

# **Water Quality Restoration Plan**

**Silver Creek Watershed  
HUC 1710031109**

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# Water Quality Restoration Plan

## Southern Oregon Coastal Basin

### Silver Creek Watershed

#### North Fork Silver Creek Analysis Area

Bureau of Land Management (BLM), Medford District Office  
Grants Pass Resource Area

<b>Silver Creek at a Glance</b>	
Hydrologic Unit Code	1710031109
Watershed area/ownership	Total: 51,978 acres BLM: 8,508 acres USFS: 43,330 acres Private: 140 acres
303(d) listed parameters	Temperature
Beneficial Uses	Salmonid rearing, migration and spawning; cold water habitat; water supply; recreation
Known Impacts(human)	Timber harvest, roads, mining
Natural factors	Soils: Serpentine soils – poor growing conditions and low infiltration
Water Quality limited streams	<i>Silver Creek</i> —Mouth to mile 10.9; <i>North Fork Silver Creek</i> - Mouth to mile 7, <i>South Fork Silver Creek</i> -Mouth to mile 7

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## **Statement of Purpose**

Water quality standards are established to protect beneficial uses of the State's waters. Beneficial uses are assigned by basin in the Oregon Administrative Rules for water quality. Designated beneficial uses for the Rogue Basin (OAR 340-41-271) include:

domestic water supply	fishing
industrial water supply	boating
irrigation water	water contact recreation
livestock watering	aesthetic quality
fish and aquatic life	hydro power
wildlife and hunting	

This Water Quality Restoration Plan (WQRP) was prepared to fulfill a requirement of Section 303(d) of the Clean Water Act. It is organized as per part 4 of the Northwest Forest Plan Temperature TMDL Implementation Strategies (USFS, BLM 2004). This plan covers all the Bureau of Land Management (BLM) administered lands within the Silver Creek Watershed (Figure 1), Hydrologic Unit Code 1710031109. This WQRP complies with the Water Quality Management Plan within the Rogue River Basin TMDL (ODEQ, 2008).

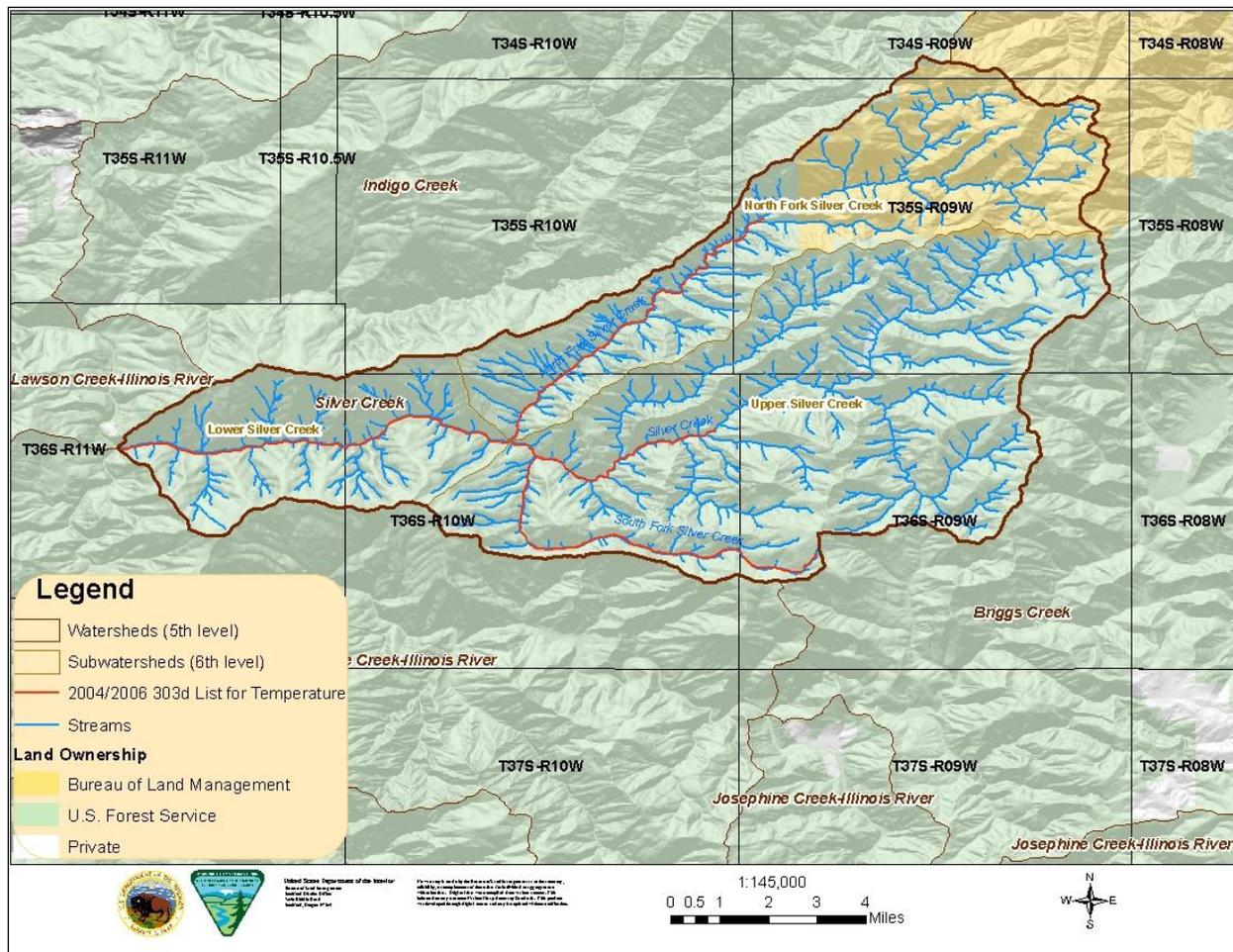
This WQRP addresses all listings on the Department of Environmental Quality's 2010 303(d) list for the plan area. Within the Silver Creek Watershed, North Fork Silver, South Fork Silver and Silver creeks have been placed on the State of Oregon's 303(d) list for failure to meet the water temperature criteria outlined below.

## Watershed Characterization

The Silver Creek Watershed is a 51,978 acre (81.2 mi<sup>2</sup>) watershed containing three 6<sup>th</sup> field sub-watersheds (North Fork Silver Creek, Upper Silver Creek, and Lower Silver Creek). Silver Creek is a Tier 1 Key watershed, which means that it contributes “directly to the conservation of at-risk anadromous salmonids...and resident fish species”. The BLM-managed lands in North Fork Silver Creek are also a Deferred watershed, which means that “Management activities of a limited nature (e.g., riparian, fish or wildlife enhancement, salvage, etc.) could be permitted...if the effects will not increase the cumulative effects” (USDI, 1995).

Primary activities affecting water quality in the Hellgate Canyon-Rogue River watershed are riparian vegetation removal and roads.

Map 1. 2010 303(d) Water Quality Limited Streams Silver Creek Watershed Ownership



### Land Ownership and Use

Land ownership in the Silver Creek Watershed is a mostly a mix of Forest Service and BLM with a small amount of private (Map 1). The BLM, Medford District, administers 16.4 percent of the lands and the Forest Service manages 83.4 percent. The BLM Grants Pass Resource Area

manages lands for the Medford District. The BLM parcels occupy a contiguous mass in the upper elevations of the plan area.

BLM land allocation within the plan area includes Matrix, Late Successional and Riparian Reserves. The plan area includes one special area, the North Fork Silver Research Natural Area. Objectives and management actions/directions for these land allocations and special areas are found in the Medford District Record of Decision and Resource Management Plan (USDI 1995: pp. 24-40 and 56-62).

Major land uses in the area include timber and mining. Logging, beginning in the late 1960's, changed mature seral stands to early to mid seral stands. The more recent 1987 Silver Fire and the 2002 Biscuit Fire affected more than 90% of the watershed.

### Climate

The Silver Creek Watershed has a Mediterranean climate with cool, wet winters and warm dry summers. Annual precipitation in the Silver Creek 5<sup>th</sup> field Watershed is highly variable, ranging between approximately 54 and 120 inches with the amount increasing from east to west. The lower end of the precipitation is in the northeast portion on the BLM administered land. Approximately 50% of the Silver Creek Watershed is within the Transient Snow Zone (TSZ) and nearly the entire portion managed by the BLM is in the TSZ. Except for two small areas in the northeast portion that is above the TSZ, the rest of the watershed is in the rain-dominated precipitation zone.

### Streamflow

Streamflows in the Silver Creek Watershed fluctuate with seasonal variation of precipitation. Moderate to high flows generally occur from mid-November through May. As most of the watershed is below 4,000 feet in elevation snowpack contributes very little to the late spring and summer water flows.

There is a large area of serpentine soil found in the upper reaches of the Upper Silver Creek sub-watershed, almost entirely on the Forest Service administered land. There is one small area in the southeastern portion of the North Fork Silver Creek sub-watershed on BLM-administered land. Serpentine soils result in streamflows that are particularly flashy, rapidly rising and falling with the onset and cessation of rainfall. Soils that are typically deeper and have a greater vegetative cover have streamflows that are not as responsive to precipitation. Within the areas of serpentine soil, seeps and springs surface along bedrock planes. While the seeps and springs do not contribute to baseflows, they provide important sources of water for unique wetlands.

### Channel Condition

There are approximately 299 miles of streams in the Silver Creek Watershed, of which 74 miles are on BLM and are in the headwaters. Nearly the entire watershed is forested and undeveloped, excluding roads, which are concentrated in the northeastern portion of the BLM. The headwaters are generally steep and fast flowing. First and second order streams comprise approximately 80% of the watershed; third and fourth order streams comprise about 15%. Past management in the riparian areas and the Silver Creek fire has reduced the amount of large woody debris in all of these streams.

Moderate peak flow (2 to 5 year flood return interval) results from intense winter rainstorms. Peak flows of record such as the 1964 and 1974 flood events result from rain-on-snow events. Flood events create widespread bank erosion and channel adjustment in the lower gradient floodplain reaches. Riparian vegetation removal has reduced the function of the floodplain to dissipate flood energy. Consequently, channel banks are the primary energy dissipater, resulting in accelerated bank erosion. Bank erosion has led to channel widening, which increases water surface area. The BLM replaced three culverts on the mainstem North Fork Silver Creek to allow for unimpeded discharge up to the 100 year flood.

Gold mining activity in Silver Creek began in the 1860's and has overturned and moved the channel repeatedly over the last one hundred and fifty years. In places the gravels and fines have been removed and the channel has been straightened, resulting in reduced channel complexity and a lack of spawning habitat.

#### Riparian Condition

Primary activities affecting water quality in the Silver Creek Watershed are riparian vegetation removal and mining. In the moderate to high gradient reaches, past Forest Service and BLM forest practices has reduced distribution of mature riparian forest stands. The Silver Creek fire in 1987 and the Biscuit fire in 2002 reduced riparian cover but areas have experienced vigorous regrowth of alder and conifer species (e.g., White fir, Port Orford cedar). Some areas however have had slower riparian forest regeneration. As a result, some of the riparian stands are not tall or wide enough to shade the streams adequately. Water flowing through such areas is exposed to increased solar radiation, leading to elevated temperatures. Stream temperatures recorded in the early 1990's with summer peak temperatures reaching 22°C. The BLM has been monitoring stream temperatures in the North Fork since 1994. In that time, the years 2004-2006 have experienced the highest temperatures.

Many riparian stands, both at and below shade potential, are overstocked due to past activities and fire suppression. These stands exhibit lower growth rates, reduced stand resiliency, and higher fire risk. The Grants Pass Resources Area actively investigates riparian conditions to identify riparian stands that would benefit from thinning or underburning. Benefits include increased growth rates, stand complexity, as well as reduced fire danger.

Within the Silver Creek Watershed there are extremely varying road densities ranging from 2 miles/sq mi to over 6 mi/sq mi. There are high road densities in the upper North Fork Silver Creek, Cedar Swamp Creek, the headwaters of Philips and South Fork Silver Creeks and along the upper Silver Creek.

#### Aquatic Wildlife Species

There are two species of aquatic wildlife found in the North Fork Silver Creek Subwatershed: the Southern Oregon Cutthroat trout, presence up to a mile upstream of the BLM-FS boundary due to natural barriers, and the winter Steelhead trout, presence over a mile upstream of the boundary. Coho are in the North Fork Silver Creek subwatershed although the upstream limit is still miles downstream of the BLM-FS boundary.

## Temperature Standard

The Oregon water quality temperature standard has been re-written. The standard that now applies to the Silver Creek Watershed was approved by EPA on March 2, 2004 and is found in OAR 340-041-0028 (4) (a-c) (ODEQ 2005). Excerpts of the 2004 standard read as follows:

*(4) Biologically Based Numeric Criteria. Unless superseded by the natural conditions criteria described in section (8) of this rule, or by subsequently adopted site-specific criteria approved by EPA, the temperature criteria for State waters supporting salmonid fishes are as follows:*

*(a) The seven-day-average maximum temperature of a stream identified as having salmon and steelhead spawning use on sub-basin maps and tables set out in OAR 340-041-0101 to OAR 340-041-0340: Tables 101B, and 121B, and Figures 130B, 151B, 160B, 170B, 220B, 230B, 271B, 286B, 300B, 310B, 320B, and 340B, may not exceed 13.0 degrees Celsius (55.4 degrees Fahrenheit) at the times indicated on these maps and tables;*

*(b) The seven-day-average maximum temperature of a stream identified as having core cold water habitat use on sub-basin maps set out in OAR 340-041-101 to OAR 340-041-340: Figures 130A, 151A, 160A, 170A, 220A, 230A, 271A, 286A, 300A, 310A, 320A, and 340A, may not exceed 16.0 degrees Celsius (60.8 degrees Fahrenheit);*

*(c) The seven-day-average maximum temperature of a stream identified as having salmon and trout rearing and migration use on sub-basin maps set out at OAR 340-041-0101 to OAR 340-041-0340: Figures 130A, 151A, 160A, 170A, 220A, 230A, 271A, 286A, 300A, 310A, 320A, and 340A, may not exceed 18.0 degrees Celsius (64.4 degrees Fahrenheit).*

### **Element 1: Condition Assessment and Problem Description**

The Oregon Department of Environmental Quality (ODEQ) gathers and assesses water quality data for streams in Oregon and maintains a list of streams (the 303(d) list) that do not meet water quality standards. These streams are considered water quality limited, meaning that beneficial uses of the stream are adversely affected by water quality conditions. The Silver Creek Watershed has three stream segments listed on the 2010 303(d) list. Table 1 displays the stream, water quality parameter not meeting standards, and beneficial use effected.

Table 1. Silver Creek 303(d) listed streams 2010 (ODEQ)

Stream Segment	Miles of Stream	Miles on BLM	Parameter	Season	Standard
North Fork Silver Cr, Mouth to mile 7	7	0	Temperature	Summer	• 7-day avg max. ≤ 18° C
Silver Cr, Mouth to mile 10.9	10.9	0	Temperature	Year round	• 7-day avg max. ≤ 18° C

Stream Segment	Miles of Stream	Miles on BLM	Parameter	Season	Standard
South Fork Silver Cr, Mouth to mile 7	7	0	Temperature	Summer	• 7-day avg max. ≤ 18° C

In 2008, the DEQ approved the Rogue River Basin TMDL (ODEQ, 2008). The following excerpt is taken from Chapter 2:

### 2.7.2 Effective Shade Targets

The Rogue River Basin Temperature TMDL incorporates other measures in addition to “*daily loads*” to fulfill requirements of the Clean Water Act §303(d). Although a loading capacity for heat energy is derived (e.g. kilocalories), it is of limited value in guiding management activities needed to solve identified water quality problems. In addition to heat energy loads, this TMDL allocates “*other appropriate measures*” (or surrogate measures) as provided under EPA regulations (40 CFR 130.2(i)).

Effective shade is the surrogate measure that translates easily into solar heat load. It is simple to measure effective shade at the stream surface using a relatively inexpensive instrument called a Solar Pathfinder™.

The term ‘shade’ has been used in several contexts, including its components such as shade angle or shade density. **For purposes of this TMDL, effective shade is defined as the percent reduction of potential daily solar radiation load delivered to the water surface.** The role of effective shade in this TMDL is to prevent or reduce heating by solar radiation and serve as a linear translator to the loading capacities.

Unless otherwise stated within this chapter, the applicable nonpoint source load allocations for Rogue River Basin streams are based upon potential effective shade values presented in this section and the human use allowance (0.04°C cumulative increase at the point of maximum impact).

Most streams simulated have no assimilative capacity, which translates into a zero heat load allocation for nonpoint sources. When a stream has assimilative capacity, nonpoint and point sources may receive allocations greater than background.

Current shade and system potential shade targets (percent-effective shade) were calculated for the North Fork Silver Creek and its perennial tributaries on BLM-administered lands. The data analysis method used for the shade assessment was the Shadow model (USDA 1993). The Shadow model determines the system potential targets and number of years needed to obtain shade recovery using forest growth curves for various tree species within southwestern Oregon. Target shade values represent the maximum potential stream shade based on the site potential tree height.

The current average-weighted-shade on BLM-administered lands along the North Fork Silver Creek and its perennial tributaries is 91 percent and the target average-weighted-shade is 94 percent (ODEQ 2002). Current shade on BLM-administered lands in the plan area is greater than 80 percent and considered recovered.

## **Element 2: Goals and Objectives**

For the BLM-administered lands within the Silver Creek Watershed, the primary goal within riparian reserves is the maintenance and long-term restoration of riparian ecosystems as identified in the Northwest Forest Plan Aquatic Conservation Strategy (ACS) objectives. Specific project goals include:

1. Manage riparian areas within one to two tree-heights of all streams to benefit riparian health and aquatic habitat. Management includes preserving current conditions (protective) and silvicultural treatments to increase stand vigor and resiliency (proactive).
2. Manage BLM-administered riparian lands to each their shade potential.
3. Maintain/improve riparian reserve health on BLM-managed lands to maximize large wood recruitment into the channel and riparian environments. The instream wood will benefit downstream channel stability and improve aquatic habitat conditions. Maintain late-seral conditions where they currently exist. In early, mid-seral, and mature stands that lack structural complexity, treatments would accelerate stand development into late-successional/mature structure (i.e. large trees, snags, down wood, species diversity and hardwood retention).
4. Return stand density and fuel loads to range of natural variability to reduce potential for stand replacement fire events.

To accomplish this, the Northwest Forest Plan (NWFP) (USDA, USDI 1994) and the Medford District Resource Management Plan (RMP) (USDI 1995) provides management guidance to maintain or improve riparian health. The most relevant direction in the NWFP is included in the ACS objectives; the ACS was developed to restore and maintain the ecological health of watersheds and to protect salmon and steelhead habitat on lands within the range of Pacific Ocean anadromy. The ACS contains specific water quality objectives that protect the beneficial uses identified in the state's water quality standards. Riparian reserves, key watersheds, watershed analysis, and watershed restoration components of the ACS are designed to operate together to maintain and restore the productivity and resiliency of riparian and aquatic ecosystems. In addition to the ACS, *the 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, USDI 1994) describe land allocations and specific standards and guidelines (S&Gs) for managing these land allocations. These S&Gs effectively serve as Best Management Practices (BMPs) to prevent or reduce water pollution further contributing to goals of Clean Water Act compliance.

## **Element 3: Proposed Management Measures**

Management and protection of riparian zones will occur at two levels: programmatic and project. The Medford RMP contain BMPs that are important for preventing and controlling to the "maximum extent practicable" non-point source pollution and achieving Oregon water quality standards.

**Programmatic:** The Northwest Forest Plan standards and guidelines will be used to meet the goals of the BLM's Silver Creek Water Quality Restoration Plan including:

- Stream Temperature – Shade Component  
Aquatic Conservation Strategy: B9 – B11, C30  
Riparian Vegetation: B31  
Riparian Reserves: B12 to B17  
Watershed Restoration: B30
- Stream Temperature – Channel Form  
Aquatic Conservation Strategy: B9 – B11, C30  
Riparian Vegetation: B31  
Riparian Reserves: B12 to B17,  
Watershed Restoration: B30  
Roads: B19, B31 to B33

The current riparian reserve width for the fish-bearing streams in the Silver Creek Watershed is 360 feet on each side of the stream. For intermittent and non-fish bearing streams the riparian reserves is 180 feet on each side.

**Project:** The second level of management and protection occurs at the project planning level. The project planning area is usually at the fifth field watershed scale. A team of specialists including fish biologists, hydrologists, botanists and silviculturalists examine watershed analysis conclusions and conduct field surveys to determine the most appropriate actions necessary to improve and/or maintain riparian health and protection. These actions typically include developing silvicultural prescriptions to improve stand vigor, decommissioning roads, planting, and designing site specific BMPs.

The Northwest Forest Plan (NWFP) Temperature TMDL Implementation Strategies (USDA, USDI 2005) provides specific guidance for silvicultural practices within riparian reserves. Shade curves were computed based on stream width, orientation, and topography factors and show the required minimum no-cut buffers necessary to maintain and restore site-potential riparian shade. The shade curves and field surveys will ensure maintenance of riparian stands providing primary shade (those stands that provide shade between the hours of 1000 and 1400).

Objectives that will guide proposed treatments include:

- Retain vegetation providing primary shade;
- Silvicultural treatments in the riparian reserve can be described as thinning from below treatments, with the intention of leaving the larger and healthier trees in the overstory. Retain vegetation responsible for providing shade to the active channel. The stocking level would provide adequate future recruitment of Large Woody Debris (LWD) to exceed the desired ODFW (1997) habitat benchmarks.

#### **Element 4: Timeline for Implementation**

The NWFP was implemented with the signing of the Record of Decision (ROD), April 13, 1994. Inherent in the implementation is the passive restoration of riparian areas that ensued because of

the riparian reserve buffers/allocation. Implementation of active restoration activities beyond the inherent passive riparian restoration occurs with watershed analyses and site-specific projects.

Implementing specific activities designed to improve riparian conditions requires analysis under the National Environmental Policy Act (NEPA) and will occur following the landscape level planning.

Stream temperature recovery is largely dependent on vegetation recovery. Actions implemented now will not cause a reduction in the available shade, cause an increase in stream temperatures or reduce aquatic habitat.

Streamside shade is expected to increase with passive restoration (riparian buffers) leading to improvement of past riparian harvest units combined with active riparian management to improve health, resiliency and growth rates. This will be naturally lower in areas that have serpentine soils.

### **Element 5: Identification of Responsible Participants**

The BLM signed a Memoranda of Agreement (MOA) with ODEQ (USDI, USDA, ODEQ 2003) that provides a framework for effective cooperation on programs and projects to pursue the shared goal of attainment of state water quality standards. To that end, the MOA includes provisions for implementation that satisfy State and Federal point and non-point source pollution control requirements, develops a common understanding of water quality protection and restoration, and constitutes the basis for continuing formal designation of the BLM and USFS as Designated Management Agencies (DMAs).

### **Element 6: Reasonable Assurance of Implementation**

The Oregon/Washington State Director approved the ROD and associated Medford District Resource Management Plan on April 14, 1995. The ROD approves the BLM's decisions for managing 870,000 acres in portions of Josephine, Jackson, Douglas, Curry, and Coos counties.

Implementation and monitoring of the ACS and use of the Temperature Implementation Strategies' logic and tools provide reasonable assurance that watersheds under the direction of the NWFP will move towards attainment of water quality standards and beneficial use support. Implementation and adoption of the MOAs also provide assurances that water quality protection and restoration on lands administered by the FS and BLM will progress. Additionally, adherence to BMP's developed through the NEPA process and project design guidelines instituted for Threatened & Endangered species protection further provides reasonable assurance of progress toward water quality improvement. However, BLM acknowledges that periodic review of the Temperature Implementation Strategies and TMDLs is necessary to provide the assurance that goals and objectives are being met.

## **Element 7: Monitoring and Evaluation**

Monitoring will be used to ensure that decisions and priorities conveyed by BLM plans are being implemented, to document progress toward attainment of state water quality standards, to identify whether resource management objectives are being attained, and to document effectiveness of management actions. If monitoring indicates that sufficient progress toward the goals contained in this plan are not being made, the goals and activities will be revisited and changes made as necessary to the action plan to assure attainment of water quality standards.

The primary objective of this WQRP is to increase stream shade, reduce sedimentation, and improve aquatic habitat. Due to the mixed ownership in the Silver Creek Watershed, attainment of the water temperature standard requires multi-ownership participation and commitment to improve riparian function.

Researchers at the Forest Service Pacific Northwest Experiment station are assessing the effectiveness of the management actions directed by the NWFP to improve water quality. This effort is monitoring the passive restoration measures implemented in this WQRP.

Grants Pass Resource Area (GPRA) will continue monitoring water temperatures in North Fork Silver Creek Subwatershed, as funding is available.

## **Element 8. Public Involvement**

Many of the elements contained in this WQRP derived from existing land use planning documents such as the Medford RMP and the NWFP. These documents received broad based public comment during scoping prior to development of alternatives and during public appeal of both documents. Both documents also received numerous responses to the Draft Environmental Impact Statement that were published for review, prior to development of the Final Environmental Impact Statements and Record of Decisions.

The Oregon Department of Environmental Quality has lead responsibility for creating TMDLs and WQMPs to address water quality impaired streams in Oregon. This Water Quality Restoration Plan will be provided to DEQ for incorporation into an overall WQMP for the Rogue River Basin. DEQ has a comprehensive public involvement strategy, which includes informational sessions, mailings, and public hearings.

Additionally, the NEPA process requires public involvement prior to land management actions, providing another opportunity for public involvement. During this process, BLM sends scoping letters and schedules meetings with the public. The public comment period ensures that public participation is incorporated into the decision making process.

## **Element 9. Maintenance of Effort over Time**

The conditions leading to water quality limitations and 303(d) listing have accumulated over many decades. Management measures to address these factors will be carried out over an

extended period. Furthermore, once restorative actions and protection practices achieve desired results, continued vigilance will be required to maintain water quality standards.

### *Northwest Forest Plan and Federal Land Management Plans*

The NWFP and the Medford Resource Management Plan are ongoing federal land management plans. The NWFP became effective in 1994. The RMP was implemented in 1995 and covers a period of approximately 10 years or until the next RMP revision. Federal law requires RMP and Forest Plan implementation. The northwest portion of the Silver Creek Watershed includes a portion of the Galice Late-Successional Reserve (LSR). The management objective is to maintain functional, interacting late-successional ecosystems.

### *Water Quality Restoration Plan*

The Medford District BLM, working in partnership with the DEQ, is responsible for ensuring the WQRP is implemented, reviewed, and amended as needed. This includes the following:

1. Review of the responsible agency's land treatments, verifying consistency with plans.
2. Promotion of on-going communication, financial support, and partnerships for implementing priority projects.
3. Continue efforts to explore revised or additional management measures based on results of monitoring activities and other sources of information.
4. As additional information becomes available and techniques are improved, continue to improve and revise cost/benefit estimates.

## **Element 10. Costs and Funding**

Active restoration can be costly, depending on the level of restoration. The following are estimated average costs of typical restoration activities (implementation only, does not include planning costs):

Riparian thinning	\$4,000 per acre
Instream LWD Placement	\$5,000 -30,000 per mile
Culvert Replacement	\$50,000 -80,000 per structure

There are several sources of funding for restoration activities. This includes congressionally appropriated budget line items for restoration, and grants. Funding for Instream LWD Placement is approved through Fiscal Year 2011 under Title 2, Secure Rural Schools and Community Self Determination Act.

### *Budget Line Items for Restoration*

The Grants Pass Resource Area will make every attempt to secure funding for other restoration activities but it must be recognized that the federal agencies have political and economic realities. Federal activities are subject to public and legal review prior to implementation; legal clearance is necessary prior to implementation. Historically, budget line items for restoration are

a fraction of the total requirement. Grants may prove to be an increasingly important mechanism for funding restoration but funds are subject to availability, eligibility and approval of external parties.

## **Literature Cited**

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## Appendix A

### DEQ 2010 Listed streams in the Silver Creek Watershed

Name LLID River Mile	Parameter	Season	Criteria	Beneficial uses	Status	[Data Source] Supporting Data
North Fork Silver Creek 1238846/424567 0 to 7	Temperature	Summer	Rearing: 17.8 C	Anadromous fish passage Salmonid fish rearing	303(d) , TMDL approved	Previous Data: USFS: 7 day moving average of daily maximums of 69.7 with 14 days exceeding temperature standard (64) in 1993.
Silver Creek 1240017/424539 0 to 19.4	Temperature	Year Around (non- spawning)	Salmon and trout rearing and migration: 18.0°C 7-day-average maximum	Salmon and trout rearing and migration	303(d), TMDL approved	Previous Data: 2004 Data: [DEQ] River Mile 0.1: From 7/13 to 8/26/2000, 41 days with 7-day average maximum > 18°C. [DEQ] River Mile 0: From 7/13 to 8/26/2000, 45 days with 7-day- average maximum > 18°C.
South Fork Silver Creek 1238762/424522	Temperature	Summer	Rearing: 17.8 C	Anadromous fish passage Salmonid fish rearing	303(d) , TMDL approved	Previous Data: 1990 data shows exceedance of temperature criteria; 1991 temperature was at criteria