FIFTEENMILE CREEK SUBBASIN FISH MANAGEMENT PLAN

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INTRODUCTION

This plan encompasses the flowing waters of the Fifteenmile Creek drainage. It was adapted from the Northwest Power Planning Council's (NPPC) Fifteenmile Creek Subbasin Plan, which in turn was developed by the Oregon Department of Fish and Wildlife (ODFW) and the Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSR) with the help of three committees. The Public Advisory Committee, representing non-treaty user groups and other interested public, helped identify a range of objectives and actions for managing the fishery resources in the Fifteenmile Creek drainage. The Technical Committee, composed of representatives of state and federal fishery agencies, tribes, land and water management agencies, and utilities, developed specific fishery and other technical information and described and assessed potential actions for managing the fisheries. The Fish Management Committee, composed of representatives of Oregon Department of Fish and Wildlife and the Warm Springs Tribe, selected a preferred range of objectives and actions. The Northwest Power Planning Council's Fifteenmile Creek Subbasin Plan was one of 31 subbasin plans incorporated into the NPPC's Integrated System Plan in an attempt to double the run sizes of anadromous salmonids in the Columbia River Basin.

Members of the Public Advisory Committee and their affiliations are:

Cal Cole, Oregon Trout
Frank Groves, public
Jerry Bryan, Farmers Irrigation District
Ken Morikado, Northwest Steelheaders
John Benton, public
Lindsay Ball, public
Dave McCann, public
Greg Short, public
Earl Fowler, public

Members of the Technical Committee and their affiliations are:

Dave Heller, U.S. Forest Service (USFS)
Bruce Eddy, Pacific Power and Light (PP&L) Company
Rob Tracey, Soil Conservation Service (SCS)
Larry Rasmussen, U.S. Fish and Wildlife Service (USFWS)
Nick Iadanza, National Marine Fisheries Service (NMFS)
Mark Fritsch, Fisheries Biologist, Natural Resources Department, Warm Springs Tribe.

Members of the Fish Management Committee are Mark Fritsch, representing the Warm Springs Tribe; and Jim Newton and Erik Olsen, representing the Oregon Department of Fish and Wildlife.

This plan was developed from the Northwest Power Planning Council's Fifteenmile Creek Subbasin Plan. To meet the Departments needs as a management document sections on resident fish and angling access were added. Other modifications include format changes and development of separate management alternatives for each section of the plan.

GENERAL CONSTRAINTS

Federal, state, tribal, and city agencies own or manage lands in the Fifteenmile Creek drainage. How these lands are managed either directly or indirectly impact populations of anadromous salmonids. In most instances, however, the Oregon Department of Fish and Wildlife can only act in an advisory role when each of the various agencies determine how its holdings should be managed. Land in the Fifteenmile Creek drainage is primarily managed for a variety of agricultural purposes.

U.S. Forest Service

The U.S. Forest Service (Mount Hood National Forest) manages approximately 45,500 acres of land in the Fifteenmile Creek drainage. Located in the Mount Hood National Forest are approximately 9.5 linear miles of a total of 54.5 linear miles of stream comprising Fifteenmile Creek; 10.5 linear miles of a total of 29.4 linear miles of stream comprising Eightmile Creek; 15.4 linear miles of a total of 41.85 linear miles of stream comprising the Fivemile Creek drainage; 7.1 linear miles of a total of 14.6 linear miles of stream comprising Ramsey Creek; and all four linear miles of Cedar Creek (Table 1). Eightmile, Ramsey, and Cedar creeks are tributaries to Fifteenmile Creek and Fivemile Creek is a tributary to Eightmile Creek.

Approximately 54 linear miles of stream, believed to be suitable as either spawning or rearing habitat for anadromous salmonids, are located on Mount Hood National Forest lands. Of the total available anadromous salmonid habitat located on U.S. Forest Service lands, approximately 18.4 linear miles (49 percent) are located in the mainstem of Fifteenmile, Eightmile, Fivemile, and Ramsey creeks and approximately 19.1 linear miles (51 percent) are located in other tributary streams (Table 1). The greater percentage of the suitable spawning and rearing habitat located in tributary streams is found in the Middle (7.1 linear miles) and South (eight linear miles) forks of Fivemile Creek.

Table 1. Linear miles of stream in the Fifteenmile Creek drainage that are managed by the United States Forest Service and the estimated linear miles of stream believed to be suitable as either spawning or rearing habitat for anadromous salmonids.

	Area	Miles of Stream	
		Forest Lands	Salmonid Habitat
Fifteenmile Creek	Mainstem	9.5	9.5
	Tributaries	4.0	4.0
Eightmile Creek[a]	Mainstem	10.5	1.5
	Tributaries	0.0	0.0
Fivemile Creek[b]	Mainstem	0.3	0.3
	Tributaries	23.1	15.1
Ramsey Creek[a]	Mainstem	7.1	7.1
	Tributaries	0.0	0.0
Total	Mainstem	27.4	18.4
	Tributaries	27.1	19.1

a Tributary to Fifteenmile Creek.
b Tributary to Eightmile Creek.

The U.S. Forest Service has developed a land and resource management plan (Mt. Hood Plan, 1990) designating how Forest Service lands in the Fifteenmile Creek drainage will be managed for the next 10 years. The plan designates 19,643 acres (41 percent) as management type "B6", which are lands that will be managed to maintain or improve watershed conditions for the sustained, long term production of fisheries and good quality water. Approximately 1,694 acres (3.5 percent) are designated as wilderness area (Table 2).

To minimize the impact logging practices have had or will have on anadromous salmonids in the Fifteenmile Creek drainage, the U.S. Forest Service has improved management practices and technology in road planning, road construction, and logging methods. Managers have also implemented habitat improvement projects to restore fish habitat that has been lost or degraded as the result of a variety of logging related activities on Forest Service lands. Log weirs and rock structures have been placed in Eight mile and Ramsey creeks in an attempt to improve habitat in the primary spawning and rearing areas for winter steelhead. Managers have also removed several impediments to

upstream migrants.

The land and resource management plan that will direct for the next 10 years (1990-2000 the management of national forest lands in the Fifteenmile Creek drainage (U.S. Forest Service 1988), is based on U.S. Forest Service policies and federal legislation (the Multiple Use and Sustained Yield Act, the National Forest Management Act, the Wilderness Act, the National Environmental Policy Act, the Pacific Northwest Electric Power Planning and Conservation Act, and the Endangered Species Act). U.S. Forest Service guidelines for protecting soil and water resources meet or exceed requirements established in the Oregon Forest Practices Act.

Two memoranda of understanding jointly agreed upon by the Oregon Department of Fish and Wildlife, the Pacific Northwest Region of the U.S. Forest Service, and the Mount Hood National Forest describe the respective responsibilities of the agencies and the necessary coordination to achieve mutual goals for fish and wildlife resources.

Table 2. Current estimates of the number of acres allocated to each forest management area for the Fifteenmile Creek drainage.

Management Area	Code	Previous Management	Current Management
Special Emphasis Watershed	(B6)	--	19,643
Timber Emphasis	(C1)	22,800	1,865
Scenic Viewshed	(B2)	7,000	5,297
Woodpecker/Pinemartin	(B5)	3,000	2,386
General Riparian	(B7)	3,000	5,969
Wilderness	(A2)	3,000	1,694
Spotted Owl	(A8)	3,000	7,774
Res. Nat. Area	(A3)	1,500	804
Special Interest	(A4)	1,500	0
Key Site Riparian	(A9)	500	398
Outdoor Education	(A12)	200	76
Pine/Oak	(B4)	0	0

The Confederated Tribes of the Warm Springs Reservation of Oregon

The entire Fifteenmile Creek drainage is located within the boundary of land ceded to the United States by the seven bands of Wasco- and Sahaptin-speaking Indians whose representatives and head men were signatories to the Treaty with the Tribes of Middle Oregon of June 25, 1855 (12 Stat. 963). The Confederated Tribes of the Warm Springs Reservation of Oregon is the legal successor in interest to the Indian signatories to the treaty.

Article I of the treaty describes the 10-million-acre area of eastern Oregon ceded by the tribes to the United States and sets out the boundaries of the Warm Springs Indian Reservation. Article I also contains the express reservation by the tribes to "the exclusive right of taking fish in the streams running through and bordering said reservation...and at all other usual and accustomed stations, in common with citizens of the United States."

While Fifteenmile Creek is not a stream bordering or running through the Warm Springs Indian Reservation to which the tribe reserved an exclusive fishing right, it is a stream that tribal members and their forefathers traditionally fished. Thus, Fifteenmile Creek is a stream system to which the tribe's treaty fishing rights attach at all usual and accustomed fishing places. The tribe's treaty rights include not only a harvest allocation right to take up to 50 percent of the harvestable fish passing the tribe's usual and accustomed fishing places, but it further includes a legal right to sufficient water quality and quantity to maintain the fishery resource.

City of Dufur

The city of Dufur currently administers approximately 730 acres of land that are located between RM 39 and RM 46 on the mainstem of Fifteenmile Creek (Table 3). Lands are located above one of the city's municipal water sources and are managed to maintain the watershed. A limited harvest of timber was considered at one time, but it was decided that there were insufficient numbers of trees to make it economically feasible.

Table 3. Location of lands owned by the city of Dufur in the Fifteenmile Creek drainage.

Township	Range	Lot Number(s)	Acres
2S	12E	Sec. 15	351.72
2S	12E	Sec. 20,21	270.89
2S	12E	Sec. 19	39.04
2S	11E	Sec. 24	75.30

Division of State Lands

The Division of State Lands (DSL) is responsible for regulating the removal and filling of materials, such as gravel, in waterways. Permits are required for projects involving 50 cubic yards or more of material. Applications for permits are reviewed by the Oregon Department of Fish and Wildlife. The Oregon Department of Fish and Wildlife may request protective measures or denial of the permit based on impacts of the project on fish production. However, the final decision on the permit is made by the Division of State Lands.

U.S. Bureau of Land Management

The Prineville District of the Bureau of Land Management (BLM) administers approximately 600 acres of land in the Fifteenmile Creek drainage (Table 4). These lands are largely second-growth forests managed primarily for timber production. Forests are managed under guidelines established in the Two Rivers Resource Management Plan. The Bureau of Land Management and the Oregon Department of Fish and Wildlife have a cooperative agreement concerning mutual goals for fish production and habitat management. BLM guidelines for protecting soil and water resources meet or exceed requirements established in the Oregon Forest Practices Act.

Table 4. Location of lands owned by the Bureau of Land Management in the Fifteenmile Creek drainage.

Township	Range	Section Number[a]	Acres
1S	12E	Sec. 17	40
1S	12E	Sec. 19	40
1S	12E	Sec. 31	200
1S	12E	Sec. 32	80
1S	11E	Sec. 13	40
2S	12E	Sec. 20	40
1S	13E	Sec. 7	40
1S	12E	Sec. 1	40
1S	13E	Sec. 6	80

a Represents the section number in which the lands are primarily centered.

Oregon Water Resources Department and Water Resources Commission

The state Water Resources Commission regulates water use in the subbasin. With respect to the use of surface water, the commission has issued Certificates of Water Right for a variety of uses. In the Fifteenmile Creek drainage, surface water is primarily diverted for irrigation (Table 5). The total amount of water allotted to this use is approximately 17,763 acre-feet or 81 percent of the total amount of surface water allotted for diversion in the Fifteenmile Creek drainage. Other uses have been allotted approximately 4,080 acre feet of water. Except for the estimate of municipal use, which is an estimate of current use, these estimates are the maximum amount of water that can legally be diverted. Because of the various demands placed on the resource, the actual quantities diverted, used, or consumed may be less than the values listed as the priorities for the water resource or the availability of surface water for diversion change throughout the year.

Two water rights exist in the Fifteenmile Creek drainage that allow withdrawal of water for power production. The two water rights allow a maximum diversion rate of 4.66 cfs for hydroelectric production. Neither of the two water rights are currently being used.

To provide adequate flow for juvenile and adult salmonids

minimum streamflows were adopted in the mainstem of Fifteenmile Creek (Table 6). The priority date for the minimum streamflow in Fifteenmile Creek is November 3, 1983. Although a minimum streamflow was established in Fifteenmile Creek, it does not have the legal status of an instream water right. Minimum stream flows are an administrative rule that can be changed by the Oregon Legislature at any time, while instream water rights are a legal right generally associated with property ownership. Oregon Senate Bill 140, passed during the 1987 Legislature, requires the Water Resources Commission to convert all minimum streamflows to instream water rights. The water rights will belong to the Oregon Department of Fish and Wildlife and will be held in trust for the people of the state of Oregon.

Northwest Power Planning Council

The Pacific Northwest Electric Power Planning and Conservation Act, passed by Congress in 1980, directs the Northwest Power Planning Council to develop a program to protect and enhance fish in the Columbia Basin affected by hydroelectric development. The agency that would ultimately be funding these projects is the Bonneville Power Administration (BPA). In the Fifteenmile Creek drainage, BPA is currently funding a variety of projects designed to improve spawning and rearing habitat.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service is the primary federal agency responsible for the conservation, protection, and enhancement of migratory birds, endangered species, certain marine mammals, and resident and anadromous fish. This agency protects nesting, migrating, and feeding habitat of waterfowl and other migratory birds. Over 400 national wildlife refuges have been established nationwide to help carry out these objectives. To protect and enhance fish and wildlife habitat, the U.S. Fish and Wildlife Service reviews land management plans and permit applications for activities such as timber harvest, stream alteration, dredging and filling in wetlands, hydroelectric projects, and nuclear power plants among others. The U.S. Fish and Wildlife Service's primary emphasis in the Hood River drainage has been to review applications to the U.S. Army Corps of Engineers for permits to alter stream channels.

To further the production of salmon and steelhead in the Columbia River, the U.S. Fish and Wildlife Service currently operates numerous national fish hatcheries located throughout the basin. At present, there are no USFWS-funded hatchery facilities in the Hood River drainage.

Table 5. Summary of water rights[a] for the Fifteenmile Creek drainage.

Use	Acre Feet	Cubic Feet Per Second			Number[c]
		Jan 1 - Apr 14	Apr 15 - Sept 30[b]	Aug 1 - Dec 31	
Irrigation	17,763	--	53.31	--	190
Power	3,374	4.66	4.66	4.66	2
Industrial/ manufacturing	514	.71	.71	.71	2
Agriculture	84	--	.25	--	1
Domestic	46	.06	.06	.06	26
Fire protection	30	--	.09	--	1
Municipal	21[d]	--	.06	--	5
Livestock	10	--	.03	--	20
Recreation	1	--	.003	--	1
Total	21,843	5.43	59.173	5.43	210[e]

a Includes only those applications that have been certified by the Department of Water Resources.
b Irrigation season.
c Estimate represents the total number of certificates in which a given use type was specified on a certificate of water right.
d Estimate represents current usage by the city of Dufur, the only municipality in the Fifteenmile Creek drainage withdrawing surface water.
e Estimate represents the total number of certificates of water right.

Table 6. Minimum streamflow in the mainstem of Fifteenmile Creek from USGS stream gage 14104500 (RM 23.5) to the mouth.

Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Priority date
Fifteenmile Creek	4	4	13	20	20	20	13	13	4	4	4	4	11/ 3/83

National Marine Fisheries Service

The National Marine Fisheries Service reviews federal projects (such as the Corps') and permits (such as the Federal Energy Regulatory Commission's) to evaluate their impact on fish and wildlife.

Oregon Department of Forestry

The Oregon Department of Forestry is responsible for regulating commercial timber production and harvest on state and private lands. Department of Forestry guidelines for protecting soil and water resources meet or exceed requirements established in the Forest Practices Act. Those rules were modified in April 1987 to improve protection of riparian habitat, to broaden the waters classified for fish production, and to provide additional protection to small tributaries important for maintaining cool water downstream during summer.

Department of Environmental Quality

The Department of Environmental Quality is responsible for managing water quality and enforcing state water quality standards. There are no special water quality standards for the Fifteenmile Creek drainage.

Department of Land Conservation and Development, and the Land Conservation and Development Commission

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

HABITAT

Background and Status

Basin Description

The Fifteenmile Creek drainage, located in north central Oregon, heads in the Mount Hood National Forest just east of Mount Hood. Fifteenmile Creek flows in a northeast direction, out of the timbered higher elevations, before circling north, through the dryland wheat country southeast of The Dalles, to enter the Columbia River at approximately River Mile 192. The Fifteenmile Creek drainage is bounded on the west by the Mosier, Mill, Threemile, and Hood River drainages; on the south by the White River drainage; and on the east by the Deschutes River drainage.

The Fifteenmile Creek drainage encompasses approximately 373 square miles. The mainstem of Fifteenmile Creek rises approximately 6,140 feet in the 49 miles from the mouth to its headwaters on Lookout Mountain. Fifteenmile Creek from the mouth to RM 43.6 is a relatively low gradient stream averaging approximately a 0.6 percent grade (Table 7). From RM 43.6 to its headwaters, located approximately 5.4 miles upstream, the stream gradient increases markedly. The only other tributary streams with any significant year-round flow generally follow a similar pattern (Table 7). Average stream gradient in the lower 25.5 miles of Eightmile Creek and all of Ramsey and Fivemile creeks is less than or equal to a 2 percent grade (Table 7). Stream gradient in the upper 3.9 miles of Eightmile Creek and in the North, Middle, and South forks of Fivemile Creek is generally classified as moderate to high, averaging approximately 6.7 percent, 2.2 percent, 2.9 percent, and 3.4 percent, respectively (Table 7).

The flora of the basin is dominated by fir and pine coniferous forests in the headwaters, and grasses, perennial forbs, oak, and widely scattered pine woodlands bordering on agricultural lands at middle and lower elevations. The lower half of the basin is generally dominated by dryland cropland and open range.

The geology of the area consists of numerous outpourings of basaltic lava. These lavas are known as the Columbia River basalts. Numerous ash falls and some ash flows are contained in the formation (Wheeler 1975). The amount and composition of the basal flows create a situation that is impermeable to water. Hydrologically, the discharge pattern is characterized by a high spring runoff from winter snowmelt combined with spring rains.

Table 7. Elevation change and average gradient in selected reaches of stream in the Fifteenmile Creek drainage.

Stream Reach	Reach (RM)a	Elevation Change	Gradientb (ft/mi)	Gradientb (%)
Fifteenmile Creek	0 - 3.2	160	50	0.5
	3.2 - 30.7	1,000	36	0.4
	30.7 - 43.6	1,080	84	0.9
	43.6 - 49.0	3,900	722	7.9
Ramsey Creek	0 - 8.0	1,320	165	1.8
	8 - 14.6	1,220	185	2.0
Eightmile Creek	0 - 12.8	720	56	0.6
	12.8 - 25.5	1,940	152	1.7
	25.5 - 29.4	2,400	615	6.7
Fivemile Creek	0 - 2.5	200	80	0.9
	2.5 - 18.8	1,760	108	1.2
Fivemile Creek, N. Fk.	0 - 8.0	1,620	202	2.2
Fivemile Creek, M. Fk.	0 - 6.7	1,780	266	2.9
Fivemile Creek, S. Fk.	0 - 7.1	2,220	313	3.4

a Reaches selected in each tributary stream encompass the mouth to the headwaters of the respective stream.

b Average estimate.

The soils of the Fifteenmile Creek drainage have been classified into four general categories:

1. Deep, moderately sloping to steep soils on uplands and terraces.

   These soils are on uplands and old terraces in the northern part of the survey area along the Columbia River and its tributaries.

2. Shallow to deep, nearly level to steep soils on uplands.

   These soils are in the eastern part of the survey area in the Columbia District, Tygh Ridge, and Juniper Flat area. They are well drained soils that formed mostly in loess, volcanic ash, and residuum weathered from basalt. Slopes range from 0 percent to 50 percent. Elevation ranges from 300 to 3,600 feet. The average annual precipitation ranges from 0 to 16 inches, and the average annual air temperature ranges from 45 degrees Fahrenheit to 52 F. The frost-free period is 100 to 170 days at 32 F and 150 to 210 days at 28 F.

3. Shallow and moderately deep, moderately steep to very steep soils on uplands.

   These soils are on uplands in the eastern part of the survey area along the Deschutes River, Fifteenmile Creek, and their tributaries.

4. Shallow to deep, nearly level to very steep soils on foot slopes of the Cascade Mountains

   This group of soils is in the western part of the survey area. They are loam, stony loam, gravelly loam, and very cobbly loam soils that formed in loess, volcanic ash, and in colluvium weathered from andesite and sandstone sediment. Slopes range from 1 percent to 70 percent. Elevation ranges from 500 feet to 3,600 feet. The average annual precipitation ranges from 14 inches to 30 inches, and the average annual air temperature ranges from 42 F to 50 F. The frost-free period is 50 to 150 days at 32 F and 90 to 200 days at 28 F.

   The three associations in this group make up about 31 percent of the survey area (Green 1982).

The Fifteenmile Creek drainage is typified by light annual total precipitation and somewhat extreme air temperatures in both summer and winter. Prevailing winds primarily occur from the west although easterly winds often prevail along the Columbia River Gorge in December and January. Annual precipitation at

selected sampling sites ranged from 6.37 inches to 22.62 inches at The Dalles (Table 8). Approximately 70 percent to 80 percent of the precipitation falls from November through March and from 5 percent to 10 percent from June through August (Green 1982). The rest is fairly evenly divided between April and May and September and October (Green 1982).

Water Resources

Fifteenmile Creek is generally characterized as having moderate to low streamflow. Mean monthly flow at RM 23.6 has ranged from a low of 4.09 cubic feet per second (cfs) for August to a high of 103.09 cfs for February. Mean monthly minimum flow at RM 23.6 has ranged from 1.68 cfs for August to 59.25 cfs for February (Table 9).

Water quality data for the Fifteenmile Creek drainage are presented in Table 4. The Fifteenmile Creek drainage is characterized as having relatively productive water with moderate to high biomass potential. This is generally reflected by the relatively high estimates of specific conductance, total alkalinity, and sulfate (Table 10). By comparison, estimates for the Fifteenmile Creek drainage are somewhat higher than those observed in the Hood River drainage which is generally characterized as having relatively unproductive water.

The existing water rights for the Fifteenmile Creek drainage are summarized in Part III (see Oregon Water Resources Department and Water Resources Commission). Principal consumptive uses of surface water are irrigation and municipal. Non-consumptive uses include fish protection.

Table 8. Annual precipitation (inches) at The Dalles[a] and Dufurb, 1937-1987.

Year	The Dalles	Dufur
1937	19.26	--
1938	11.87	--
1939	6.37	--
1940	15.50	--
1941	11.65	--
1942	15.65	--
1943	16.17	--
1944	7.83	--
1945	14.52	--
1946	11.59	--
1947	14.37	--
1948	20.53	17.10
1949	10.12	8.16
1950	20.82	17.33
1951	18.00	14.02
1952	21.82	10.01
1953	18.96	14.65
1954	12.06	12.07
1955	16.47	13.65
1956	13.32	12.24
1957	15.15	13.42
1958	15.61	12.65
1959	8.96	8.86
1960	15.90	13.08
1961	18.46	14.73
1962	13.61	11.69
1963	11.40	12.15
1964	17.69	--
1965	10.90	10.15
1966	14.47	13.06
1967	8.43	7.09
1968	16.19	14.09
1969	10.72	10.92
1970	17.63	11.98
1971	13.69	10.82
1972	13.42	10.00

(continued)

Table 8 continued.

Year	The Dalles	Dufur
1973	17.65	13.68
1974	12.75	10.98
1975	18.59	13.67
1976	6.98	7.54
1977	12.56	11.43
1978	12.53	12.84
1979	12.70	12.91
1980	19.68	17.36
1981	17.12	15.76
1982	15.34	13.34
1983	22.62	20.20
1984	14.20	13.47
1985	7.75	9.33
1986	15.78	12.94
1987	14.25	--
Mean	14.50	12.62
Min	6.37	7.09
Max	22.62	20.20

a Source: Wasco Rural Fire Department, The Dalles, Oregon.
b Source: Oregon State Climatologist, Oregon State University, Corvallis, Oregon.

Table 9. Mean monthly discharge (cfs) for Fifteenmile Creek at RM 23.6, USGS Station 14104500, 1970-1973.

Month	Discharge	Month	Discharge
January	153	July	13
February	96	August	4
March	103	September	5
April	45	October	6
May	38	November	10
June	42	December	25

Table 10. Mean estimate of various water quality parameters measured in the Fifteenmile Creek drainage 1986-1988 (Oregon Department of Fish and Wildlife, unpubl. data). Samples were taken at various sites located throughout the drainage.

	Date	N	Mean	95% C.I.	Range
PH (Standard units)	9/10-24/86	13	7.99	+_ .29	7.10 - 8.98
	11/ 3-18/86	15	7.73	+_ .17	7.30 - 8.43
	3/20-26/87	16	7.79	+_ .25	7.10 - 8.75
	7/20/87	5	6.24	+_ .88	5.60 - 7.20
	5/ 2-24/88	10	7.55	+_ .24	7.30 - 8.40
Specific conductance (micromho)	9/10-24/86	12	143	+_ 51	58 - 340
	11/ 3-18/86	15	165	+_ 57	71 - 345
	3/20-26/87	16	34	+_ 8	12 - 64
	7/20/87	5	52	+_ 5	50 - 59
	5/ 2-24/88	10	91	+_ 38	44 - 195
Total alkalinity (mg/L of CaCO3)	9/10-24/86	13	70	+_ 26	24 - 179
	11/ 3-18/86	15	77	+_ 21	29 - 148
	3/20-26/87	16	45	+_ 12	24 - 100
	7/20/87	--	--	--	--
	5/ 2-24/88	10	57	+_ 25	26 - 125
Sulfate (mg/L)	9/10-24/86	13	3.3	+_ 1.8	0 - 9.0
	11/ 3-18/86	15	4.3	+_ 2.1	0 - 13.0
	3/20-26/87	12	6.0	+_ 1.0	4.0 - 10.0
	7/20/87	2	2.0	+_ 8.6	0 - 4.0
	5/ 2-24/88	10	4.9	+_ 2.4	2.0 - 11.0

Land Use

The U.S. Forest Service is the primary land manager, administering approximately 19 percent (45,500 acres) of the Fifteenmile Creek drainage. The primary use is for timber production. An outline of the various federal and state agencies and municipalities managing land in the Fifteenmile Creek drainage is provided in Part III.

Private lands are primarily used for a variety of agricultural purposes, including grain production; livestock grazing; and hay, fruit, and vegetable production. Dryland farming is the dominant type of agriculture with irrigated farming playing a minor role (Table 11). Estimates were obtained in 1965 by the Department of Water Resources and, although acreages have undoubtedly changed since then, it is felt that

estimates generally reflect the current agricultural use of lands in the Fifteenmile Creek drainage.

Development of lands for agriculture has reduced or removed riparian vegetation, increased water temperature, increased sediment loading, and decreased the ability of the watershed to store water and regulate runoff. The associated increased frequency and magnitude of runoff events has caused channel shifts that interfere with agricultural practices and have prompted landowners to channelize stream courses and remove instream structures, thereby, further exacerbating the problem. Approximately 149,000 tons of sediment are produced annually in the Fifteenmile Creek drainage (Wheeler 1975) as the direct result of agricultural practices in the drainage.

Private lands were used extensively as rangeland in 1965 and current use is assumed to be similar to past estimates (Table 11). Public lands were used extensively as rangeland in 1965 as well, but current use is believed to be minimal.

The city of Dufur is the only municipality located in the Fifteenmile Creek drainage.

Table 11. Summary of land use in the Fifteenmile Creek drainage (State Water Resources Board 1965).

Item	Unit	Fifteenmile Creek	Eight mile Creek	Total
Farms	Number	100	60	160
GENERAL LAND USE:				
Forest land grazed	Acres	18,600	8,700	27,300
Forest land not grazed	Acres	16,400	20,000	36,400
Cropland	Acres	93,200	31,500	124,700
Rangeland	Acres	33,000	14,400	47,400
Other	Acres	2,100	1,100	3,200
Total watershed area	Acres	163,300	75,700	239,000
CROPLAND USE:				
Dryland	Acres	90,700	30,400	121,100
Irrigated land	Acres	2,500	1,100	3,600
Water use:				
Streamflow	Acres	2,400	440	2,840
Storage	Acres	--	360	360
Ground water	Acres	100	300	400
Method of application				
Sprinkler	Acres	1,700	760	2,460
Gravity	Acres	800	340	1,140

History and Status of Habitat

Production of game fish is limited in the Fifteenmile Creek drainage by various land-use practices that have a significant impact on the potential carrying capacity of the drainage. Much of the habitat in the lower drainage is unsuitable for anadromous salmonids and has been seriously degraded in areas that anadromous salmonids are known to spawn and rear. Degradation of anadromous salmonid habitat on private lands is directly related to intensive agricultural use and associated soil erosion.

Lands located in the middle and lower Fifteenmile Creek drainage are primarily used for dryland farming and open rangeland. Each of these two land uses have been responsible for the elimination and degradation of the riparian zone throughout much of the lower drainage; the loss of which has significantly reduced the capacity of the valley bottom to store water, retain sediment, and provide the cover necessary for maintaining cool water temperatures throughout the drainage. Because much of the area presently farmed or used as open range is also located on steep, highly erodible hills, significant amounts of topsoil are either deposited in the stream or are transported out of the drainage.

Logging practices on national forest lands located in the upper drainage have further exacerbated the problem by decreasing the ability of the upper watershed to store water and regulate runoff. Combined with the problems experienced in the middle and lower drainage, the frequency and magnitude of runoff events has generally increased and caused channel shifts at various locations throughout the drainage. The net effect of these and other land-use practices on the Fifteenmile Creek drainage has been the loss of a significant amount of spawning and rearing habitat historically available to anadromous salmonids.

During the spring and summer months, many areas of the Fifteenmile Creek drainage receive little precipitation. Because the drainage has little capacity to store water, much of the precipitation is lost either through evaporation or as runoff. Because significant amounts of surface water are also being withdrawn for commercial and non-commercial uses, many of the tributary streams are dry by late spring or early summer. In those areas of Fifteenmile Creek and its tributaries where perennial flows still occur throughout the summer months, streamflows commonly fall below the level deemed necessary to provide optimum rearing conditions for anadromous salmonids.

The Oregon Department of Fish and Wildlife, with funding from the Bonneville Power Administration, has eliminated the primary barriers to upstream and downstream migrants, fenced and introduced instream structure in several reaches of stream, and screened several irrigation diversions. Attempting to rectify

many of the remaining habitat related concerns will be costly due to the magnitude of the problem. Managers believe that various habitat improvement projects proposed for the middle to lower drainage would have the greatest potential for increasing both egg-to-smolt survival rates and the carrying capacity of the drainage. Projects include fencing, introduction of instream structure, and proper screening of all diversions.

With federal and state dollars, the Oregon Department of Fish and Wildlife and U.S. Forest Service have implemented a number of habitat improvement projects to improve spawning and rearing habitat for anadromous salmonids. Habitat improvement projects have either been completed or are currently being conducted in both Fifteenmile Creek and Ramsey Creek, a tributary to Fifteenmile Creek. Habitat improvement work has included the construction of rock weirs, log weirs, log deflectors, and rock deflectors at various sites throughout the project areas. The U.S. Forest Service also plans to place instream structures in Fifteenmile Creek.

Projects the Oregon Department of Fish and Wildlife has implemented have been designed to 1) improve passage of both upstream and downstream migrant salmonids, 2) improve spawning and rearing habitat, and 3) increase egg-to-smolt survival rates. The Oregon Department of Fish and Wildlife 1) applied for and obtained a minimum streamflow at RM 23.5 in Fifteenmile Creek (converted to an instream water right in 1988); 2) in cooperation with private landowners and the irrigation district, has attempted to have all diversions properly screened; 3) has installed fish ladders at two irrigation diversions; 4) has installed a rotary screen on an irrigation diversion, 5) has fenced approximately 14 miles of stream in Fifteenmile and Ramsey creeks; and 6) has placed log weirs, rock weirs, rock jetties, log deflectors, and rock deflectors at various sites in Fifteenmile and Ramsey creeks. Work has also been funded for another 20 miles of fencing and the placement of instream structures in 51 miles of stream. The Oregon Department of Fish and Wildlife is also attempting to obtain funds from the Bonneville Power Administration to screen several pump diversions. In coordination with the Oregon Department of Fish and Wildlife and with funding provided by the Oregon Wildlife Heritage Foundation, STEP (Oregon Department of Fish and Wildlife's Salmon and Trout Enhancement Program) volunteers installed a fish ladder at Seufert Falls (RM 2.5).

Habitat Management

The greatest potential for increasing anadromous salmonid production in the drainage is believed to exist in Fifteenmile Creek and several of its tributary streams. During the irrigation season (April 15 to September 30), increased demand on the water resource causes streamflows to reach critically low

levels and water temperatures to reach stressful limits in the lower 20 to 30 miles of Fifteenmile Creek. Fencing the lower reaches of Fifteenmile, Eightmile, Fivemile, Mays Canyon, and Davis creeks and Jameson Canyon, Dry Creek, Jap Hollow, and Shotgun Hollow would help to restore the riparian zone in each of these areas. This, in turn, would help to retain water in the drainage, cool water temperatures, and increase summer streamflow in the lower drainage. Instream structures would be provided in a few selected reaches of stream in Fivemile Creek where rearing habitat has been lost or seriously degraded.

Institutional Considerations

The Fifteenmile Creek drainage encompasses approximately 373 square miles (238,720 acres) and is entirely located on lands ceded to the United States government by the Warm Springs Tribe. Fifteenmile Creek currently sustains a population of wild winter steelhead. The U.S. Forest Service manages a significant amount of land in the Fifteenmile Creek drainage. Little land is administered by other federal, state, and city agencies.

Past land management practices, primarily on private lands, have resulted in the extensive degradation and loss of spawning and rearing habitat for anadromous salmonids. As co-managers of rivers located on ceded lands, the Oregon Department of Fish and Wildlife and the Warm Springs Tribe, in cooperation with the U.S. Forest Service, have identified various physical and environmental constraints limiting the carrying capacity of anadromous salmonids in the Fifteenmile Creek drainage. Resolving many of these concerns will require close cooperation with other state and federal regulatory agencies having jurisdiction over various activities within the drainage. While in most instances the Oregon Department of Fish and Wildlife is allowed an opportunity to present testimony or provide comment on permits, agency management plans, or potential actions that may impact populations of anadromous salmonids, the final decision still rests with the responsible agency.

Because many of the decisions being made are based on a variety of social, political, and economic pressures, it is important that the Oregon Department of Fish and Wildlife work closely with local representatives of all agencies that regulate and enforce laws that either directly or indirectly impact populations of anadromous salmonids. Close cooperation will be necessary if the fisheries resource is to receive adequate protection in the decision making process. Areas of major concern in the Fifteenmile Creek drainage are discussed below.

The diversion of surface water for consumptive and non-consumptive uses is regulated by the Oregon Water Resources Commission and the Department of Water Resources. During the irrigation season (April 15 to September 30), the various demands

placed on the water resource will cause streamflows to reach critically low levels; water temperatures to increase above the optimum; and sections of some streams to become intermittent. Strict enforcement of all minimum streamflows; all stipulations regulating the maximum diversion and rate of withdrawal of surface water, as specified in each Certificate of Water Right; and all legal cutoff dates for irrigation diversions will provide the means for increasing streamflow and decreasing water temperatures throughout the drainage. Application for instream water rights or the purchase of existing water rights would also ensure that during low flow periods the allocation of water for instream use would have the same legal status and receive the same consideration as water rights for other commercial and non-commercial uses.

The U.S. Forest Service currently manages approximately 45,500 acres of forestland (Mount Hood National Forest) in the upper Fifteenmile Creek drainage. Past and present land management practices on the Mount Hood National Forest have resulted in some loss or degradation of spawning and rearing habitat. In cooperation with the Oregon Department of Fish and Wildlife and Warm Springs Tribe, the U.S. Forest Service has proposed a variety of habitat improvement projects designed to mitigate the loss or degradation of habitat on national forest lands in the Fifteenmile Creek drainage. Some projects have been completed, some are in various stages of completion, and several are in the planning stage. The U.S. Forest Service has also written a land and resource management plan designating how national forest land in the Fifteenmile Creek drainage will be managed for the next 10 years (1990-2000). The Oregon Department of Fish and Wildlife and Warm Springs Tribe have provided significant input into the planning process. The plan was reviewed by the various land and resource management agencies and went through a period for public comment.

The Oregon Department of Fish and Wildlife has the responsibility of protecting aquatic and riparian habitat to enhance and optimize the production of desired species of fish [Oregon Administrative Rule (OAR) 635-07-515]. In the Fifteenmile Creek drainage, the Oregon Department of Fish and Wildlife has primarily concentrated on improving passage for upstream migrants and improving juvenile rearing habitat on private lands.

Surface water is primarily withdrawn from the Fifteenmile Creek drainage by pumping. Only one irrigation district (Wolf Run Irrigation District) exists within the drainage. The diversion is located on the Mount Hood National Forest. The Oregon Department of Fish and Wildlife and U.S. Forest Service have worked with the irrigation district and with the operators of some of the smaller diversions in an attempt to minimize the loss of downstream migrant salmonids to the diversion; the loss

of which is assumed to increase egg-to-smolt mortality rates. The law currently stipulates that for those waters in which game fish exist, all persons diverting water are to install, at their own expense, screens or bypass devices [Oregon Revised Statue (ORS) 509.615]. To date the success in dealing with either the irrigation districts or other individuals diverting surface water from the Fifteenmile Creek drainage has been mixed. Many of the smaller diversions are improperly screened and the diversion to the Wolf Run Irrigation District's ditch remains unscreened.

Although persons operating diversions recognize the fact that anadromous salmonids may be lost to the diversion, many have not allocated either the funds or the manpower to properly design, install, operate, and maintain the required bypass facilities. The Oregon Department of Fish and Wildlife also lacks the funds and manpower to monitor compliance of ORS 509.615.

Other Considerations

Historically, an estimated 131 miles of steelhead spawning habitat and 125 miles of rearing habitat existed in the Fifteenmile Creek drainage. The tangle of riparian vegetation along its banks was prime habitat for upland game birds, furbearing animals, nongame wildlife and big game animals.

During the past 100 years, a variety of agricultural practices have significantly reduced the drainage's carrying capacity for anadromous salmonids. Valley bottoms were cleared for use as cropland and pasture areas and water was diverted for municipal, irrigation, and cattle use. Streamside vegetation and cover in much of the middle and lower drainage have been reduced or eliminated by significant increases in livestock numbers; the amount of cultivated land; timber harvest; the use of herbicides; two 100-year floods in the last 25 years; and artificial channelization.

Degradation of the riparian zone and the logged forested lands in the headwaters of many of the tributary streams have decreased the ability of the drainage to store water and regulate runoff. As a result, the lower drainage experiences higher peak flows and increased streambank erosion. In response to the problem, landowners have modified the stream channel partly in an attempt to reduce field erosion, but also to create more regularly shaped fields that would be easier to cultivate and irrigate. This practice has resulted in an overall reduction of stream length; elimination of much of the backwater holding areas used by juvenile salmonids; and increased stream velocities and stream gradient. A combination of increased agricultural use, timber harvest, channelization, and stream modification further exacerbated problems associated with streambank erosion. It was estimated that by 1975 the Fifteenmile Creek drainage was

producing approximately 149,000 tons of sediment annually (Wheeler 1975).

Consumptive and non-consumptive uses of surface water within the drainage, in combination with the lack of sufficient riparian vegetation, have resulted in lower summer streamflows and elevated water temperatures. In the lower 20 to 30 miles of Fifteenmile Creek, a combination of low summer flows, elevated water temperature, and heavy siltation has made this reach of stream unsuitable as spawning or rearing habitat for both trout and anadromous salmonids.

Surveys indicate that by 1986 total available spawning habitat had declined by approximately 31 percent and total available rearing habitat had declined by approximately 65 percent. Fisheries managers believe that approximately 91 miles of suitable spawning habitat and 44 miles of suitable rearing habitat are available to winter steelhead.

Relatively little information exists specific to the drainage that can be used to accurately estimate the productive potential of the drainage. Based on what limited information is available, it is thought that a significant increase in run size could be achieved by strictly enforcing those laws and regulations that have been enacted to protect and enhance the fisheries resources. Increased compliance of existing laws and regulations designed to protect and enhance the fisheries resources will result in a significant increase in the benefits associated with the various habitat improvement projects that have been proposed as a means of improving spawning and rearing habitat and increasing egg-to- smolt survival rates in the drainage.

Policies

Policy 1. Potential losses of fish production from habitat degradation will be prevented or reduced to the extent possible.

Objectives

Objective 1. Provide optimum habitat for all freshwater life history stages of anadromous salmonids.

Assumptions and Rationale

1. Quality habitat is important for maintaining populations of anadromous salmonids.

2. Past land and resource management practices have seriously degraded existing habitat to the extent that

it may be impossible to either achieve or maintain runs at or even near historical levels.

3. Returning all lost or degraded habitat back into full production capability would significantly increase the current carrying capacity of the drainage.

Actions

Action 1.1 Encourage the water master and the Department of Water Resources to: 1) enforce legal cutoff dates for irrigation diversions and 2) enforce instream water rights; 3) more actively monitor the amount of water being withdrawn at each diversion in the drainage; and 4) ensure that persons diverting surface water do not exceed the maximum diversion and rate of withdrawal allowed by the Certificate of Water Right.

Action 1.2 Encourage all federal, state, county, and private landowners harvesting timber in the Fifteenmile Creek drainage to exceed guidelines set forth in the state Forest Practices Act.

Action 1.3 Support additional rules and guidelines for inclusion into the Forest Practices Act that will provide a greater degree of protection for existing anadromous salmonid habitat.

Objective 2. Maintain or improve passage for upstream and downstream migrant salmonids.

Assumptions and Rationale

1. Passage for migrant salmonids in the Fifteenmile Creek drainage is less than optimum.

Actions

Action 2.1 Monitor compliance of ORS 509.615, which in part states that "any person who diverts water from any body of water in this state in which fish exist shall install, operate and maintain, at the expense of the person, such fish screening or bypass devices that the Department determines are necessary to prevent fish from leaving the body of water and entering the diversion.

Objective 3. Increase and optimize the productivity of the drainage by improving the habitat.

Assumptions and Rationale

1. Fish habitat in the Fifteenmile Creek drainage is at less than optimum levels.

Actions

Action 3.1 Implement habitat improvement projects that will: 1) provide instream structure; 2) restore or re-establish riparian zones; and 3) increase egg-to-smolt survival rates.

Action 3.2 Increase egg-to-smolt survival rates by designing, installing, and properly maintaining a bypass screen at the point of the diversion to the Wolf Run Irrigation District's ditch and by adequately screening the point of diversion at all major water withdrawals within the drainage.

ECOLOGICAL CONSIDERATIONS

This fish management plan contains separate sections that detail the management activities designed to best achieve our desires in respect to that particular species. In many cases the effects of these proposed management activities on species other than the target species is not well understood. In this section the consequences of the management of one species on the status of other species will be explored.

Generally speaking, the interspecific interactions between fishes consist of competition or hybridization. Beginning in 1992 there will be no hatchery supplementation of any fish in the Fifteenmile Creek drainage. This will prevent artificially induced competition or hybridization. The natural level of interaction between wild winter steelhead and native resident trout and other fishes in the Fifteenmile Creek drainage is not known.

WINTER STEELHEAD

Background and Status

Origin

The Fifteenmile Creek drainage supports the eastern most population of wild winter steelhead in the Columbia River Basin. Fisheries managers believe that approximately 91 linear miles of suitable spawning habitat and 44 linear miles of suitable rearing habitat are currently available for winter steelhead in Fifteenmile Creek; Eightmile and Ramsey creeks, tributaries to Fifteenmile Creek; and Fivemile Creek, tributary to Eight mile Creek.

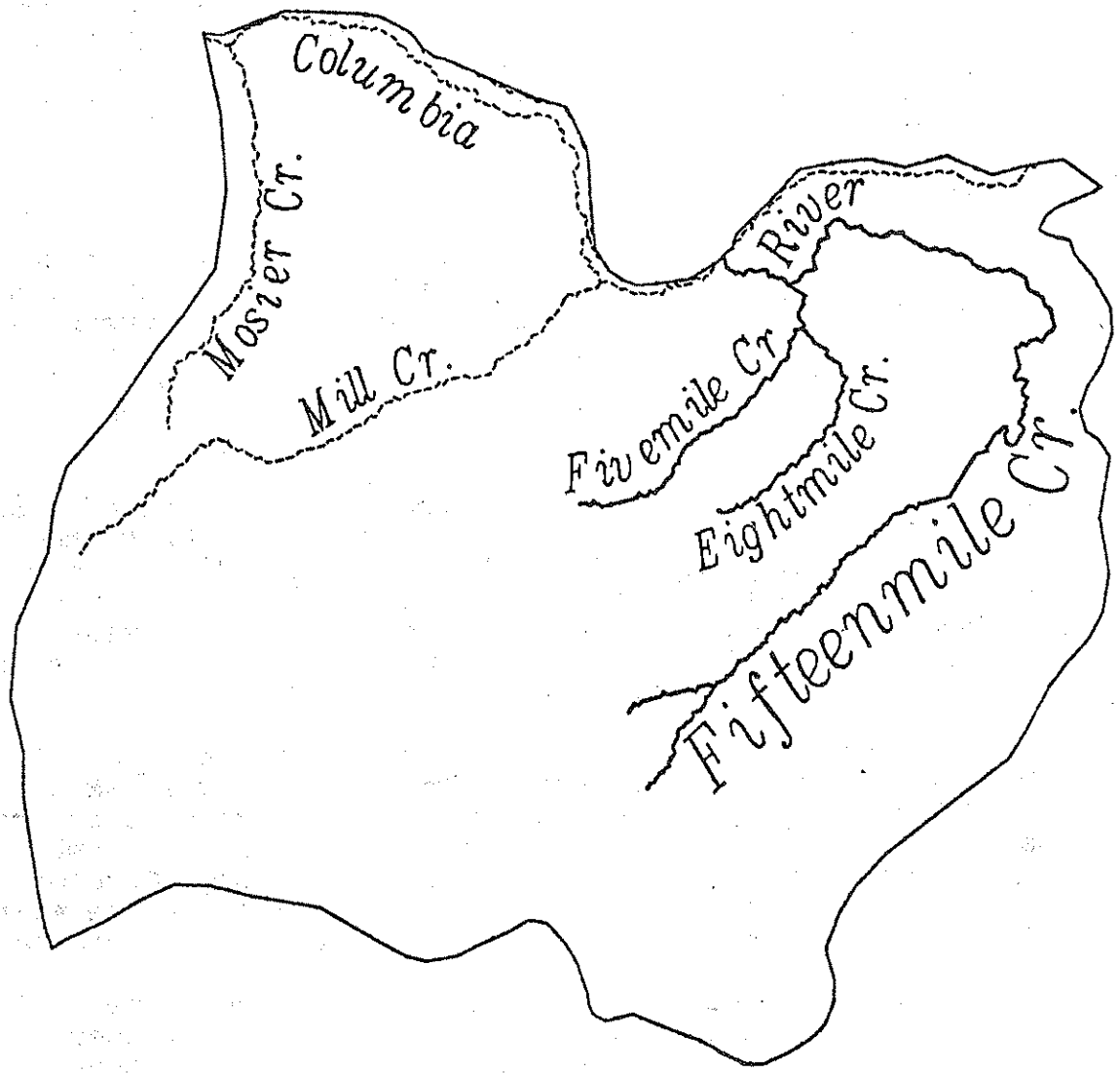
Managers have never released hatchery winter steelhead into the Fifteenmile Creek drainage. Because of the lack of any ongoing hatchery program, biologists believe that the existing population is a unique stock of wild winter steelhead.

No quantitative and very little qualitative life history information exists on the Fifteenmile Creek stock of wild winter steelhead. Managers assume that the wild run has a life history cycle similar to that of winter steelhead in lower Columbia River subbasins. Winter steelhead return to the Fifteenmile Creek drainage from February through March, primarily as 1-salt and 2-salt fish; spawn from March through April; emerge from early June through mid-July; and migrate as smolts during April and May, primarily as age-2+ and age-3+ juveniles. No data is available on age structure, sex ratio, length-weight ratio, fecundity, and egg-to-smolt and smolt-to-adult survival rates.

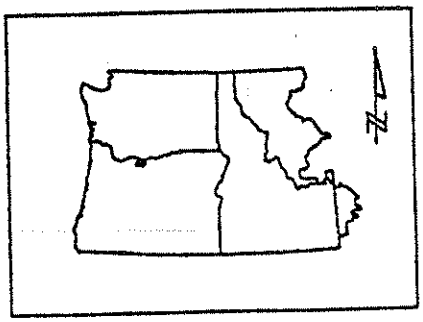
Managers do not have estimates of run size for the Fifteenmile Creek drainage. It is believed that run size ranges from around 200 to 300 adults.

Data is currently unavailable to accurately estimate the smolt production capacity for the drainage. The best estimate to date was developed by a technical committee comprised of personnel from the Oregon Department of Fish and Wildlife, U.S. Forest Service, Soil Conservation Service, U.S. Fish and Wildlife Service, National Marine Fisheries Service and the Warm Springs Tribe. The technical committee estimates the current smolt production capacity of the Fifteenmile Creek drainage at approximately 26,000 winter steelhead smolts. This estimate is based on a subjective evaluation of the habitat along with several assumptions about the spatial distribution of the population. The Monitoring and Evaluation Group provided an estimate of smolt densities for habitat classified as poor, fair, good, and excellent.

FIFTEENMILE SUBBASIN



WINTER STEELHEAD DISTRIBUTION*



——— PRESENT/POTENTIAL

- - - - - ABSENT

GIS GEOGRAPHIC INFORMATION SYSTEM
BONNEVILLE POWER ADMINISTRATION

* Due to the limitations of scale, all streams which support anadromous fish are not shown on this map.

The only morphological or electrophoretic data on winter steelhead in the Fifteenmile Creek drainage is presented in Schreck et al. (1986).

Hatchery Production

No hatchery facilities exist in the Fifteenmile Creek drainage and it is doubtful that any facility will be proposed for the express purpose of supplementing runs of wild winter steelhead. Managers have never released winter steelhead into the Fifteenmile Creek drainage.

Harvest

The winter steelhead fishery in the Fifteenmile Creek drainage currently harvests only a very limited number of fish (Table 12). Regulations designed to protect upstream migrants primarily restrict the sport fishery to the catch and release of kelts. Estimates of sport harvest were obtained from punch-card returns. No creel surveys exist specifically to estimate sport harvest in the Fifteenmile Creek drainage.

The Warm Springs Tribe has treaty-secured usual and accustomed fishing places located throughout the Fifteenmile Creek drainage. While the tribal harvest of winter steelhead in the Fifteenmile Creek drainage is not known, it is probably very low because in cooperation with the Oregon Department of Fish and Wildlife, the tribal fishery was voluntarily closed several years ago in an attempt to rebuild the depressed run.

Fifteenmile Creek is open to sport fishing from 200 feet above the fishway at Seufert Falls (approximately RM 0.2) to Petersburg Bridge (approximately RM 3.3). Harvest of anadromous salmonids is limited to two adults per day in any combination, with a six-per-week total from April 23 through October 31. All the tributaries in Fifteenmile Creek, as well as the mainstem of Fifteenmile Creek above Petersburg Bridge, are closed to angling.

State game officers regularly patrol the Fifteenmile Creek drainage to enforce fishing regulations. The officers currently experience few enforcement problems. Regulation changes are being considered that would delay opening day of trout season or increase the minimum trout size. These changes may make enforcement of winter steelhead regulations somewhat more difficult.

The Warm Springs Tribal Council regulates the tribal fishery in the Fifteenmile Creek Basin through the provisions of Warm Springs Tribal Code Chapter 340 (Fishing Code).

Table 12. Sport harvest of winter steelhead in the Fifteenmile Creek drainage, 1977-1978 through 1986-1987 run years. Estimates are from punch-card returns (adjusted for non-response bias).

Run Year	Sport Catch
1977-78	54
1978-79	0
1979-80	0
1980-81	3
1981-82	18
1982-83	10
1983-84	3
1984-85	4
1985-86	a
1986-87	a

[a] Season closed until late April. The fishery is primarily catch and release for kelts.

Management Considerations

Little information is available on the current status of winter steelhead in the Fifteenmile Creek drainage. Based on what limited information is available on the spatial distribution of the population, it is thought that approximately 91 linear miles of suitable spawning habitat and 44 linear miles of suitable rearing habitat are currently available for use by winter steelhead in Fifteenmile Creek; Eightmile and Ramsey creeks, tributaries to Fifteenmile Creek; and Fivemile Creek, tributary to Eightmile Creek.

The current management goal is to optimize harvest opportunities in sport and tribal fisheries. To achieve this goal, the Oregon Department of Fish and Wildlife and U.S. Forest Service, with funding from the Bonneville Power Administration, have implemented various habitat improvement projects designed to increase the production potential of the drainage. No hatchery winter steelhead have ever been released into the Fifteenmile Creek drainage and for this reason managers believe that the existing population is a unique stock of wild winter steelhead.

Based on what limited amount of information is available, it appears that over the last four to seven years the winter steelhead run has been below the number needed to maximize production for the drainage. The problem is believed to be the result of overharvesting the Fifteenmile Creek stock of winter

steelhead in the mainstem Columbia River and to the underseeding of habitat due to passage problems. To achieve the productive potential of the drainage both now and after implementation of the actions defined in this plan it may be necessary to reduce the harvest of winter steelhead in the mainstem Columbia River.

It is thought that the Fifteenmile Creek drainage currently has the capacity to sustain a run of approximately 400 to 600 winter steelhead and that a significant increase in run size can be expected upon implementation of all the preferred strategies listed in this subbasin plan.

Critical Data Gaps

The primary problem associated with managing anadromous salmonids in the Fifteenmile Creek drainage has been the general lack of any quantitative data on the current status of the wild run of winter steelhead. Most of the assumptions about the status of the stock as well as many of the decisions as to how the species should be managed have been made based on trends in the inriver sport fishery and from spawning ground counts obtained in the primary spawning and rearing areas. While trends in each parameter may be indicative of trends in escapement to the drainage it is important to have good quantitative estimates of run size when deciding how to manage the run. Construction of an adult trapping facility is considered essential in obtaining this information.

Relatively little information exists specific to the drainage that can be used to accurately estimate the productive potential of the drainage. Based on what limited information is available, it is thought that a significant increase in run size could be achieved by strictly enforcing those laws and regulations that have been enacted to protect and enhance the fisheries resources. Increased compliance of existing laws and regulations designed to protect and enhance the fisheries resources will result in a significant increase in the benefits associated with the various habitat improvement projects that have been proposed as a means of improving spawning and rearing habitat and increasing egg-to- smolt survival rates in the drainage.

Both quantitative and qualitative data are lacking on all aspects of the life history of winter steelhead in the Fifteenmile Creek drainage. The lack of such information makes it extremely difficult to effectively manage winter steelhead, either as a distinct race or in conjunction with other species of trout present in the subbasin, particularly at a time when the run is considered to be at a low level. To effectively manage winter steelhead in the Fifteenmile Creek drainage and to properly implement and evaluate actions specified in this plan, as well as actions listed in other Columbia River subbasin plans,

the Central Region of the Oregon Department of Fish and Wildlife and the Warm Springs Tribe consider it vital that the following data be collected. Actions are listed beginning with the highest priority item.

1. Monitor run size (harvest and escapement).

   No data exists on the current status of the run although it is assumed that the run is at a low level. Long-term data on run size would provide the minimum amount of information considered necessary to 1) effectively manage winter steelhead in the Fifteenmile Creek drainage; 2) maximize production; and 3) optimize harvest opportunities in the drainage. This information would also provide the only means for determining whether the harvest and escapement goals defined by this plan have been achieved.

2. Monitor smolt production.

   A quantitative estimate of the smolt production capacity of the Fifteenmile Creek drainage is unavailable. The only estimate available was developed by a technical committee comprised of members from various state, federal, and tribal agencies. Monitoring smolt production would provide the most accurate method available for estimating the smolt production capacity of the drainage. This information is considered necessary in determining whether the goals and objectives listed in this subbasin plan are achievable given the current state of the habitat.

3. Determine spatial distribution.

   Limited information exists on the spawning and rearing distribution of winter steelhead in the Fifteenmile Creek drainage. It is assumed that the population is primarily located in the mainstems of Fifteenmile, Eightmile, and Ramsey creeks. Information on the spatial distribution of the population is important for managing the fisheries resource and for evaluating the benefits associated with habitat improvement projects currently under consideration or those that may be proposed in the future. Data would aide in optimizing the benefits from habitat improvement projects conducted in the Fifteenmile Creek drainage.

4. Gather life history information.

   General life history information such as adult age composition, sex ratio, adult length-weight ratio, fecundity, and egg-to-smolt and smolt-to-adult survival rates are unavailable for winter steelhead in the Fifteenmile Creek drainage. This information is important for effectively managing the fisheries resource.

5. Estimate juvenile rearing densities.

Limited information exists on the rearing densities of winter steelhead in the Fifteenmile Creek drainage. This information would be important in more accurately evaluating the benefits derived from habitat improvement projects currently under consideration or those that may be proposed

in the future. This information would also provide the means for evaluating laws and regulations designed to protect and enhance the fisheries resource.

Management Alternatives

Since the Fifteenmile Creek drainage has never been supplemented with hatchery produced winter steelhead only one management strategy was developed for the Fifteenmile Creek winter steelhead populations. The goal of this strategy is the recovery of the winter steelhead populations in the Fifteenmile Creek drainage.

POLICIES

Policy 1. Winter steelhead in the Fifteenmile Creek drainage will be managed for natural production of the native populations.

Objectives

Objective 1. Achieve and maintain an average annual escapement of approximately 1,500 wild adult winter steelhead to the Fifteenmile drainage and a minimum average annual spawner escapement of approximately 900 wild adult winter steelhead.

Assumptions and Rationale

1. The Fifteenmile Creek drainage supports wild winter steelhead, although at significantly lower numbers than historic levels.

2. The genetic diversity of the wild populations of Fifteenmile Creek winter steelhead will be adequately maintained by a spawning escapement of 900 adults.

3. An adult trapping facility on Fifteenmile Creek could be used to: 1) determine when the escapement goal defined in the objective has been achieved, or if it is achievable; 2) more effectively manage the wild run of winter steelhead; and 3) provide the means for more

accurately estimating what level of harvest can be sustained by inriver sport and Warm Springs Tribal fisheries. The information would be used for future review of the policies and objectives of this plan.

4. Estimates of harvest obtained from creel surveys may be used in conjunction with data obtained at the adult trapping facility to more accurately estimate spawner escapement to the Fifteenmile Creek drainage.

Actions

Action 1.1 Build an adult trapping facility near the mouth of Fifteenmile Creek to annually monitor escapement of wild adult winter steelhead to the Fifteenmile Creek drainage.

Action 1.2 Creel inriver sport and Tribal fisheries located in the Fifteenmile Creek drainage.

RESIDENT FISH

Rainbow Trout

Background and Status

Origin

Little information is available on the current status of the rainbow trout populations in the Fifteenmile Creek drainage. What limited information is available indicates that relatively low numbers of rainbow trout can be found throughout much of the drainage. It is assumed that past and present land management practices have significantly reduced the quantity and quality of available trout habitat in the drainage.

Life History and Population Characteristics

It is assumed that the population has a life history cycle similar to that of other rainbow trout located in other lower Columbia River subbasins. These populations of rainbow trout spawn sometime during the spring and early summer, with emergence occurring approximately 6-8 weeks after spawning. No data is available on the age structure, sex ratio, length:weight ratio, fecundity, and egg to adult survival rate for rainbow trout in the Fifteenmile Creek drainage. It is likely that rainbow trout in Fivemile Creek and possibly in Eightmile Creek occur sympatrically with cutthroat trout as described by Nicholas (1978).

Supplementation History

Legal sized hatchery rainbow trout were released into the Fifteenmile Creek drainage from 1954 to 1991. These releases ranged from 250-6,100 fish. These releases were generally located near the community of Dufur and provided for a locally popular consumptive sport fishery.

Beginning in 1992 the opening of trout season for the Fifteenmile Creek drainage was changed from the third weekend in April to the third weekend in May. This change was made in order to protect wild steelhead smolts that are emigrating in April and early May. Many of these smolts are of legal trout size (≥6 inches) and may be mistaken for trout. Water temperatures in Fifteenmile Creek in the vicinity of Dufur at the end of May are generally too warm for trout and the hatchery supplementation was ~~stopped~~ discontinued in 1992.

Fish Production Constraints

START Cutthroat Section here

Since the latter part of the 19th century a variety of agricultural practices have significantly reduced the carrying capacity of the drainage. Valley bottoms were cleared for use as croplands and pasture areas, and water was diverted for municipal use, ~~and for~~ irrigation and livestock. Factors that have reduced or eliminated riparian habitat and stream cover include: increases in livestock numbers, timber harvest, the amount of cultivated land, and the use of pesticides; several large floods; and artificial channelization.

Timber harvest activities in the headwater reaches of the drainage have decreased the ability of the drainage to store water and regulate runoff. As a result, the lower drainage experiences higher peak flows and increased streambank erosion. In response to the problem, landowners have modified the stream channel in an attempt to reduce erosion and also to create symmetric fields, making cultivation and irrigation easier. This practice has resulted in an overall reduction in stream length, elimination of much of the pool habitat used by juvenile salmonids, and increased stream velocities and stream gradient. A combination of increased agricultural activity, timber harvest, channelization, and stream modification further exacerbated problems associated with streambank erosion. It was estimated that by 1975 the Fifteenmile Creek drainage was producing approximately 149,000 tons of sediment annually (Wheeler, 1975).

Consumptive and non-consumptive uses of surface water within the drainage, in combination with the lack of sufficient riparian vegetation, have resulted in lower summer stream flows and elevated water temperatures. In the lower 20 to 30 miles of Fifteenmile Creek a combination of low summer flows, elevated water temperature, and heavy siltation have made this reach of stream unsuitable as rearing habitat for resident trout and anadromous salmonids.

Angling and Harvest

Angling regulations for the sport harvest of rainbow and cutthroat trout in the Fifteenmile Creek drainage were changed in 1992. Prior to that time the trout season opened the third weekend in April. In 1992 the opening was changed to the third weekend in May, in order to protect emigrating juvenile wild winter steelhead. Special regulations include no angling from the mouth of Fifteenmile Creek (RM 0) to 200 feet above the fishway at Seufert Falls. (RM _). State game officers regularly patrol the Fifteenmile Creek drainage to enforce fishing regulations. Officers currently experience few enforcement problems.

Fishing in the Fifteenmile Creek drainage by tribal members in accordance with treaty rights is regulated by the Warm Springs Tribal Council under the provisions of the Warm Springs Fishing Code (Chapter 350, Warm Springs Tribal Code).

Management Considerations

Little information is available on ~~the~~ current status of rainbow trout in the Fifteenmile Creek drainage. What limited information is available indicates that relatively low numbers of rainbow trout can found throughout much of the drainage. It is assumed that past and present land management practices have significantly reduced ~~the~~ quantity and quality of available trout habitat in the drainage.

~~The~~ Native rainbow trout populations in ~~the~~ Fifteenmile Creek drainage are a valuable resource which currently sustains a small but popular sport fishery. Spawning and rearing is thought to occur throughout the drainage. In the past there was a small hatchery release program located near the town of Dufur. Approximately 500 legal sized hatchery rainbow trout were released annually for the opening weekend of trout season. Beginning in 1992 the opening day of trout season in Fifteenmile Creek will be delayed until the third weekend in May, instead of the third weekend in April. The purpose of this delay is to protect juvenile wild winter steelhead that are migrating downstream in April. Because water temperatures in Fifteenmile Creek at the end of May are generally too high to support hatchery trout this stocking program will no longer be continued.

This is where the trumpets come in right?

To guarantee that the native populations of rainbow trout in the Fifteenmile Creek drainage are adequately protected it is imperative that sound empirical data be collected on the life history, distribution, abundance, and habitat requirements of these fish.

Management Alternatives

Rainbow and cutthroat trout in the Fifteenmile Creek drainage will be managed strictly for natural production of the native and cutthroat populations. Only one management strategy for rainbow and cutthroat trout in the Fifteenmile Creek drainage was developed. This alternative is consistent with the wild fish alternative of the ODFW Trout Plan (1987). (And the wild Fish Management Policy!!)

Policies

Policy 1. Rainbow ~~trout~~ and cutthroat in the Fifteenmile Creek drainage will be managed for natural production consistent with the wild fish management alternative ~~of the ODFW~~ Trout Plan (1987).

Policy 2. No hatchery trout will be ~~managed~~ stocked in Fifteen Mile Creek and tributaries.

Objectives

Objective 1. Maintain natural production of the native populations of rainbow trout in the Fifteenmile Creek drainage.

Maintain genetic diversity, adaptiveness and abundance of wild indigenous rainbow ~~trout~~ and cutthroat trout in the Fifteen Mile Creek drainage.

Assumptions and Rationale

1. Viable populations of native rainbow trout exist in the Fifteenmile Creek drainage.

2. Carrying capacity, survival rates of various life history stages, and the effects of competition with other species of salmonids are the primary parameters in which sound empirical data is considered necessary to effectively manage the fisheries resource.

Actions

Action 1.1 Initiate studies designed to monitor the temporal and spatial distribution of rearing juveniles.

Action 1.2 Initiate studies designed to monitor juvenile rearing densities in the Fifteenmile Creek drainage.

Russ: cutthroat life history + distribution info should follow Rainbow Section p. 38; then do common sections: 1) Production constraints 2) Angling + Harvest 3) MGT. Considerations 4) MGT. Alts. 5) Policies etc.

Cutthroat Trout

Management Considerations

Little is known about the distribution of cutthroat trout in the Fifteenmile Creek drainage. They are known to inhabit Fivemile Creek and have also been reported from Eightmile Creek. There are no reports of cutthroat trout in the mainstem of Fifteenmile Creek or in Ramsey Creek. In Fivemile Creek and possibly in Eightmile Creek cutthroat trout may occur sympatrically with rainbow trout as described by Nicholas (1978).

give some generalized life history data like p.155 Trout Plan

The ODFW intends to maintain native populations of cutthroat trout in the Fifteenmile Creek drainage. To guarantee that the native populations of rainbow trout in the Fifteenmile Creek drainage are adequately protected it is imperative that sound empirical data be collected on the life history, distribution, abundance, and habitat requirements of these fish.

Management Alternatives

Cutthroat trout in the Fifteenmile Creek drainage will be managed strictly for natural production of the native populations. Only one management strategy for cutthroat trout in the Fifteenmile Creek drainage was developed. This alternative is consistent with the wild fish ~~alternative of the ODFW Trout Plan (1987).~~ Policy.

Policies

Policy 1. Cutthroat trout in the Fifteenmile drainage will be managed consistent with the wild fish alternative of the ODFW Trout Plan (1987).

Objectives

Objective 1. Maintain natural production of the native populations of cutthroat trout in the Fifteenmile Creek drainage.

Assumptions and Rationale

1. Native populations of resident cutthroat trout are present in the Fifteenmile Creek drainage.

2. Abundance, distribution, carrying capacity, survival rates of various life history stages, and the effects of competition with other species of salmonids are the primary parameters in which sound empirical data is considered necessary to effectively manage the fisheries resource.

Actions

Action 1.1 Initiate studies designed to monitor the temporal and spatial distribution of rearing juveniles.

Action 1.2 Initiate studies designed to monitor juvenile rearing densities in the Fifteenmile Creek drainage.

Management Alternatives

Rainbow, and cutthroat trout in Fifteeenmile Creek drainage will be managed strictly for natural production of the native populations. Only one management strategy for rainbow and cutthroat trout was developed. This alternative is consistent with the Wildl Fish Managmeent Policy.

Policies

Policy 1. Rainbow and cutthroat trout in Fifteen Mile Creek and tributaries will be managed for natural produciton consistent with the Wild Fish Management Alternative for Trout (ODFW, 1987).

Policy 2. No hatchery trout will be stocked in Fifteen Mile Creek and tributaries.

Objective 1. Maintain genetic diversity, adaptiveness and abundance of wild indigenous rainbow and cutthroat trout in the Fifteenmile Creek drainage.

Assumptionsa nd Rationale

1. Indigenous Fifteen Mile Creek trout are classified as an inland rainbow trout and have been identified as a sensitive species.

2. This subbasin supports wild rainbow and cutthroat trout.

3. Monitoring the distribution, size, age-class structure and abundance of populations of wild rainbow and cutthroat trout will provide an indicaiton of their health and adaptiveness.

4. REleases of hatchery trout near areas where spawning of wild trout occurs may decrease the genetic fitness of wild trout populations.

Acitons

Action 1.1 Establish trout population trends, distribution and abundance in selected index reaches of Fifteenmile Creek and tributaries.

Action 1.2 Verilfy and document distribution and upper limits of rainbow and cutthroat trout in Fifteenmile Creek and tributaries.

Action 1.3 Assess the status of sensitive rainbow trout in Fifteenmile Cr. and tributaries.

Action 1.4 Establish baseline data on the genetic characteristics of rainbow and cutthroat trout with the use of biochemical and phenotypic parameters.

Objective 2. Provid diverse angling opportunitiies for wild rainbow and cutthroat trout in Fifteenmile Cr. and tributaries.

Assumptions and Rationale

1. Management under this alternative seeks to provide a diversity of angling opportunities including noncosumptive as well as consumptive use of swild trout .

2. Special regulations may be necessary to protect sotck fitness and life history characteristics and to maintain healthy wild rainbow and cutthroat trout populations with multiple age classes.

Actions

Action 2.1 Evalauate angling pressure and harvest rates of wild trout through creel surveys on key stream reaches to determine consumptive use and impacts on wild populations.

Action 2.2 Determine the need for additional or modified angling regulations to protect populations of wild trout by monitoring the production, harvest, and catch rate of wild trout.

Pacific Lamprey

Management Considerations

Little is known about Pacific lamprey (*Entosphenus tridentatus*) in the Fifteenmile Creek drainage. It is assumed that the population has life history characteristics similar to populations in other lower Columbia River subbasins (Wydoski and Whitney 1979). Pacific lamprey are anadromous. The juveniles rear in freshwater and migrate to the ocean to mature before returning as adults to freshwater to spawn. Adult Pacific lamprey probably enter the subbasin from June to September one year prior to spawning and spawn sometime in June and July (Wydoski and Whitney 1979). Adults die after spawning. The ammocoetes burrow into the mud downstream from the nest and may spend up to 6 years in the mud burrows. When body transformation is complete they migrate downstream from March to July to enter the ocean (Wydoski and Whitney 1979).

Abundance and distribution of Pacific lamprey in the Fifteenmile Creek drainage has not been estimated.

Angling regulations for Pacific lamprey are consistent with statewide angling regulations; Pacific lamprey are not considered a game fish and have no catch or length limits.

Pacific lamprey are culturally important to the Warm Springs Tribe, not only in contemporary culture, but also from a traditional and historical perspective. Pacific lamprey, although not as important as salmon and other primary food sources, have played an important role in the seasonal subsistence treks of the tribes.

Significance of this species is evident by the numerous locations named in oral history for the procurement and processing of these fishes. Further evidence of the significance of Pacific lamprey in traditional tribal cultures is manifested in the role they play legends and creation mythology.

Since the establishment of the reservation Pacific lamprey harvest has continued to be important in subsistence activities and in maintaining traditional cultural values. Unfortunately, environmental degradation and loss of spawning and rearing habitat throughout the Columbia River Basin has greatly decreased the abundance of Pacific lamprey.

There is a seasonal tribal fishery for Pacific lamprey at Seufert Falls, and the protection and enhancement of Pacific lamprey is important to the Warm Springs Tribes.

Management Alternatives

Only one management strategy was developed for Pacific lamprey in the Fifteenmile Creek drainage.

Policies

Policy 1. The indigenous population of Pacific lamprey in the Fifteenmile Creek drainage will be maintained.

Objectives

Objective 1. All species of indigenous fish in the Fifteenmile Creek drainage will be managed to sustain the tribal cultural and subsistence needs, while maintaining the structural, functional, and biological requirements to insure ecosystem viability.

Assumptions and Rationale

1. The indigenous population of Pacific lamprey is still present in the Fifteenmile Creek drainage.

2. Maintaining the indigenous population of Pacific lamprey will also provide protection for other species of indigenous non-game fish.

Actions

Action 1.1 Maintain or enhance fish habitat in the Fifteenmile Creek drainage through implementation of actions identified in the habitat and winter steelhead sections of this plan.

ACCESS

Background and Status

Access to the flowing waters in the Fifteenmile Creek drainage is limited, primarily due to privately owned lands. The headwater reaches of Fifteenmile, Eightmile, Fivemile, and Ramsey creeks run through the Mount Hood National Forest, U.S. Forest Service. There is good access to these stream reaches. Below the Forest boundary the streams run through private farm lands and access is dependent upon landowner permission.

Most of the angling opportunity in the Fifteenmile Creek drainage is in the upper reaches of the streams that are on U.S. Forest Service land. The stream reaches below the Forest boundary generally have less angling opportunity.

The members of Indian tribes that hold treaty fishing rights for Fifteenmile Creek have access to Seufert Falls. The Confederated Tribes of the Warm Springs Indian Reservation have agreed not to harvest steelhead in Fifteenmile Creek until the runs are rebuilt, but they continue to harvest Pacific lamprey at Seufert Falls.

POLICIES

Policy 1. ODFW will cooperate with the U.S. Forest Service to maintain existing access on public lands.

Objectives

Objective 1. Allow continued access to those reaches of stream in the Fifteenmile Creek drainage that are on public lands.

Assumptions and Rationale

1. The greatest angling opportunity in the Fifteenmile Creek drainage is in the upper reaches of stream on public lands.

2. There is presently adequate road access to the stream reaches that are on public lands.

3. There is little angling opportunity in the lower stream reaches of the Fifteenmile Creek drainage that are on private lands.

Actions

Action 1.1 Encourage the U.S. Forest Service to maintain existing road access to the upper stream reaches

of the Fifteenmile Creek drainage that are on U.S.F.S. land.

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