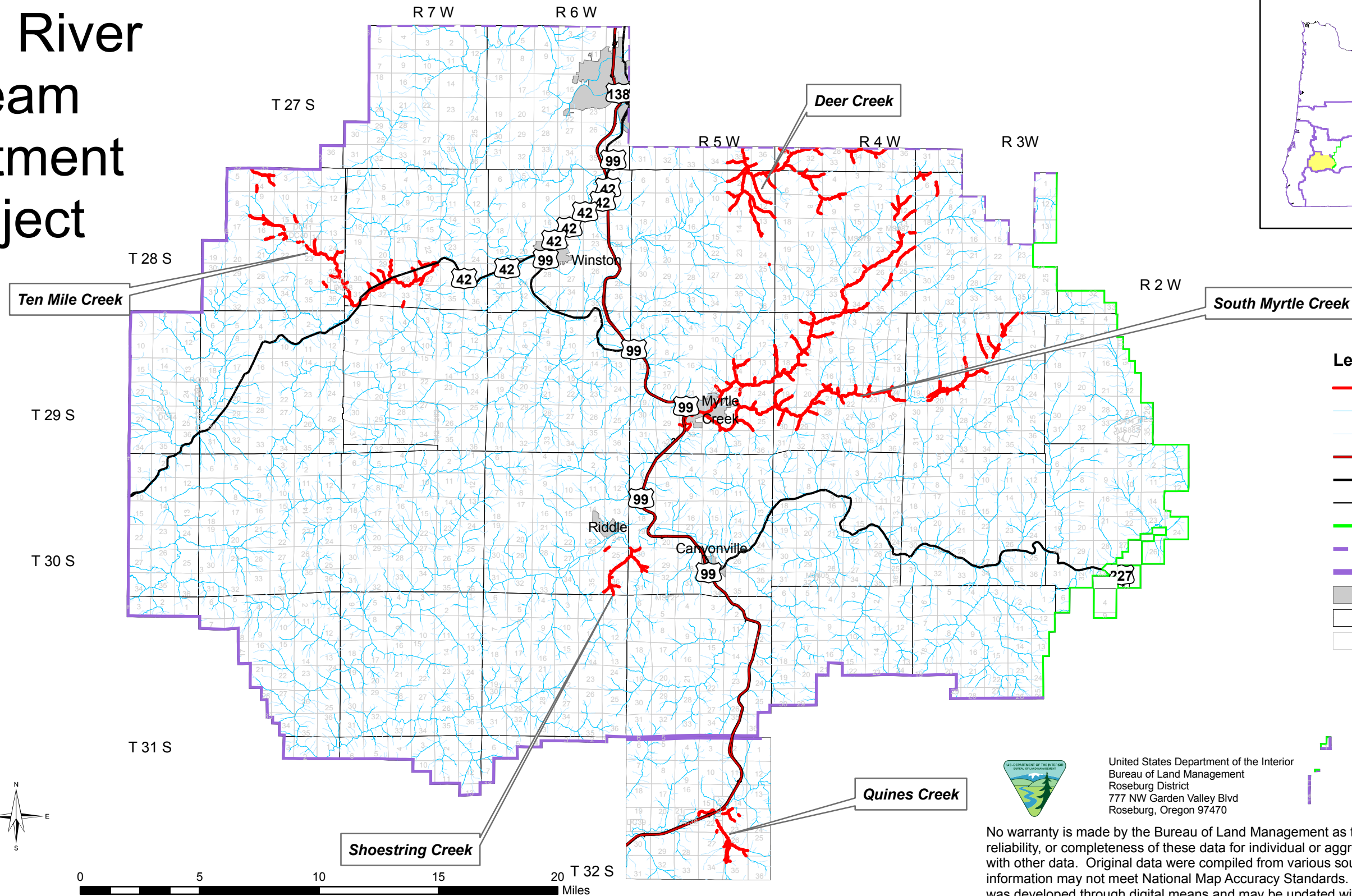
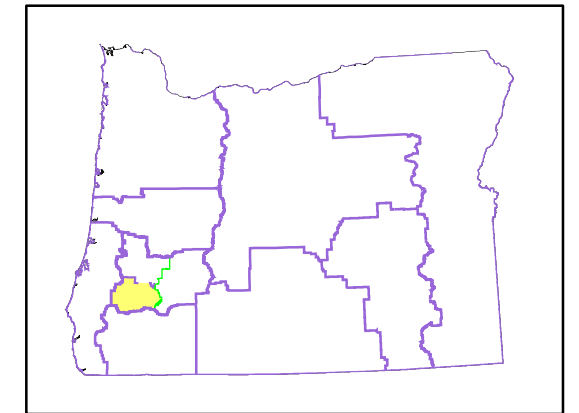



 United States Department of the Interior  
 Bureau of Land Management  
 Roseburg District  
 777 NW Garden Valley Blvd  
 Roseburg, Oregon 97470

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. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.



# South River Stream Revetment Project



United States Department of the Interior  
 Bureau of Land Management  
 Roseburg District  
 777 NW Garden Valley Blvd  
 Roseburg, Oregon 97470

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. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.