

4. Fifteenmile Subbasin--Inventory of Existing Activities

DRAFT

May 25 2004

Compiled by Wasco County Soil and Water Conservation District
in cooperation with
Fifteenmile Coordinating Group

4. FIFTEENMILE SUBBASIN--INVENTORY OF EXISTING ACTIVITIES	1
INVENTORY OVERVIEW	1
4.1 EXISTING LEGAL PROTECTION--LAWS, POLICIES, REGULATIONS AND RULES.....	3
4.2 EXISTING MANAGEMENT PLANS AND PROGRAMS.....	11
4.2.1 <i>Watershed Assessments and Watershed Council Action Plans</i>	11
4.2.2 <i>Tribal Plans</i>	13
4.2.3 <i>Federal Plans</i>	13
4.2.4 <i>State Plans</i>	16
4.2.5 <i>Other Plans</i>	17
4.3 EXISTING WATERSHED PROJECTS	19
4.3.1 <i>Riparian Buffers</i>	19
4.3.2 <i>Instream Habitat Enhancement</i>	24
4.3.3 <i>Fish Passage</i>	26
4.3.4 <i>Agricultural Lands</i>	28
4.3.5 <i>Uplands—Forestry</i>	31
4.3.6 <i>Urban Lands</i>	33
4.3.7 <i>Research, Monitoring, and Evaluation Activities</i>	34
4.4 GAP ASSESSMENT OF EXISTING PROTECTIONS, PLANS, PROGRAMS AND PROJECTS	35
4.4.1 <i>Gap Analysis of Limiting Factors</i>	35
4.4.2 <i>Geographic Coverage of Riparian and Instream Conservation</i>	37
4.4.3 <i>Geographic Coverage of Upland Conservation</i>	38
4.4.4 <i>Geographic Coverage of Research and Monitoring Efforts</i>	39

Inventory Overview

The Inventory of Existing Activities is split into four major sections:

- 1) Existing Legal Protections covers laws, policies, regulations and rules that affect natural resource management in the Fifteenmile Subbasin. Generally, this includes land use planning, federal state and local regulations, and other documents that are not specifically written for the restoration of fish and wildlife in Fifteenmile Subbasin, but nevertheless support or affect restoration or protection efforts. The documents in this section generally carry the force of law.

DRAFT—Fifteenmile Subbasin, Inventory of Existing Activities

- 2) Existing Management Plans and Programs covers documents specifically written for the restoration or protection of fish and wildlife, either in Fifteenmile Subbasin, or in a larger or smaller overlapping area. These plans may or may not carry the force of law.
- 3) Existing Watershed Projects covers ongoing activities with the goal of recovering fish and wildlife, water quality, or habitat in Fifteenmile Subbasin.
- 4) The gap assessment ties the inventory specifically to the Fifteenmile Subbasin Assessment, and analyzes the extent to which the existing protections, plans, programs and projects adequately address the limiting factors for fish and wildlife noted in the assessment.

4.1 Existing Legal Protection--Laws, Policies, Regulations and Rules

Table 4.1. Summary of Primary Existing Legal Protections

Federal	Endangered Species Act
	Clean Water Act
	Fish and Wildlife Coordination Act
	Magnussen-Stevens Act
	Migratory Bird Treaty Act
	Columbia River Gorge National Scenic Area Act (See Management Plans and Programs)
Oregon State	Oregon Forest Practices Act—Department of Forestry
	Removal/Fill of Wetlands and Streams—Department of State Lands
	Water Rights—Water Resources Department
	Oregon State Water Quality Standards-- Department of Environmental Quality
	National Pollutant Discharge Elimination System (NPDES)—Department of Environmental Quality
	Water Pollution Control Facilities (WPCF) Permits—Department of Environmental Quality
	Lower Deschutes Agricultural Water Quality Management Area Rules—Department of Agriculture
	Confined Animal Feeding Operations (CAFO)—Department of Agriculture
Wasco County	Wasco County Planning Department Comprehensive Land Use and Development Ordinances
City	City of Mosier—Open Space Zoning and Flood Damage Prevention Ordinances. All wetlands zoned Open Space.
	City of Dufur—Municipal Watershed and Municipal Sewer Management City of Dufur—Comprehensive Plan Update July 2003 City of Dufur—Zoning Ordinance #288, Section 4.5—Riparian Habitat Protection
	City of The Dalles— Municipal Watershed Management Plan Habitat Management Plan including Memorandum of Agreement with US Forest Service Municipal Sewer Management

Many federal, state, tribal, county and city agencies have programs or policies that include guidelines for protection of streams, riparian areas, fish and other aquatic life.

Endangered Species Act

The 1973 Endangered Species Act (ESA) provides broad protection for species of fish, wildlife and plants that are listed as threatened or endangered in the U.S. or elsewhere. Provisions are made for listing species, as well as for recovery plans and the designation of critical habitat for listed species. The Act outlines procedures for federal agencies to follow when taking actions that may jeopardize listed species, and contains exceptions and exemptions. The Endangered Species Act also is the enabling legislation for the Convention on International Trade in Endangered Species of Wild Fauna and Flora, commonly known as CITES. Criminal and civil penalties are provided for violations of the Act and the Convention. [\[need to add current status \(recovery plans, status reviews, etc.\) of specific listed species: bald eagle, spotted owl, steelhead, etc...will need to coordinate with NOAA Fish and USFWS\]](#)

National Oceanic Atmospheric Administration Fisheries: The National Oceanic Atmospheric Administration (NOAA) Fisheries administers the federal Endangered Species Act as it pertains to anadromous fish. NOAA Fisheries reviews and comments on fill/removal permit applications on streams with anadromous salmonids and on any hydroelectric project proceedings where anadromous fish are involved.¹

U.S. Fish and Wildlife Service: The U.S. Fish and Wildlife Service is the principal federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. The Service manages the National Wildlife Refuge System, National Fish Hatchery System, fishery resource offices, and ecological services field stations. The agency enforces Federal wildlife laws, administers the Endangered Species Act, manages migratory bird populations, restores nationally significant fisheries, conserves and restores wildlife habitat such as wetlands, and helps foreign governments with their conservation efforts. It also oversees the Federal Aid program that distributes hundreds of millions of dollars in excise taxes on fishing and hunting equipment to state fish and wildlife agencies. Their primary emphasis in the Fifteenmile Creek subbasin has been to work with federal agencies on land use activities.²

Fish and Wildlife Coordination Act

The Act provides that whenever the waters or channel of a body of water are modified by a department or agency of the United States the department or agency first shall consult with the U.S. Fish and Wildlife Service and with the head of the agency exercising administration over the wildlife resources of the state where construction will occur, with a view to the conservation of wildlife resources. The Act provides that land, water and interests may be acquired by federal construction agencies for wildlife conservation and development. In addition, real property under jurisdiction or control of a federal agency

¹ Lynn Hatcher, personal communication, November 2003

² Jerry Cordova, personal communication, December 2003.

and no longer required by that agency can be utilized for wildlife conservation by the state agency exercising administration over wildlife resources upon that property.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Under the Act, taking, killing or possessing migratory birds is unlawful.

National Pollution Discharge Elimination System (NPDES) Confined Animal Feeding Operations Oregon Department of Agriculture

Oregon Department of Agriculture has an agreement with EPA to administer the Confined Animal Feeding Operation (CAFO) Program in Oregon. The CAFO Program is designed to keep certain livestock operations from polluting water. The CAFO program resulted from the 1972 Federal Clean Water Act, in which certain types of livestock operations were classified as "point sources" and required permits. CAFOs must effectively deal with the manure and wastewater animals produce. CAFOs must be managed so that the waters of the state, including streams, lakes, ponds, and groundwater sources, are not polluted. Simply put, ODA's CAFO program is designed to protect water quality through use of best management practices on agricultural and rural lands. The program registers CAFOs under a National Pollutant Discharge Elimination System (NPDES) permit, inspects the facilities, and works with operators to promote water quality. Voluntary compliance, supported by educational outreach, is the primary means to achieve the water quality goals of the CAFO program.

National Pollution Discharge Elimination System (NPDES) Oregon Department of Environmental Quality

The Department of Environmental Quality administers two different types of wastewater permits. These are: National Pollution Discharge Elimination System (NPDES) permits for wastewater discharge to surface waters; NPDES permits cover the discharge of treated industrial and domestic wastewater as well as stormwater discharges. The cities of Dufur, Mosier and The Dalles all have NPDES permits with DEQ to discharge their wastewater treatment plant effluent. The NPDES permit is also a Federal permit and is required under the Clean Water Act.

Clean Water Act Oregon Department of Environmental Quality

The Oregon Department of Environmental Quality (ODEQ) is required by the Federal Clean Water Act³ to establish water quality standards to protect the beneficial uses of the State's waters. Based on the water quality standards, ODEQ is then required to: identify stream segments where the standards are not being met; develop a list of these water-quality limited water bodies (called the 303(d) list from Section 303(d) of the Clean Water Act); and develop a Total Maximum Daily Load (TMDL) allocation for each

³ Federal Clean Water Act 1972

water body and each pollutant included on the 303(d) lists. The TMDL describes the maximum amount of pollutants (from all sources) that may enter a specific water body without violating water quality standards. The most current 303(d) list for Oregon is dated 2002 and includes listings for temperature and sedimentation in the Fifteenmile Subbasin area. TMDLs are slated for completion in 2004.⁴

The Department of Environmental Quality administers the Clean Water Act 319 Non-Point Source (319) Program in the State of Oregon. The 319 Program provides up to 60% cost-share for projects targeting non-point source water pollution issues. 319 funds are for implementation activities, including monitoring to support TMDL development, implementation and measuring progress toward achieving TMDL allocations.⁵

Water Pollution Control Facilities (WPCF) Oregon Department of Environmental Quality

DEQ also administers the State's Water Pollution Control Facilities (WPCF) permits for waste disposal without a direct discharge to surface waters. Examples of systems which require WPCF permits include land irrigation systems, industrial seepage pits, and on-site sewage disposal system designed for wastewater flows greater than 2,500 gallons per day.

Fishing and Hunting Regulations Oregon Department of Fish and Wildlife

Oregon Department of Fish and Wildlife (ODFW) is responsible for protecting and enhancing Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations. Management of the fish and wildlife and their habitats in the Fifteenmile Creek subbasin is guided by ODFW policies and federal and state legislation. ODFW sets fishing and hunting regulations. ODFW policies and plans that pertain to the subbasin include the *Natural Production Policy*⁶ *The Native Fish Conservation Policy (635-007-0502 to 0505)*, *Oregon Guidelines for Timing In-Water Work to Protect Fish and Wildlife Resources* (ODFW 1986), *Fifteenmile Basin Fish Habitat Improvement Implementation Plan* (USFS & ODFW 1987), and *Fifteenmile Creek Subbasin Salmon and Steelhead Production Plan* (ODFW & CTWS 1990). These plans present systematic approaches to conserving aquatic resources and establishing management priorities within the subbasin.⁷



⁴ Bonnie Lamb, ODEQ, personal communication, November 2003.

⁵ Request for Proposals, Oregon 319 Grant Program 2002, page 4.

⁶ Oregon Administrative Rules 635-07-521 to 524

⁷ [Rod French, personal communication, November 2003.](#)

Oregon Forest Practices Act
Oregon Department of Forestry

The Oregon Department of Forestry regulates forest management activities on non-federal lands. The Oregon Forest Practices Act⁸ regulates forest management activities including harvesting, road construction, slash burning, chemical application and reforestation. The rules contain a large body of water protection rules⁹ based on current science that reflect the best management practices required by operators when conducting cultural practices in the forest. These guidelines include mandatory stream buffers and riparian management areas, as well as protection to small tributaries important for maintaining cool water temperature downstream.¹⁰

Removal-Fill Law (ORS 196.795-990)
Oregon Department of State Lands



Oregon Department of State Lands is responsible for regulating the removal and fill of materials in natural waterways. Oregon's Removal-Fill Law (ORS 196.795-990) requires people who plan to remove or fill material in waters of the state to obtain a permit from the Department of State Lands. The purpose of the law, enacted in 1967, is to protect public navigation, fishery and recreational uses of the waters. "**Waters of the state**" are defined as "natural waterways including all tidal and nontidal bays, intermittent streams, constantly flowing streams, lakes, wetlands and other bodies of water in this state, navigable and nonnavigable, including that portion of the Pacific Ocean that is in the boundaries of this state." The law applies to all landowners, whether private individuals or public agencies.¹²

Water Rights
Oregon Water Resources Department

The Oregon Water Resources Department regulates water use in the Fifteenmile Creek subbasin. Guidelines for appropriation of water¹⁶ determine the maximum amount of water that can legally be diverted from the streams in the subbasin. Oregon Water Resources Department also acts as trustee for instream water rights issued to the state of Oregon and held in trust for the people of the state.¹⁷

⁸ Oregon Revised Statutes 527 and Administrative Rules Division 629-600 through 629-680

⁹ Oregon Administrative Rules 629-635 through 629-660

¹⁰ Larry Hoffman, ODF, personal communication, November 2003.

¹¹ Sam Wilkins, personal communication, November 2003.

¹² <http://statelands.dsl.state.or.us/r-fintro.htm>

¹³ Ron Graves, personal communication, November 2003.

¹⁴ Jay Nicholas, personal communication, November 2003.

¹⁵ Craig Gunderson, personal communication, November 2003.

¹⁶ Oregon Revised Statutes 537

¹⁷ Larry Toll, personal communication, November 2003.

Fifteenmile Watershed is broken into eight water availability basins (WABs). Each of these is a subunit within which the Water Resources Department determines availability of water for water rights allocation. Until 1991, the Water Resources Department determined water rights availability at the 50% exceedance level. In other words, they would grant water rights as long as there was available water in an average year. Since 1991, they have granted water rights only up to the 80% exceedance level. In other words, there must be available water in four out of five years. At the 80% exceedance level, Fifteenmile Watershed is currently overallocated in January, June, July, August, and September. Upstream of the confluence of Eightmile Creek and Fifteenmile Creek, all water availability basins are overallocated in all except two or three months during the winter and early spring.

Wasco County Comprehensive Plan and Land Use and Development Ordinance
Wasco County Planning Department

The Wasco County Planning Department regulates land use on the county level. The *Wasco County Comprehensive Plan*¹⁸ and *Land Use and Development Ordinance* address protection of water bodies, ground water, natural areas, agricultural land and fish and wildlife resources. The plan has helped minimize impacts to riparian corridors and big game habitat, particularly deer and elk winter range.¹⁹

The Land Conservation and Development Commission regulates land use on the state level. County land-use plans must comply with statewide land-use goals. Land-use plans have been helpful in protecting fish habitat, particularly by curtailing excessive development along streams.²⁰

City of Dufur

The City of Dufur administers approximately 730 acres of land that are located in the Fifteenmile Creek subbasin. These lands are located above the city's municipal water sources and are managed to maintain the watershed. The city's main administrative action relating to conservation has been to grant easements to ODFW and USFS for conservation projects.

The City's Comprehensive Plan Update (Ordinance #326, adopted July 2003) includes descriptions of the fish and wildlife habitat resources present within the urban boundary. The plan notes that the riparian area of Fifteenmile Creek makes up somewhat less than

¹⁸ Wasco County Comprehensive Plan 1983

¹⁹ Todd Cornett, personal communication, November 2003.

²⁰ Todd Cornett, personal communication, November 2003.

²¹ Marty Matherly personal communication, November 2003.

²² Ron Graves, personal communication, December 2003.

²³ Marty Matherly, Public Works, personal communication, November 2003

10% of the urban area and calls out riparian vegetation as important for both fish and wildlife habitat (pp 7-9). The Plan states that it is the policy of the City of Dufur to maintain open space and riparian vegetation along the Fifteenmile floodplain (p30).

The City of Dufur Zoning Codes (ordinance 288 as updated through June 1988) provide for riparian protection within 20 feet of the high water line (“during normal seasonal runoff”) of Fifteenmile Creek. Roadways and structures are restricted within that band, with some exceptions. “All trees and at least 50 percent of the understory vegetation shall be retained...” with some exceptions (section 4.5, p11).

The City of Dufur has a municipal sewer system, which is managed to comply with all state and federal rules.²⁴

City of Mosier

The City of Mosier owns approximately 20 acres that is zoned Open Space, including nearly a mile of Mosier Creek and all wetlands. No uses are permitted outright in this area. Conditional uses include parks, recreation areas, community centers and public utilities.

Mosier also has a flood damage prevention ordinance that is designed to minimize the chances that human life or property will be endangered or damaged in the course of a flood. The ordinance applies to all lands within the City of Mosier within designated special flood hazard zones. It specifies construction methods, materials, utilities, and locations and requires developers to go through a special review process.

City of The Dalles

The City of The Dalles Planning Department does not have any specific zones for floodplains or environmental protection, but complies with all State and Federal guidelines for protection of water quality and fish habitat protection.²⁵

Oregon State Police

The Oregon State Police regularly patrol the Fifteenmile Creek subbasin to enforce laws and regulations designed to protect fish and wildlife and their habitat.²⁶

Wasco County Public Works

The Public Works Department has “fine-tuned” their general road maintenance operations to mirror the best management practices that ODOT prepared for NOAA Fisheries. The periods of the year in which maintenance cleaning of culverts is undertaken was changed. They have also acquired and are using specialized machinery for these cleaning operations to help meet the standards. All new culvert installations that may impact any species of fish will be designed for fish passage through these

²⁴ Gay Melvin, City of Dufur, personal communication, December 2003.

²⁵ Chris Bernhardt, personal communication, December 2003.

²⁶ Craig Gunderson, personal communication, November 2003.

structures. All State and Federal (Corps) permits that apply to any new projects adjoining or contributing to fish bearing streams will be properly prepared and processed.²⁷

Oregon Department of Transportation

The Oregon Department of Transportation (ODOT) maintains state highways that cross streams in the Fifteenmile Creek subbasin. Bridges and culverts, as they are upgraded or replaced, must meet guidelines designed to protect fish and fish habitat. In particular, guidelines are specified in the 4d Rule for threatened Mid-Columbia steelhead, written by NOAA Fisheries.²⁸

Natural Resources Conservation Service

The USDA Natural Resource Conservation Service (NRCS) provides technical support associated with the conservation of all natural resources to the SWCD and private landowners. The NRCS provides technical assistance in all disciplines including agronomy, rangeland, forestry, soils, geology, biology, engineering and economics. Several federal cost-share programs are administered by NRCS through the local guidance of the SWCD. These cost share monies address priority local resource concerns including soil erosion, water quality/quantity and sustaining agricultural production on privately owned land. The Environmental Quality Incentives Program (EQIP) is the most commonly used USDA cost-share program in the Fifteenmile Subbasin.²⁹ Another highly active program is the Conservation Reserve Enhancement Program (CREP) and the Continuous Conservation Reserve Program (CCRP).

U.S. Bureau of Land Management

The U.S. Bureau of Land Management (BLM) administers approximately 2770 acres of forested land in the Fifteenmile Creek subbasin. These forests are managed under guidelines established in the *Northwest Forest Management Plan*³⁰ as described for those lands managed by the USFS.³¹

Confederated Tribes of the Warm Springs Reservation of Oregon

The Confederated Tribes of the Warm Springs Reservation of Oregon reviews proposed management on public lands within the subbasin and provides comments relative to protection of natural resources. Tribal range managers utilize livestock grazing leases on

²⁷ Marty Matherly personal communication, November 2003.

²⁸ Sam Wilkins, personal communication, November 2003.

²⁹ Dusty Eddy, personal communication, November 2003

³⁰ *Northwest Forest Management Plan* 1994

³¹ John Hanf, personal communication, November 2003

tribal allotments within the subbasin. The Confederated Tribes are co-managers of state fisheries resources with the Oregon Department of Fish and Wildlife.³²

The Fifteenmile Watershed is entirely located on lands ceded to the United States Government by the Confederated Tribes of the Warm Springs Reservation in the Treaty of 1855. The Treaty mandates sufficient water quality and quantity to maintain the fishery resource. Additionally, the Treaty reserved the right to fish “at all... usual and accustomed stations, in common with citizens of the United States, and of erecting suitable houses for curing the same; also the privilege of hunting, gathering roots and berries, and pasturing their stock on unclaimed lands, in common with citizens, is secured to them.”³³ Currently, the tribal fisheries in Fifteenmile are closed to allow stocks to recover.

4.2 Existing Management Plans and Programs

4.2.1 Watershed Assessments and Watershed Council Action Plans

Fifteenmile Watershed Council

Fifteenmile Watershed Council provides a forum for discussion of natural resource issues within the Fifteenmile Watershed. Fifteenmile Watershed Council acts as an advisory council to many of the public natural resource agencies, in particular, Wasco County Soil and Water Conservation District, US Forest Service, Oregon Department of Fish and Wildlife and Oregon Department of Environmental Quality. Fifteenmile Watershed Council has completed a comprehensive watershed assessment. Fifteenmile Watershed Council has acted as the public forum for development of Total Maximum Daily Loads in the Fifteenmile Watershed.³⁷

The Dalles Area Watershed Council

The Dalles Area Watershed Council provides a forum for discussion of natural resource issues within the watersheds of Threemile, Mill and Chenowith Creeks. They act as an advisory council to many of the public natural resource agencies, in particular, Wasco County Soil and Water Conservation District, US Forest Service, Oregon Department of Fish and Wildlife and Oregon Department of Environmental Quality. The Dalles Area

³²Joe McCanna, personal communication, November 2003.

³³Treaty with the Tribes of Middle Oregon, 1855

³⁴Jennifer Clark, Wasco County Soil and Water Conservation District, personal communication, November 2003.

³⁵Jennifer Clark, Wasco County Soil and Water Conservation District, personal communication, November 2003.

³⁶Jennifer Clark, Wasco County Soil and Water Conservation District, personal communication, November 2003.

³⁷Jennifer Clark, Wasco County Soil and Water Conservation District, personal communication, November 2003.

Watershed Council has completed a comprehensive watershed assessment and is beginning work on a watershed action plan.³⁸

Mosier Watershed Council

Mosier Watershed Council provides a forum for discussion of natural resource issues within the Mosier Creek, Rowena Creek and Rock Creek Watersheds. They act as an advisory council to many of the public natural resource agencies, in particular, Wasco County Soil and Water Conservation District, US Forest Service, Oregon Department of Fish and Wildlife and Oregon Department of Environmental Quality. Mosier Watershed Council has assisted DEQ to collect stream temperature data, has completed a watershed assessment and is currently working on a groundwater restoration and management plan.³⁹

Fifteenmile Watershed Council and Wasco County SWCD. 2003. *Fifteenmile Watershed Assessment*. This assessment reviews upland, riparian and instream conditions in the Fifteenmile Creek Watershed, including all tributaries, using and expanding upon the protocol developed by Oregon Watershed Enhancement Board (OWEB) in the Oregon Watershed Assessment Manual.

Fifteenmile Watershed Council and Wasco County Soil & Water Conservation District 1997. Fifteenmile Watershed Action Plan. The Fifteenmile Watershed Action Plan⁴⁰ provides strategies to reduce runoff and sediment generation in the uplands, improve grazing systems in the riparian zones and uplands, manage forestlands to protect watershed values, improve riparian corridors, minimize flood damage to streambanks and riparian vegetation, improve irrigation efficiency and actively improve the management of the uplands for the purpose of wildlife.

The Dalles Area Watershed Council and Wasco County SWCD. 2003. *The Dalles Watershed Assessment*. This assessment reviews upland, riparian and instream conditions in the Threemile, Mill and Chenoweth Creek Watersheds, using and expanding upon the protocol developed by Oregon Watershed Enhancement Board (OWEB) in the Oregon Watershed Assessment Manual.

Mosier Watershed Council and Wasco County SWCD. 2002. *Mosier Watershed Assessment*. This assessment reviews upland, riparian and instream conditions in the Rowena, Mosier and Rock Creek Watersheds, using and expanding upon the protocol developed by Oregon Watershed Enhancement Board (OWEB) in the Oregon Watershed Assessment Manual.

Mosier Watershed Council and Wasco County SWCD. DRAFT. Mosier Groundwater Restoration and Management Action Plan. This plan will describe a program to address

³⁸ Jennifer Clark, Wasco County Soil and Water Conservation District, personal communication, November 2003.

³⁹ Jennifer Clark, Wasco County Soil and Water Conservation District, personal communication, November 2003.

⁴⁰ Fifteenmile Watershed Council 1997

the falling groundwater levels in the Mosier Valley, and will feature goals including stable or increasing groundwater levels, sustainable agriculture, and healthy streamflows.

USFS. 1994. *Mile Creeks Watershed Analysis*. This analysis looks at forest health issues and stream health within the upper portions of Fifteenmile, Eightmile and Fivemile Creeks. The analysis includes not only national forest lands, but extends downstream to the first major confluence in each stream.

USFS. 2000. *Mill Creek Watershed Analysis*. This analysis looks at forest health issues and stream health within the entire Mill Creek watershed.

ODFW. 2001. *Fifteenmile Creek Physical Habitat Surveys*. Aquatic Inventory Project.

ODFW. 2002. *Eightmile Creek and Fivemile Creek Physical Habitat Surveys*. Aquatic Inventory Project.

4.2.2 Tribal Plans

Fifteenmile Creek Salmon and Steelhead Production Plan

The *Fifteenmile Creek Salmon and Steelhead Production Program*⁴¹ Oregon Department of Fish and Wildlife (ODFW) and the Confederated Tribes of Warm Springs (CTWS) developed this plan to guide steelhead management actions in the Fifteenmile Watershed. This Plan was part of the Northwest Power Planning Council's original Subbasin Planning effort. The Plan provided the basis for salmon and steelhead production strategies and attempted to estimate current and potential production. The Plan summarized management goals and identified problems and opportunities associated with increasing salmon and steelhead production.

Wy-Kan-Ush-Mi Wa-Kish-Wit

This is the Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes.⁴² This plan includes adult return targets for each subbasin in the Columbia Basin. Wy-Kan-Ush-Mi Wa-Kish-Wit recommends habitat restoration actions that focus on limiting, restricting, or eliminating land uses and enhancing populations with implementation of new broodstock, release and production programs. The plan was published in 1996, and habitat restoration projects emphasizing implementation of forest, range, and agricultural best management practices have been initiated in priority watersheds since 1997 through the Council's program.

4.2.3 Federal Plans

National Resources Conservation Service Deschutes Basin Strategic Plan

In the State of Oregon, the Natural Resources Conservation Service (NRCS) is organized loosely by river basins. The Fifteenmile Subbasin is included in the NRCS "Deschutes Basin." NRCS is developing a Deschutes Basin Strategic Plan that describes the goals

⁴¹ The Fifteenmile Creek Salmon and Steelhead Production Program 1990

⁴² Columbia Inter Tribal Fish Commission 1996

and objectives of the agency. The Strategic Plan describes the federal programs administered by NRCS, and includes the Annual Plans for each of the six SWCDs in the Deschutes Basin.⁴³

Northwest Forest Plan

Mt. Hood National Forest Land and Resource Management Plan

The U.S. Forest Service (USFS) manages approximately 15 percent (55,245 acres) of the Fifteenmile Creek subbasin. Management of these lands is guided by USFS policies and federal legislation. Management guidelines for the subbasin are contained in the *Mt. Hood National Forest Land and Resource Management Plan* and *Attachment A: Standards and Guidelines for Management of Habitat for Late Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* of the 1994 *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*.⁴⁴ These plans provide standards and guidelines for management of the national forest lands in the subbasin. Included in the *Northwest Forest Management Plan* is the Aquatic Conservation Strategy (ACS) which was developed to maintain and restore the ecological health of watersheds and aquatic ecosystems on public lands. The four components of the ACS, riparian reserves, key watersheds, watershed analysis, and watershed restoration, are designed to operate together to maintain and restore the productivity and resiliency of riparian and aquatic ecosystems. The ACS provides protection of salmon and steelhead habitat on federal lands by striving to maintain and restore ecosystem health at watershed and landscape scales to protect habitat for fish and other riparian-dependent species and resources, and restore currently degraded habitats. This approach seeks to prevent further degradation and restore habitat over broad landscapes. All proposed and existing projects in the subbasin are designed to meet the intent of the ACS objectives.⁴⁵

Columbia Gorge Scenic Area Management Plan—Columbia Gorge Commission & US Forest Service

The Columbia River Gorge National Scenic Area was created on November 17, 1986 when President Reagan signed into effect Public Law 99-663. After nearly 5 years of scenic, cultural, natural and recreational resource data collection and analysis, a Management Plan for the Scenic Area was adopted by the Columbia River Gorge Commission on October 15, 1991 and concurred upon by the U.S. Secretary of Agriculture on February 13, 1992.

In compliance with the federal act establishing the Columbia River Gorge National Scenic Area, Wasco County has adopted land use regulations to implement the Management Plan within its portion of the Scenic Area. In the Fifteenmile Subbasin, the Scenic Area Management Plan is implemented within General Management Areas by

⁴³ Dusty Eddy, personal communication, December 2003.

⁴⁴ Northwest Forest Management Plan

⁴⁵ Gary Asbridge, US Forest Service, personal communication, November 2003.

Wasco County Planning Office with oversight by the Columbia Gorge Commission. Urban areas of The Dalles and Mosier are exempt from the Scenic Area Plan.

The US Forest Service directly manages certain Special Management Areas on Chenoweth Table and around the community of Rowena. These areas are primarily federally owned. Federal undertakings within the Scenic Area are regulated by the US Forest Service.⁴⁶

Endangered Species Act Implementation Plan for the Federal Columbia River Power System

The three action agencies have prepared the implementation plan⁴⁷ in acknowledgement of responsibilities for fish protection under the Northwest Power Act and water quality protection under the Clean Water Act, and their obligations to Indian tribes under law, treaty, and Executive Order. The plan responds to the December 2000 Biological Opinions issued by the U.S. Fish and Wildlife Service and the NOAA Fisheries on the effects to listed species from operations of the Columbia River hydropower system.

The plan is a five-year blueprint that organizes collective fish recovery actions by the three agencies. The plan looks at the full cycle of the fish, also known as “gravel to gravel” management or an “All-H” approach (hydro, habitat, hatcheries, and harvest). However, it describes only commitments connected to the Federal Columbia River Power System (FCRPS), not the obligations of other federal agencies, states, or private parties. The plan describes the three agencies’ goals; the performance standards to gauge results over time; strategies and priorities for each H; detailed five-year action tables for each H; research, monitoring, and evaluation plan and expectations for regional coordination.

Federal Columbia River Power System Biological Opinion and Salmon Recovery Strategy

NOAA Fisheries has recently developed several documents and initiatives for the recovery of Endangered Species Act listed Snake River steelhead, chinook and sockeye. The Federal Columbia River Power System (FCRPS) Biological Opinion (BiOp) and the Basinwide Salmon Recovery Strategy issued at the end of 2000 contain actions and strategies for habitat restoration and protection for the Columbia River Basin. Action agencies are identified that will lead fast-start efforts in specific aspects of restoration on nonfederal lands. Federal land management will be implemented by current programs that protect important aquatic habitats (PACFISH, ICBEMP - Interior Columbia Basin EcoSystem Management Project). Actions within the FCRPS BiOp are intended to be consistent with or complement the Council’s amended Fish and Wildlife Program and state and local watershed planning efforts.

NOAA Fisheries has also initiated recovery planning with the establishment of a Technical Recovery Team for the Interior Columbia, which includes Snake River stocks. The Technical Recovery Team will identify delisting criteria and viability criteria for populations within Evolutionary Significant Units, identify factors that limit recovery,

⁴⁶ Mike Ferres, Columbia River Gorge National Scenic Act, personal communication, March 2004

⁴⁷ Bonneville Power Administration et al. 2001

and identify early actions for recovery among other things. A stakeholder-based forum will develop a formal recovery plan from these products.

Under the 2000 Federal Columbia River Power System (FCRPS) Biological Opinion (BiOp), NOAA Fisheries expects the Bonneville Power Administration, the Corps of Engineers, and the Bureau of Reclamation to meet their Endangered Species Act obligations in part through offsite mitigation.⁴⁸ Subbasin plans will become local recovery plans or will become a substantial component of NOAA Fisheries recovery planning. The BiOp relies on subbasin plans to identify and prioritize specific actions needed to recover listed salmon and steelhead in tributary habitats. NOAA Fisheries expects subbasin plans to include implementation of the BiOp's offsite mitigation actions. NOAA Fisheries also expects subbasin plans to incorporate their recommended research, monitoring, and effective strategies and actions.

NOAA Fisheries is currently undergoing a remand of the 2000 Biological Opinion. Sections of the opinion might change. However, for the purposes and timeframe of this subbasin plan, the 2000 BiOp is the operative document.

Columbia River Fish Management Plan

The Columbia River Fish Management Plan (CRFMP) is an agreement resulting from the U.S. District Court case of U.S. V. Oregon.⁴⁹ This agreement between federal agencies, Indian tribes and state agencies (except Idaho) set guidelines for the management, harvest, hatchery production, and rebuilding of Columbia River Basin salmonid stocks. Appropriate harvest levels and methods were established for various levels of attainment of interim population goals for spring chinook, summer chinook, sockeye, fall chinook, summer steelhead, and coho salmon. The plan guaranteed the treaty Indian fisheries a minimum of 10,000 spring and summer chinook annually, not dependent on run size. The original CRFMP terminated in 1998; it is currently being renegotiated, with completion anticipated by December 2003. In the interim, seasonal fish management plans have been drafted and agreed to by relevant parties.

4.2.4 State Plans

The Oregon Plan for Salmon and Watersheds

The purpose of the Oregon Plan for salmon and Watersheds is to restore Oregon's wild salmon and trout populations and fisheries to sustainable and productive levels that will provide substantial environmental, cultural, and economic benefits and to improve water quality.⁵⁰

⁴⁸ Lohn 2002

⁴⁹ U.S. District Court case of U.S. V. Oregon , Case No. 68-513

⁵⁰ Jay Nicholas, personal communication, November 2003.

Lower Deschutes Agricultural Water Quality Management Area Plan— Oregon Department of Agriculture

In cooperation with Lower Deschutes Local Advisory Committee and Wasco County Soil and Water Conservation District, Oregon Department of Agriculture (ODA) developed the *Lower Deschutes Agricultural Water Quality Management Area Plan*⁵¹ (2000) to address agricultural water quality issues in the lower Deschutes River and all streams flowing into the Columbia River between the Hood River and John Day River, including the Fifteenmile Creek subbasin. It identifies strategies to reduce water pollution from agricultural lands and achieve water quality standards. It applies to lands in current agricultural use and those lying idle or on which management has been deferred.⁵²

Fifteenmile Basin Fish Habitat Improvement Implementation Plan

The *Fifteenmile Basin Fish Habitat Improvement Implementation Plan*⁵³ is the main source of guidance for Oregon Department of Fish and Wildlife fish habitat projects in the Fifteenmile Watershed. The objective of this program is to maximize winter steelhead production in the subbasin. This plan identified existing habitat problems, solutions, goals and objectives, and identified fisheries benefits that would accrue with implementation.

4.2.5 Other Plans



City of The Dalles--Municipal Watershed

The South Fork of Mill Creek constitutes the municipal drinking water source for the City of The Dalles. Most of this subwatershed is publicly owned and managed, either by the City of The Dalles or by the US Forest Service as part of the Mount Hood National Forest. The Dalles Watershed is managed to protect forest health and water quality. Public access is restricted. Both the City and the Forest Service practice selective logging using prescriptions designed to improve forest health and minimize the risk of wildfire. Mill Creek Falls restricts the range of anadromous fish to the lower five miles of South Fork Mill Creek. Upstream of the falls, South Fork and many of its tributaries provide 18 miles of habitat for redband trout.

In addition to Forest Service plans and programs, there are three management plans that guide operations within The Dalles Municipal Watershed. The first is the Comprehensive Management Plan which is part of the 1972 MOU with the Mount Hood National Forest, USFS. The MOU provides that the primary resource to be managed for is the protection of water quality, as does an agreement between the City and the US Secretary of Agriculture which dates back to 1912. The Plan provides guidance on allowable timber harvests (methods and acreages), road construction and maintenance, and planning and protection measures to be taken to protect water quality.

⁵¹ Lower Deschutes Agricultural Water Quality Management Area Plan, 2000.

⁵² Ron Graves, personal communication, November 2003

⁵³ Fifteenmile Basin Fish Habitat Improvement Implementation Plan, Oregon Department of Fish and Wildlife and US Forest Service, 1987

The second plan is a Habitat Conservation Plan between the City, US Fish and Wildlife Service, and the USFS for the protection of northern spotted owls. This 30-year plan outlines the protection measures that the City will implement during timber harvests on City-owned lands to protect the owls. As part of this plan, the City has committed to the following on City-owned properties in the Watershed:

"maintenance of riparian buffers along South Fork Mill Creek and Crow Creek for a slope distance equal to or greater than the height of two site-potential trees from the edge of the stream channel in which 60-80% conifer canopy closure will be maintained if present and practicable."⁵⁴

The third plan is the City's 5-year Timber Management Plan that outlines activities planned to occur on the City's forested lands within the Watershed. These activities include timber harvests, planting, timber stand surveys, forest health assessments, and gopher control activities. The City utilizes a contracted forester to develop these 5-year plans and assist the City in administering the identified activities.

ODF stream protection regulations would require, at most, 100-ft buffers (where conifer basal area retainage requirements would apply) along streams during timber harvest operations. The City's current 5-year Timber Management Plan recognizes our commitments made in the HCP by establishing 275-ft riparian buffers along all streams in the Watershed. These riparian reserves have been mapped and are essentially off-limits for timber harvest activities as long as they remain healthy and maintainable.

Wasco County Soil and Water Conservation District Strategic Plan
Wasco County Soil and Water Conservation District Annual Plan of Work

Wasco County SWCD works with farmers and ranchers to develop farm conservation plans and resource management plans. The SWCD administers grants to encourage conservation work on private lands in the Fifteenmile Creek subbasin and other lands in Wasco County. Wasco County SWCD has assisted Wasco County Public Works and other agencies in design and installation of conservation structures and practices.⁵⁵

Wasco County SWCD has assisted the Public Works department in design modification and installation of settling basins, drop-structures, ditches, and culverts. Wasco County SWCD also installed a bank and roadside protection structure near Company Hollow Road and Fifteenmile Road intersection in Fifteenmile Creek itself.⁵⁶

Wasco County Soil and Water Conservation District adopts a strategic plan on a five-year basis. The strategic plan describes the goals, objectives and priorities of the SWCD during that five-year period. Every year, the SWCD adopts an annual plan of work that specifies actions and responsibilities for that year.

⁵⁴ City of The Dalles Habitat Conservation Plan

⁵⁵ Ron Graves, personal communication, December 2003.

⁵⁶ Marty Matherly, Public Works, personal communication, November 2003

4.3 Existing Watershed Projects

4.3.1 Riparian Buffers

Table 4.2 Recent and Ongoing Riparian Buffer Programs

Organizat- ion	Project	Where Applies	Start/End Date	Status	Limiting Factors Addressed
ODFW	Fifteenmile Creek Habitat Restoration Project (BPA #1993-040-00)	Fifteenmile, Eightmile, Ramsey, Dry Creek	1990--	In progress	Key Habitat Quantity, Habitat Diversity, Channel Stability, Temperature
USDA/FSA/ NRCS	CCRP	Non- anadromous streams	1999—2016	In progress	Key Habitat Quantity, Habitat Diversity, Channel Stability, Temperature
USDA/FSA/ NRCS	CREP	Anadromous streams	1999—2016	In progress	Key Habitat Quantity, Habitat Diversity, Channel Stability, Temperature

Table 4.2 cont. Recent and Ongoing Riparian Buffer Programs

Organizat- ion	Project	Where Applies	Start/End Date	Status	Limiting Factors Addressed
SWCD	Fifteenmile Riparian Buffers (BPA #2001-021-00)	All streams	4/2001--3/2006	In progress	Key Habitat Quantity, Habitat Diversity, Channel Stability, Temperature
CTWSR	Fifteenmile CREP/Re- seeding	Tribal lands on Fifteenmile Cr.	07/01/2002— 09/30/2016	Activities completed. Contract continues until 2016.	Key Habitat Quantity, Habitat Diversity, Channel Stability, Temperature
SWCD	Riparian Protection & Upland Water Source	Standard Hollow, tributary of Fifteenmile	06-24-2002/06- 10-2003	Completed	Key Habitat Quantity, Habitat Diversity, Channel Stability, Temperature
Wasco County Court	Mill Creek Floodplain Easement	Mill Creek	August 2003--	In Progress	Channel Stability
Mosier Alliance/City of Mosier	Mosier Waterfront Project	Mouths of Rock Creek and Mosier Creek	2000-Present	In Progress	Channel Stability, Temperature, Sediment
NW Aluminum	Chenowith Creek Fencing	Chenowith Creek	August 2002--	Complete	Pollutants, Channel Stability

Riparian buffers provide for a corridor of mature riparian vegetation between a stream and adjacent land uses. Such systems address multiple limiting factors identified in the Fifteenmile Subbasin Assessment. They reduce sediment inputs, stabilize streambanks, and provide shade, thus reducing summer water temperature. Wider buffers provide greater long-term benefits, as they allow for the restoration of natural stream hydrology, channel migration, floodplain interaction and habitat types.

Fifteenmile Basin Fish Habitat Improvement Implementation Program

The Oregon Department of Fish and Wildlife (ODFW) implemented the initial riparian protection program for the Fifteenmile Watershed beginning in 1988. The Program

initially built riparian exclusion fence, livestock watering facilities and instream habitat structures on privately owned land. This program protected high priority spawning and rearing habitat first, and has progressed through all areas of the Fifteenmile Watershed with receptive landowners and anadromous access. Riparian exclusion fence was constructed at no cost to landowners in exchange for a 15-year lease agreement wherein the landowner agreed to allow natural riparian vegetation to develop, and ODFW further agreed to provide fence maintenance for the term of the lease. Between 1988 and 1996, ODFW constructed approximately 110 miles of fence, protecting 55 miles of stream. Since 2000, ODFW constructed an additional 30 miles of fence in priority areas, providing continuity with previous projects and capitalizing on properties enrolled in the USDA Conservation Reserve Enhancement Program (see below). In these cases, the landowners provide fence maintenance for a period of fifteen years, in accord with both ODFW and USDA lease agreements. This program, implemented by ODFW and funded through the Bonneville Power Administration, has successfully protected 70 miles of anadromous fish-bearing streams in the Fifteenmile Subbasin.

Continuous Conservation Reserve and Conservation Reserve Enhancement Program

The Conservation Reserve Enhancement Program (CREP) and the Continuous Conservation Reserve Program (CCRP) are riparian area protection programs implemented by the USDA Farm Services Agency (FSA). These two programs are managed through the U.S. Department of Agriculture Farm Service Agency with technical assistance provided by the USDA Natural Resources Conservation Service. These programs are voluntary and include some combination of the following: incentive payments, cost-sharing with plantings, and rental payments.

The Continuous Conservation Reserve Program (CCRP) is run by the USDA Natural Resources Conservation Service (NRCS) and the Farm Service Agency (FSA). The program was established in 1999 under the 1996 Farm Bill and was re-authorized in the 2002 Farm Bill. CCRP enrolls private lands under a ten to fifteen year contract under which the landowner agrees to use the land exclusively as a forested riparian buffer and is in turn paid a rental rate for the land so dedicated. Forested riparian buffers cover approximately one third of the active floodplain, and vary in width between 35 and 180 feet on either side of the stream. Landowners share the cost of planting trees, building fences and other practices with the federal government.

The Conservation Reserve Enhancement Program (CREP) is a joint effort of the State of Oregon and the NRCS. This program uses the guidelines of the CCRP program, but the State provides additional cost-share dollars to provide additional incentive for landowners to enroll. This program is only available on anadromous spawning and rearing streams. Included in the CREP program are 2,200 feet of Fifteenmile Creek owned by the Confederated Tribes of the Warm Springs Reservation. That contract covers 13.8 acres.

Wasco County Soil and Water Conservation District has supported the CCRP and CREP programs by providing two full-time planners to provide accelerated technical assistance. Funding for these planners has been provided by the Bonneville Power Administration. In addition, Wasco County SWCD has provided funds from various sources to landowners for the purpose of stream protection at specific points in the watershed.

As of May 21st 2004, the Fifteenmile Subbasin boasted more than 1,660 acres in the USDA Forested Riparian Buffer practice along Fifteenmile, Eightmile, Fivemile, Threemile, Mill Creek and various tributaries to these streams. These contracts provide over 58.5 stream miles of forested riparian buffers, including 49.8 stream miles of anadromous streams. Pending applications to this program cover another 35 stream miles in the Fifteenmile Subbasin.

Between the USDA and ODFW, over 90 miles of riparian corridor in the privately owned portion of Fifteenmile Subbasin have been protected from grazing, agriculture and other land uses.

Mount Hood National Forest

Mount Hood National Forest protects riparian corridors through the standards of the Northwest Forest Plan. Riparian Reserve widths are specified in that document for perennial and seasonal streams.

The Mount Hood National Forest has been working to improve floodplain and instream conditions in the federally-owned reaches of Fifteenmile, Ramsey, Eightmile and Fivemile Creeks. Their methods have focused on large woody debris placements, decommissioning of roads and native tree and shrub plantings and improving fish passage.

In 1998, the Mount Hood National Forest placed 250 logs in the floodplain of Fifteenmile Creek upstream of the national forest boundary. The floodplain appears to have stabilized, and streambank erosion appears to have diminished. Wetland species are taking over the area, crowding out dryland tree species (i.e. ponderosa pine) which had previously dominated the floodplain⁵⁷.

Between 2000 and 2002, Mount Hood National Forest placed more than 1400 logs instream and in the floodplain of a 3 mile stretch of Ramsey Creek. In addition, they converted a riparian road to a foot trail and planted native trees and shrubs. Much of this reach had been recently purchased by the National Forest and had previously been heavily logged by a private company.

A similar project was initiated in June 2003 along a reach of Fifteenmile Creek that includes both National Forest land and land owned by the City of Dufur. As of November 19, 2003, logs had been placed along 0.3 miles of stream. The remainder of the project includes vacating the public road, piping an irrigation ditch that withdraws water from the upper end of the affected segment, riparian planting and a similar LWD project about 2.5 miles downstream.

City of Mosier

Mosier Creek provides 0.45 miles of anadromous habitat, all of which is in public ownership. Downstream of Pocket Falls, Mosier Creek flows through a canyon and into the Columbia River, through land owned by the City of Mosier, Oregon Department of Transportation, and Union Pacific Railroad. The portion owned by the City of Mosier is

⁵⁷ Gary Asbridge, USFS, visual observation and photopoints 2003

lightly developed parkland. While harassment potential is high near the mouth of the creek, it is largely inaccessible to the public upstream of US30 due to vertical canyon walls and wetland conditions.

The City of Mosier, in cooperation with the Mosier Alliance, has been developing their waterfront for recreational purposes. The Mosier Waterfront Project is federally funded through the National Scenic Area. The goals of the project are to encourage tourism, while protecting or enhancing scenic beauty and the environment. The focus of most of the activities has been the mouths of Rock Creek and Mosier Creek, which provide the only access to the Columbia River from the south side of Interstate 84 and the Union Pacific Railway. The Waterfront Project is developing trails and access for windsurfers and other recreationalists, while attempting to minimize environmental impacts on the streams. As part of this project, riparian vegetation has been planted along the banks of Rock Creek.

Northwest Aluminum

Chenoweth Creek provides 3.5 miles of anadromous habitat. Northwest Aluminum Plant owns approximately 0.25 miles of the stream between US30 and I84. They leased that piece of land as pasture for horses. In 2001, this reach was identified as highly polluted with organic waste. Streambed pebble counts in November 2002 found that spawning gravels in this reach were entirely covered by horse manure.

Northwest Aluminum required the lessee to fence off the creek, with the exception of one gap where the horses could drink. Follow-up monitoring in November 2003 indicated that manure waste had been eliminated from spawning gravels in this reach.

Wasco County--Mill Creek Conservation Easement

Wasco County proposes to purchase an easement on a floodplain along the west side of Mill Creek, across from Erickson's Addition, a neighborhood of The Dalles that abuts directly against the stream. The purpose of this easement would be to ensure that residential development does not occur on the west side of the stream, and possibly to allow development of an overflow channel that would reduce flood dangers to Erickson's Addition and downstream neighborhoods. Such a channel would hopefully provide a small amount of off-channel habitat for fish or amphibians, and would buffer downstream flood flows by a small amount, thus protecting instream habitat from damage during flood events. Engineering design was completed in January 31, 2004 on a potential overflow channel.

4.3.2 Instream Habitat Enhancement

Table 4.3 Recent and Ongoing Instream Habitat Enhancement Projects

Organizat- ion	Project	Where Applies	Start/ End Date	Status	Limiting Factors Addressed
ODFW	Fifteenmile Creek Habitat Restoration Project— Instream structures (657 on Fifteenmile, 191 on Eightmile)	Fifteenmile, Ramsey and Eightmile Creeks	1990-2000	In progress	Key Habitat Quantity, Habitat Diversity, Channel Stability
USFS	Various instream LWD placements (616 log structures)	Fifteenmile Watershed on National Forest	1987-1997	Completed	Key Habitat Quantity, Habitat Diversity, Channel Stability
SWCD	Hazard Mitigation	Fifteenmile, Threemile, Mill	1995—1998	Completed	Channel Stability, Sediment
USFS	Fifteenmile Floodplain Treatment (250 logs)	Fifteenmile Creek, 10 acres, just upstream of national forest boundary	7/1998 - 10/1998	Completed	Key Habitat Quantity, Habitat Diversity, Channel Stability
SWCD	Fifteenmile Bioengineering	Lower Fifteenmile Creek, (514 feet)	2000	Complete	Channel Stability, Sediment
USFS	Ramsey Creek Stream & Riparian LWD Addition (1400 logs, road decommission, plantings)	Ramsey Creek, 3 miles, on lands recently acquired by national forest	7/2000 - 10/2002	Completed	Key Habitat Quantity, Habitat Diversity, Channel Stability

Table 4.3 cont. Recent and Ongoing Instream Habitat Enhancement Projects

Organizat- ion	Project	Where Applies	Start/ End Date	Status	Limiting Factors Addressed
USFS	Fifteenmile Riverkeeper	Fifteenmile Creek, 1.5 miles, on MHNH and City of Dufur land	6/2002 - 10/2005	In Progress	Key Habitat Quantity, Habitat Diversity, Channel Stability
SWCD	Wrentham Bioengineering	Lower Fifteenmile Creek, (700 feet)	2003	Completed	Channel Stability, Sediment

Instream structures have been installed in various locations in Fifteenmile Subbasin by various agencies with the goal of creating or improving pools and riffles for fish habitat, stabilizing streambanks and channels, improving fish passage and reducing sediment originating from bank erosion. Key habitat quantity, habitat diversity and channel stability are limiting factors identified in the Fifteenmile Subbasin Assessment.

The Mount Hood National Forest has placed over 2,200 logs instream and on the floodplains of Fifteenmile Watershed. Most of these projects have been on Forest Service land, although the ongoing Fifteenmile Riverkeeper project also addresses lands owned by the City of Dufur, identified in the Subbasin Assessment as a high priority reach for restoration. All National Forest projects since 1998 have placed logs both instream and on the floodplain, with the goal of reducing stream energy when the stream overflows its banks and to allow for instream structure if the channel shifts..

Through the Fifteenmile Creek Habitat Restoration Project, Oregon Department of Fish and Wildlife has created 848 instream structures on 55 separate parcels along Fifteenmile, Ramsey and Eightmile Creeks. These reaches are identified in the Fifteenmile Subbasin Assessment as high priority reaches for restoration. ODFW structures include rock and log weirs, boulder placements, and jetties. Many of these structures were put into place in conjunction with riparian fencing.

Wasco County SWCD has spearheaded implementation of two bioengineering projects on Lower Fifteenmile Creek, a high priority restoration area. Goals of bioengineering are to stabilize the most serious instances of streambank erosion while allowing for riparian recovery and minimizing the use of riprap. Typical practices focus on streambank shaping, use of geotextile fabric and plantings to stabilize banks. Instream structures include grade stabilization structures to prevent headcutting and rock weirs to redirect flow away from sensitive banks.

While instream structures for fish habitat have been widely applied in Fifteenmile Watershed, they have generally not been widely applied in the other watersheds of the Fifteenmile Subbasin.

4.3.3 Fish Passage

Table 4.4 Recent, Ongoing and Planned Fish Passage Improvements

Organizat- ion	Project	Where	Start/End Date	Status	Limiting Factors Addressed
ODOT	Threemile Culvert Replacement @ US30	Threemile Creek, RM 1	Sept/03— Jan/04	Completed	Fish Passage
ODOT	Rock Creek Detention Basin	Rock Creek, RM 1	2004?	Planned	Channel Stability
ODOT	Threemile Freeway Culvert	Threemile Creek, RM 0	2006?	Planned	Fish Passage
City of The Dalles	Mill Creek Fish Passage @ Water Line	RM 6.7	Nov/01	Completed	Fish Passage
City of The Dalles	Fish Screen at City Water Intake	South Fork Mill Creek, RM 2	Mar/02	Completed	Fish Passage
City of The Dalles, ODFW	Fish Passage, Roughen Channel Fishway	Mill Creek, RM 5.4	Oct/02	Completed	Fish Passage
City of The Dalles	Fish Passage, 2 sites	South Fork Mill Creek, RM 0-2	Oct/02	Completed	Fish Passage
City of The Dalles/ODFW	Fish Ladder @ City Water Intake	South Fork Mill Creek, RM 2	May/03	Completed	Fish Passage
ODFW	Fish Screening and Passage: Fifteenmile (5 ladders, 5 rotary screens and 75 pump screens)	Fifteenmile and Ramsey Creeks	1988-1997	Completed	Fish Passage
ODFW	Fish Screening and Passage: Mill Creek (13 pump screens)	Mill Creek, between RM 1.5 and RM 10.5	June/00— May/02	Completed	Fish Passage

Table 4.4 cont. Recent, Ongoing and Planned Fish Passage Improvements

Organizat- ion	Project	Where	Start/End Date	Status	Limiting Factors Addressed
ODFW	Fish Ladder	Mill Creek, RM 1.5	Planned 2004	Planned	Fish Passage
USFS	Orchard Ridge Ditch Weir	Fifteenmile, RM 37	1995	Completed	Fish Passage
USFS	4440-160 Culvert Replacement	SF Fivemile Creek	1998	Completed	Fish Passage
USFS	4431 Culvert Replacement	MF Fivemile Creek	1998	Completed	Fish Passage
USFS	Eightmile Creek Fish Passage Improvement	Eightmile Creek, RM 21	7/2002-- 10/2002	Completed	Fish Passage
USFS	North Fork Mill Creek Passage Improvement	North Fork Mill Creek, RM 7	2004	In Progress	Fish Passage

Natural barriers to fish passage limit anadromous habitat on Fifteenmile Creek, South Fork Mill Creek, Mosier Creek and Rock Creek. Pocket Falls on Mosier Creek, Mill Creek Falls on South Fork and an unnamed water fall on Rock Creek are all total barriers to upstream migration.

In addition to the natural barriers noted above, anthropogenic fish passage barriers exist on all streams. Fish passage barriers have been removed or mitigated by the Forest Service, City of The Dalles, Oregon Department of Fish and Wildlife, and Oregon Department of Transportation. Anthropogenic fish passage barriers found in the Fifteenmile Subbasin include culverts, irrigation diversions, pipelines and abandoned structures, headcuts, and natural features.

In Fifteenmile Watershed, ODFW has provided assistance to build fish ladders and screens at every irrigation diversion in Fifteenmile, Eightmile and Ramsey Creeks. As of 2003, none of those sites are considered passage barriers to adult steelhead. Several diversion structures may still constitute barriers to upstream movement of juveniles, and may cause mortality by preventing movement of juvenile fish in the summer, when water temperatures reach lethal levels in the lower portions of the watershed.⁵⁸ In 1998, ODFW conducted a culvert survey with funding from Oregon Department of Transportation

⁵⁸ Steve Springston, Oregon Department of Fish and Wildlife, comments at EDT Work session, November 25, 2003.

(ODOT)⁵⁹ The surveyor identified seventeen culverts in the Fifteenmile Subbasin as not meeting fish passage criteria, affecting Threemile Creek, Chenowith Creek, Brown’s Creek, Long Hollow, Douglas Hollow, Standard Hollow, Dry Creek (tributary of Mosier Creek), Japanese Hollow, Mays Canyon Creek, Whiskey Gulch, Japanese Hollow and North Fork Fivemile Creek. All of those sites are dry in the summer, with the exception of Threemile Creek and Chenowith Creek. All of the noted culverts on other streams were listed as low priority for repair. The Threemile culvert is on US Highway 30, near the intersection with US197, and is currently being upgraded by ODOT.

A steep headcut dating back to the 1996 flood event has created a waterfall on Threemile Creek at RM 4.5 that will likely become the new limit to anadromous fish passage in that system.

The US Forest Service has been replacing culverts on forest service roads on all creeks. As of 2003, the Forest Service has identified eight more culverts as needing replacement. These culverts affect fish passage on Eightmile Creek, Middle Fork Fivemile Creek, South Fork and North Fork Mill Creek, and Alder Creek, a tributary of South Fork Mill Creek.⁶⁰

4.3.4 Agricultural Lands

Table 4.5 Recent and Ongoing Agricultural Conservation Projects

Organizat- ion	Project	Where Applies	Start/End Date	Status	Limiting Factors Addressed
SWCD	Soil Moisture Monitoring for irrigation efficiency	Adopted by various orchard growers from Mosier to Dufur	June 2001-- August 2002	Completed	Low Flows
SWCD	Nelson Drip Irrigation Conversion	Threemile Watershed	08/19/2002— 06/11/2003	Completed	Low Flows
SWCD	Fifteenmile Creek Watershed Enhancement	Private lands in Fifteenmile Watershed	1995—2015	In progress, partially funded	Low Flows, High Flows, Sediment
USDA/NRCS	Environmental Quality Incentives Program	All Private Lands	1995-2010	In progress	Low Flows, High Flows, Sediment, Pollutants

⁵⁹ McDermott, February 1999.

⁶⁰ Gary Asbridge, US Forest Service, personal communication, December 2003.

Table 4.5 cont. Recent and Ongoing Agricultural Conservation Projects

Organizat- ion	Project	Where Applies	Start/End Date	Status	Limiting Factors Addressed
USDA/FSA/N RCS	Conservation Reserve Program	Highly Erodible Croplands	1985—2010	In progress	Low Flows, High Flows, Sediment
Wy'East RC&D/Wasco Co. Fruit and Produce League	Integrated Fruit Production/IFP net	Orchard Area	2000--	In progress	Pollutants

Uplands play a critical role in watershed function by determining the hydrologic behavior of the watershed. Land use in the Fifteenmile Subbasin is dominated by agriculture, forestry and urban land uses. The latter two land uses have dramatic effects on runoff. Hydrologic models predict that these effects have a noticeable effect on both high and low flows even in an average precipitation year with no unusual rainfall events. Exaggerated overland runoff also has the potential to erode soil and carry sediment and other pollutants to streams. Upland conservation activities aimed at providing better vegetative cover on the ground therefore have a highly protective effect on streamflows and address several of the limiting factors identified in the Fifteenmile Subbasin Assessment.

Wasco County SWCD, in partnership with USDA Farm Services Agency and Natural Resources Conservation Service, provides incentives to private landowners to install conservation practices on uplands. NRCS and the SWCD provide planning and design services as well as funding. Most commonly, USDA programs target commercial agricultural producers, and are employed to implement Resource Management Systems on farms and ranches. Other USDA programs target wildlife habitat and wetlands restoration. All USDA funding is limited in availability and highly competitive. Applicants compete on the basis of total environmental benefits.

The SWCD employs other funding sources, such as BPA and Oregon Watershed Enhancement Board, to provide services to other rural residents. Funding may be used for reforestation, biological control of insects, erosion control, wildlife habitat, and other conservation goals.

One of the highlights of agricultural conservation in the Fifteenmile Subbasin is the recent adoption of No-till or Direct-seed farming methods. Since 1997, approximately 45,000 acres of non-irrigated farmland has been converted to “Direct-Seed” or “No-till” farming practices in the Fifteenmile and Threemile Watersheds. Compared to the commonly used minimum-till techniques, No-till vastly reduces agricultural runoff and erosion, and therefore reduces sediment delivery to streams. Most participating farmers could not have made the necessary investments in new equipment without USDA or SWCD programs. Another 55,000 acres or more are farmed using the more traditional “Minimum till” farming methods.

In 2003, one third of EQIP funds were set aside for irrigated agriculture. Those funds were targeted toward growers who directly bordered on steelhead-bearing streams—primarily Mill Creek, but also on Threemile Creek and Fifteenmile Creek.⁶¹

Another highlight of upland agricultural conservation is the recent adoption of Integrated Fruit Production (IFP) in the orchards of Threemile, Mill Creek and Mosier Creek Watersheds. IFP is a management-intensive method of pest control that, among other conservation goals, minimizes the use of broad-spectrum pesticides, and also minimizes spray drift. Detailed weather information is needed to predict pest outbreaks and improve timing of orchard operations. Wyeast RC&D, working with the Wasco County Fruit and Produce League, has spearheaded the installation of a network of weather stations throughout the orchard areas that provide the necessary data. They have also provided an entomologist to growers who develop IFP plans with growers and scouts for pests, thereby pinpointing the location of outbreaks.

Oregon Water Resources Department demonstrated in 1988 that the falling aquifers in the Mosier Valley were affecting stream flows in Mosier Creek⁶². Mosier Watershed Council has proposed to address the issue of falling groundwater levels in the agricultural zone of the Mosier Valley. The Watershed Council has been working with Wasco County SWCD, Oregon Water Resources Department and US Geological Survey to develop a plan that includes research, conservation, and technological upgrades to achieve the goal of stable or increasing aquifers and sustainable irrigated agriculture in the Mosier Valley.

⁶¹ Dusty Eddy, National Resource Conservation Service, personal communication, December 2003.

⁶² Ken Lite, Oregon Water Resources Department, presentation to the Mosier Watershed Council, March 2003 and August 2003.

4.3.5 Uplands—Forestry

Table 4.6 Recent and Ongoing Conservation Projects on Forestlands

Organizat- ion	Project	Where Applies	Start/End Date	Status	Limiting Factors Addressed
USFS	Road Obliteration or closure	Mt. Hood National Forest	1991--	Ongoing	High Flows, Sediment
Oregon Dept. Forestry (ODF)	National Fire Plan-- Defensible Space Grants	Dry Creek (Mosier), Sevenmile Hill, Rowena and Chenowith Creeks	2002—2004	Ongoing	Forest Health: High Flows Sediment, Wildlife Habitat
ODF	Forestland Enhancement Program	Forestlands throughout subbasin	2003--	Authorized but Unfunded	Forest Health: High Flows Sediment, Wildlife Habitat
ODF	East Cascades Bark Beetle Mitigation	Forestlands throughout subbasin	2003	Ongoing	Forest Health: High Flows Sediment, Wildlife Habitat

Table 4.6 cont. Recent and Ongoing Conservation Projects on Forestlands

Organizat- ion	Project	Where Applies	Start/End Date	Status	Limiting Factors Addressed
Wasco Co. SWCD	Emergency Wildfire Recovery	Sheldon Ridge Fire	11-02/05-03	Completed	Forest Health: High Flows Sediment, Wildlife Habitat

Forestlands in Fifteenmile Subbasin are believed to suffer from unnaturally dense forest stands and underbrush. This condition is a result of fire suppression. Wildlife habitat has been heavily modified compared to what existed prior to the implementation of fire suppression. Open canopy forests and interior grassland habitats have been reduced (Fifteenmile Subbasin Assessment). Meanwhile, the increased fuel loads create a hazard of catastrophic fire. Catastrophic fires have, in the past, become sources of increased sedimentation and flooding instream. The Schoolmarm Fire of 1967, for instance, created such a sediment load in South Fork Mill Creek that the City of The Dalles was unable to use the stream for drinking water supply for several years. This event led to the development of the Municipal Watershed Management Plan, in which the City and the Forest Service collaborate to manage the South Fork Mill Creek Watershed specifically for forest health and water quality protection.

Most upland conservation projects on forestland have the primary goal of reducing the risk of catastrophic fire, with a secondary goal of providing open canopy wildlife habitat in the pine/oak zones. Upland conservation projects in forested lands have been conducted by the Forest Service on federal lands and by the Oregon Department of Forestry (ODF) on private lands. To a lesser extent, Wasco County SWCD has provided funds for forestland conservation as well.

The US Forest Service is guided by the Northwest Forest Plan, which emphasizes forest health practices. Timber harvest prescriptions follow selective cutting regimes intended to mimic the role of fire in the landscape and thus reduce the risk of catastrophic wildfire or insect infestations. The same approach is used by the City of The Dalles in the South Fork Mill Creek Watershed, which is managed in cooperation with the Forest Service. In addition to harvest prescriptions, the Forest Service has also emphasized road obliteration as a method of reducing erosion and runoff, and to limit public access to sensitive areas.

ODF has used several programs and grants to assist private landowners in applying the same sort of forest health practices. For instance, the Defensible Space Grants, funded by the National Fire Plan, have provided up to 80% cost-share to private landowners to thin tree densities to 15-foot spacing, and to remove underbrush, thereby reducing the threat of catastrophic fire. This practice is also believed to provide wildlife habitat more similar to historic (pre-fire suppression) conditions. These grants have focused on the Sevenmile Hill area between Mosier and Chenowith Creek Watersheds, in order to protect the high density of rural residential development in that area. The program has been quite popular

with landowners in the eligible area, particularly in the wake of the Sheldon Ridge Fire, which burned 12,000 acres in summer 2002.

Other private forestlands in the Fifteenmile Subbasin have been eligible for the Forestland Enhancement Program (FLEP) and the East Cascades Bark Beetle Mitigation Program, both administered by ODF. FLEP has not yet been funded since the passage of the 2002 Farm Bill that created it. As of April 2004, the Office of Management and Budget had not released funding for FLEP in 2004. The East Cascades Bark Beetle Mitigation Program, while not as well funded as the National Forest Plan, has provided funding for forest health practices throughout the forested rural portions of the subbasin.

Wasco County SWCD provided funds for reforestation, biological control and erosion control, following the Sheldon Ridge Fire. Funding was provided by OWEB, as well as USDA.

4.3.6 Urban Lands

The cities in the Subbasin have conservation responsibilities in two main areas—their urban areas, and in any watershed lands that they own and manage. Mosier gets its drinking water from wells and does not own any watershed lands. Dufur currently gets its water from wells, but does have a water right on Fifteenmile Creek, and has an existing intake structure, and owns lands abutting the National Forest, which they manage for forest health, income and water quality. The City of The Dalles gets its water from South Fork Mill Creek and Dog River (tributary of Hood River). They own the stream corridor up to the National Forest boundary, and actively manage their municipal watershed for forest health, income and water quality.

Each of the three cities in the Subbasin manages their sewer systems in accordance with discharge permits issued by the Department of Environmental Quality.

The Dalles and Dufur both have storm sewer systems, although Dufur's storm sewer only covers the downtown area. Mosier has no storm sewer system.

The City of Dufur provides for a 20-foot riparian buffer in its zoning ordinances. It also takes note of wildlife habitat in its Comprehensive Plan, which notes that upland areas outside of the residential zone are mostly used for agriculture and provide little wildlife value (City of Dufur Zoning Ordinance, June 1988 and Comprehensive Plan Update, July 2003).

The City of The Dalles has no zoning areas within the urban area specifically for riparian or wetland protection (The Dalles City Planning, 12/4/03).

The City of Mosier noted that all wetlands within the City are zoned Open Space. In addition, the City of Mosier noted that their flood zone ordinance protects water quality (Jeanne Reeves, City of Mosier, 12/05/03).

4.3.7 Research, Monitoring, and Evaluation Activities

Table 4.7 Recent and Ongoing Monitoring Efforts in the Fifteenmile Subbasin

Organization	Parameters	Location	Start/End Date	STATUS
City of The Dalles	Drinking Water Quality—turbidity, temperature, pH, coliform, others	South Fork Mill Creek	1969--	Ongoing
DEQ/SWCD/ODFW	Suspended Sediment & Turbidity	Fifteenmile Watershed	2000—2003	Completed
DEQ/SWCD	Fifteenmile Forward Looking Infrared Project—surface temperature	Fifteenmile Watershed	2002	Completed
DEQ	Temperature Monitoring for TMDL	Fifteenmile, Eightmile, Ramsey, Fivemile	1999--2002	Completed
DEQ	Temperature Monitoring for TMDL	Threemile, Mill, Chenowith, Mosier, Rock	1999-2000	Completed
Mosier Watershed Council	Bacteria	Mosier Creek, near mouth	August 2002	Completed (one-time effort)
Mosier Watershed Council	Turbidity	Mosier Creek	Winter 2002-2003	Completed
ODFW	Temperature	Fifteenmile Watershed	1980's--	Ongoing
ODFW	Fish Habitat	Fifteenmile Watershed	2002-2003	Complete
ODFW	Fifteenmile Smolt Trapping (BPA #1993-040-01)	Fifteenmile Mouth		Completed, then restarted as new project
ODFW/USFS	Fifteenmile Smolt Migration (BPA #2001-020-00))	Fifteenmile Watershed, Private Lands	2003--	Ongoing
The Dalles Area Watershed Council	Turbidity	Mill Creek, Chenowith Creek	Winter 2002-2003	Completed
USFS	Fish Habitat	Fifteenmile Watershed, Federal Lands	1998--	Ongoing
USFS	Temperature	Mt. Hood National Forest	1988--	Ongoing

Table 4.7 Recent and Ongoing Monitoring Efforts in the Fifteenmile Subbasin

Organization	Parameters	Location	Start/End Date	STATUS
USFS	Sediment Embeddedness	Mount Hood National Forest	early 1990's	Ongoing
SWCD	Temperature	Fifteenmile, Mill	2000--	Ongoing
SWCD	Groundwater Levels	Mosier Valley	2004?	Proposed
Wy'East RC&D, DEQ	Pesticides	Mill	2002--	Ongoing

Fifteenmile Watershed itself has been extensively monitored for the purposes of developing Total Maximum Daily Loads (TMDLs) and to manage the winter steelhead run in that watershed. Parameters that have been monitored in the Fifteenmile Watershed include fish habitat, water temperature, and sediment.

Mill Creek has been monitored for agricultural pesticides, temperature, and on the South Fork, for other water quality parameters relating to drinking water quality. Entities that have studied parts of the Mill Creek Watershed include the US Forest Service, City of The Dalles, Soil and Water Conservation District, Oregon Department of Fish and Wildlife, The Dalles High School, Oregon Department of Environmental Quality, and Wy'East Resource Conservation and Development Board.

Samples have been collected of cutthroat trout in the South Fork of Mill Creek. These fish were found to be undersized and of poor body condition compared to cutthroat in more productive streams.

Other watersheds have not received the same amount of monitoring. DEQ conducted two years of temperature monitoring in Threemile, Mill, Chenowith, Mosier and Rock Creeks, in order to collect data for TMDL implementation.

4.4 Gap Assessment of Existing Protections, Plans, Programs and Projects

4.4.1. Gap Analysis of Limiting Factors

The Fifteenmile Subbasin Assessment identifies the following limiting factors in Fifteenmile Watershed:

- Key Habitat Quantity
- Sediment
- Habitat Diversity
- Low Flows
- Peak Flows
- Summer Water Temperature

- Channel Stability

To a lesser extent, food, dissolved oxygen and harassment were also noted as limiting factors in certain parts of the watershed.

The Subbasin Assessment identifies an urgent need to protect the upper third of the watershed, since these are almost the only reaches in which steelhead can survive to smolt stage. Restoration priorities consist of the stream reaches roughly in the middle one third of the watershed. Improved conditions in these middle reaches will expand the existing viable steelhead population and will conduct improved environmental conditions downstream.

In the other watersheds of the subbasin (Threemile, Mill, Chenowith, Mosier and Rock Creek), limiting factors were similar, but also included chemical pollutants in Threemile, Mill and Mosier Creeks, and groundwater overdraft in Mosier Creek.

Are there programs in place to address all of these factors?

Riparian buffer programs address channel stability, temperature, habitat quantity and diversity.

Instream structures address channel stability, and habitat quantity and diversity.

Pollution issues are being addressed in Mill Creek and Threemile, but not yet in Mosier.

The problem of groundwater overdraft in the Mosier Valley has not yet been resolved and represents an impending natural resource crisis in that area.

Upland conservation programs address wildlife habitat and hydrologic function. They therefore address peak flows and address low flows by increasing seasonal water storage in the soil. Because Fifteenmile and its tributaries are currently over-appropriated, considerable water conservation will be needed to increase stream flows. On the other hand, increased groundwater inputs will help reduce instream temperature.

Low flows have not been adequately addressed to date. Water in Fifteenmile and all of its tributaries is overallocated from May to October. Low flows are linked to loss of habitat, high temperatures, low dissolved oxygen, and possibly to other water quality issues in Fifteenmile Watershed. Low flow issues can only be addressed by programs aimed at reducing surface water withdrawals. A certain amount of progress can be made by improved irrigation efficiency, either on-farm or in irrigation ditches. Progress can also be made by improving enforcement of existing water rights and minimum instream flows.

Any significant improvements to flow levels in Fifteenmile Watershed will require a reduction in water withdrawals on the part of private irrigators. To be successful, any voluntary program must adequately compensate the landowners for lost income and income potential. It must also provide for an alternative use of the previously irrigated land, such as dryland farming, pasture, or forested riparian buffers. Weed management may become an issue if land use changes result.

4.4.2. Geographic Coverage of Riparian and Instream Conservation

Of the 242 stream miles of salmonid habitat in the Fifteenmile Subbasin, approximately 154 miles are protected by some form or another of riparian buffer program.

Approximately 87 stream miles of perennial fish habitat are currently unprotected by riparian buffers, including at least 59 miles of anadromous (steelhead, salmon and lamprey) habitat. The majority of this unprotected habitat is moderately to heavily impacted by roads and urban, residential or agricultural land uses.

Fifteenmile Watershed itself has the greatest coverage by percent of stream miles. Approximately 126 stream miles in the Fifteenmile Watershed are protected by some form of riparian buffer, either through the Northwest Forest Plan or the various programs available to private landowners. Only about 30 miles of anadromous habitat lack a forested buffer in the Fifteenmile Watershed.

EDT gave the highest protection priorities to Fifteenmile Creek upstream of the Dufur Intake, Eightmile upstream of Wolf Run, Ramsey Creek upstream of the National Forest boundary, and in Fivemile Creek upstream of North Fork and continuing into the Middle Fork.

In Fifteenmile Creek, the protection reaches begin upstream of the confluence of Fifteenmile and Ramsey Creek, and continue to the headwaters, including the small tributary Cedar Creek. Of the 15 miles in this reach, 7.6 are on the National Forest, including about 4 miles in the Badger Creek Wilderness. These stream miles will be protected consistent with the Northwest Forest Plan. Downstream of that point, 3.85 miles of the stream are owned by the Dufur Water Commission and managed in consultation with the Forest Service for water quality, and are currently the target of the Fifteenmile Riverkeeper Project, which aims to restore stream and floodplain functions using large wood and boulder emplacements, save water by piping the Orchard Ridge Ditch, and limit public access by closing part of the road that follows the floodplain up this canyon. A tract of private land sits in the midst of the Dufur Water Commission property. In consideration of the high priority for protection of this reach, this landowner has applied to enroll his riparian areas in the CREP program. His application is currently pending, awaiting technical assistance. Downstream of the Dufur Intake, another 4 miles of protection priority reaches flow through a number of private ownerships. At least half of these are enrolled in the ODFW buffer program.

On Ramsey Creek, 6.8 miles are included as protection priorities, from RM4.1 to RM10.9. The upper end of this reach is defined by the culvert barrier at Forest Road 4450. The Mount Hood National Forest covers this entire reach. Roughly the lower half of it was the object of a large stream/floodplain restoration project that finished in year 2001. Post project monitoring by the Forest Service documents responses by the stream to the restoration project.

On Eightmile Creek, 14.3 miles are included in the protection reaches, beginning upstream of Wolf Run Creek and continuing to the impassable culverts at Lower Eightmile Campground. The National Forest manages 7.7 miles of these protection reaches. Directly downstream of the Forest Service boundary, the next 2.7 miles of Eightmile Creek are protected until year 2015 by a 400 foot wide riparian buffer enrolled in the Conservation Reserve Enhancement Program. Another 1.6 miles is enrolled in the

ODFW buffer program. This leaves almost two miles not specifically managed for stream and riparian protection. This gap is owned by three separate landowners.

In the Fivemile Watershed, the protection priorities start in Fivemile Creek upstream of the confluence with the North Fork, and then continue up into the Middle Fork of Fivemile to the culvert barrier on Forest Road 4430. The 4.8 miles of the Middle Fork are entirely on the National Forest. The 3.8 miles of the mainstem are on private lands. The protection reach on mainstem Fivemile Creek is owned by 16 separate private landowners. None of this reach is enrolled in either USDA or ODFW riparian buffer programs.

In the Mill Creek Watershed, the Forest Service and the City of The Dalles protect 27 miles of salmonid stream, including 11 miles of anadromous habitat. Mill Creek Watershed has approximately 18.5 miles of anadromous habitat that is not protected by riparian buffers, much of which is impacted by urban, residential and agricultural land uses, and constrained by roads. North Fork Mill Creek includes 6.5 miles of stream that was identified by the assessment as a steelhead protection priority that is on private lands and not specifically managed for stream protection. This reach is paralleled by dirt roads along most of its length. Several culvert barriers and point sources of sedimentation have been identified in this reach.

Along Threemile Creek, 1.51 miles are protected by forested riparian buffers. None of the 4.5 miles of anadromous habitat are yet protected. Threemile Creek is impacted by roads, noxious weeds and both urban and agricultural land uses.

Chenoweth Creek has the potential to provide 3.5 miles of anadromous habitat. None of this area is officially protected, although, as noted previously, Northwest Aluminum has voluntarily fenced off 0.24 miles near the mouth.

Almost the entire 0.4 miles of anadromous habitat on Mosier Creek is protected as undeveloped wildland by the City of Mosier. Mosier Creek includes approximately 26 miles of stream habitat for cutthroat trout that is not protected by any sort of riparian buffer. Much of this riparian area is impacted by either roads or residential development.

The upper 6 to 7 miles of Rock Creek are owned by four landowners, all of whom utilize the land for commercial timber management. One of these owners is the Hood River County Department of Forestry. All of these lands are subject to the Oregon Forest Practices Act, which is administered by the Oregon Department of Forestry. The Oregon Forest Practices Act specifies conifer basal area retainage requirements within approximately one mature tree height along fish bearing streams. Protection of Rock Creek currently relies entirely on effective enforcement of these standards. Upper Rock Creek would lose this protection if the lands were subdivided and converted to rural residential land use, a process that has already taken place in the lower 2 miles.

4.4.3. Geographic Coverage of Upland Conservation

Determining the geographic coverage of upland programs is more difficult than determining the geographic coverage of riparian and instream programs for a number of reasons.

One reason is that conservation programs may be theoretically available throughout a certain area, but still be inadequate to meet the demand. In such cases, funding may be applied unevenly to different geographic areas or to different land uses.

For example, the Environmental Quality Incentives Program (EQIP) can be used to fund management practices in any agricultural or rangeland. However, funding is highly competitive. Applications are ranked and evaluated based on a locally developed procedure intended to compare total environmental benefits of each proposal. Out of 240 applications in 2002, only 17 were funded. It has been very difficult to get funding through EQIP for rangeland practices or for agronomic practices on non-highly-erodible lands. In 2002, no EQIP funds were available for rangeland conservation, nor for any practices in the Mosier Valley.

Weather data is available throughout the Subbasin to orchardists wishing to implement integrated fruit production plans. Due to limited funding, the coverage is much lighter in the Mosier Valley than in other areas of the Subbasin.

Similarly, all private forest landowners are eligible to apply for assistance through the Forestland Enhancement Program from Oregon Department of Forestry (ODF). However, the limited funding for the Forestland Enhancement Program does not meet the demand. Therefore, the only part of the subbasin where ODF has sufficient funding to meet the demand for assistance is in the Sevenmile Hill and Chenoweth Creek areas, which are targeted by the Defensible Space Grants from the National Fire Plan.

4.4.4. Geographic Coverage of Research and Monitoring Efforts

To some extent or another, monitoring efforts have been undertaken in all major streams in the subbasin. However, the intensity of monitoring efforts varies across the watershed from multiyear, high quality monitoring, to one-time volunteer sampling efforts.

Wasco County SWCD, on behalf of the three watershed councils in the subbasin, has completed watershed assessments for the entire Fifteenmile Subbasin, using the methods outlined in the Oregon Watershed Assessment Manual. The Forest Service has completed watershed analyses in “Mile Creeks”—Fifteenmile, Eightmile and Fivemile—and in Mill Creek.

Fifteenmile Watershed has received the most intensive monitoring efforts. Fifteenmile Creek and its major tributaries have been the subject of monitoring by the Forest Service, ODFW, SWCD, DEQ, and various school groups. Fifteenmile Watershed has been monitored for smolt migration, spawning, temperature, turbidity, and habitat quality. Despite this, unanswered questions remain regarding the effect that past restoration efforts have had on habitat quality.

A single grab sample was taken in Fifteenmile for organophosphate pesticides in 2003. The sample tested positive for malathion.

After Fifteenmile, the next most studied watershed in the Subbasin is Mill Creek. The City of The Dalles monitors drinking water quality at its intake on South Fork Mill Creek. DEQ, with assistance from Wasco Co. SWCD, has monitored for temperature since 1999. DEQ has monitored since 2002 for pesticides and macroinvertebrate communities with the cooperation of the Wasco County Fruit and Produce League and

DRAFT—Fifteenmile Subbasin, Inventory of Existing Activities

Wy'East RC&D. The Dalles Area Watershed Council monitored in 2003 for turbidity at one site near the mouth of Mill Creek.

Mill Creek has not been studied for habitat quality, steelhead population or lamprey population.

Threemile Creek, Chenowith Creek, Mosier Creek and Rock Creek were monitored for two years for temperature by DEQ, as part of the TMDL process. All four streams were added to the Oregon 303(d) List of Water Quality Limited Waterbodies in 2002.

Both Mosier and Chenowith Creeks were monitored for turbidity through the winter of 2002-2003. These efforts were in response to the Sheldon Ridge Fire that occurred in the headwaters of both creeks.

Other than the efforts noted above, all monitoring efforts have been one-time volunteer efforts that provide only isolated point measurements.