FIFTEENMILE CREEK HABITAT RESTORATION PROJECT 9304000

SHORT DESCRIPTION:
Restore spawning and rearing habitat for wild winter steelhead in the Fifteenmile Creek Basin. Provide O&M of the improvements constructed to date as well as the continuing implementation. Implement additional riparian fencing and bank stabilization work.

SPONSOR/CONTRACTOR: ODFW
Oregon Department of Fish and Wildlife
Ray Hartlerode, Project Leader
3450 West 10th street, The Dalles, OR 97058
541/296-8026 76420,1615@compuserve.com

SUB-CONTRACTORS:
Wasco County Soil and Water Conservation District

GOALS

GENERAL:
Supports a healthy Columbia basin, Maintains biological diversity, Maintains genetic integrity, Increases run sizes or populations, Provides needed habitat protection

ANADROMOUS FISH:
Habitat or tributary passage, O&M

NPPC PROGRAM MEASURE:
7.6B.5

RELATION TO MEASURE:
Fifteenmile Creek Basin was selected as a mitigation site for wild winter steelhead enhancement under the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program. A Cooperative effort between Oregon Department of Fish and Wildlife (ODFW), US Forest Service (USFS) , Wasco County Soil and Water Conservation District (SWCD), and the Confederated Tribes of the Warm Springs has been undertaken to enhance winter steelhead habitat.

TARGET STOCK	LIFE STAGE	MGMT CODE (see below)
Winter Steelhead	All life stages	N, W

AFFECTED STOCK	BENEFIT OR DETRIMENT
Pacific Lamprey	Beneficial
Resident Rainbow Trout	Beneficial

BACKGROUND

Stream name:
Fifteenmile Creek
Stream miles affected:
48 +

LAND AREA INFORMATION
Subbasin:
Fifteenmile
Land ownership:
private
Acres affected:
approximately 600
Habitat types:
Spawning, Rearing, Holding, Cover,

HISTORY:
In the period between 1987 and present, BPA funded habitat improvement work in the Fifteenmile Creek Watershed as project 86-79-01. During that time, 88 miles of riparian fence, 899 habitat structures, four spring developments, 96 fish screens, and 6 fish passage improvement projects were installed to improve winter steelhead habitat in an effort to increase natural production. In order to be able to install these improvements on private land, landowners signed 15-year leases where ODFW (with BPA

funding), assumed maintenance of the improvements. This project provides for the operation and maintenance of these improvements. The implementation of this project is ongoing and we expect to continue to sign leases through at least 1998.

BIOLOGICAL RESULTS ACHIEVED:

This project has benefited wild winter steelhead as well as resident trout, and Pacific Lamprey by providing increased habitat diversity, and increased shade and cover, but to what extent we are unsure without a more in depth monitoring and evaluation project. The project has greatly increased instream habitat diversity, restored streamside vegetation and canopy, and reduced streambank erosion on 45.7 miles of stream. The project has also restored full passage by laddering and screening irrigation diversion structures and screening of irrigation pump intakes. Cattle and wheat ranchers as well as other land users have been educated on the importance of restoration of riparian areas.The recent improvements on Fifteenmile Creek have allowed this stream to begin to recover from decades of habitat degradation due to overgrazing, logging, and road development. Without continued maintenance of these improvements, especially to riparian fencing, the riparian recovery that has occurred in the past nine years will be lost. Whereas, if these improvements are fully maintained for the 15-year term of the landowner leases this stream should be at almost full recovery.

PROJECT REPORTS AND PAPERS:

Progress reports and billings are due monthly. Annual report is due yearly.

ADAPTIVE MANAGEMENT IMPLICATIONS:

The Fifteenmile Creek Habitat Restoration Project preserves management options within the Fifteenmile Creek basin for steelhead and resident species by improving critical habitat. This project will also allow for continued health of Fifteenmile Creek and its tributaries. This project may also keep the potential alive to restore the traditional Native American steelhead dipnet fishery below Seuferet falls. This fishery was suspended in 1991 due to low escapement. We have collectively gained considerable knowledge in regards to bank stabilization projects. We currently are taking a softer approach and incorporating more bio-engineering into each project. Bank stabilization and vegetation work has reduced the chronic problem of fill and removal violations associated with landowners temporary “fixes” to stream bank erosion following high water events.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

1. Provide unobstructed passage over artificial barriers for migrations of adults and juveniles to achieve full seeding and utilization of suitable rearing habitat.
2. Maintain an average maximum summer water temperature of 75o F, or less, at the mouth of Fifteenmile Creek.
3. Provide healthy riparian vegetation on at least 80 percent of the perennial stream miles in the drainage.
4. Increase habitat diversity by increasing pool habitat to 40-50 percent of the total stream area in the drainage.
5. Within the constraints of land use practices, provide for less than 20 percent active erosion of stream banks.
6. Minimize the delivery of sediment from upland sources to the stream channel
7. Educate landowners about how important habitat diversity is, and how healthy streams and riparian areas function. Teach landowners simple bio-engineering technics that they could use on there property. These projects are relatively inexpensive and take only a small amount of time, and can achieve remarkable results.

CRITICAL UNCERTAINTIES:

The most critical uncertainty with this type of project is the fact that it relies heavily on the voluntary cooperation of the private landowners in the Fifteenmile Creek Basin. If an individual landowner chooses not to cooperate in the project then there is a gap in the riparian restoration. If several large adjacent landowners along the stream choose not to cooperate, then the success of the projects downstream of those landowners would be difficult. However, to date, most landowners contacted have chose to cooperate in the project and have signed 15 year riparian protection leases.

BIOLOGICAL NEED:

The below listed biological needs affect all life stages of the winter steelhead and resident trout in this basin.
The Fifteenmile Creek Basin supports the eastern most population of wild winter steelhead in the Columbia River Basin. Fifteenmile Creek and its tributaries support a locally important recreational resident trout fishery. Winter steelhead produced in the basin contribute to sport fisheries in the Columbia River. They also contribute to Indian treaty harvest in the Columbia River

and have historically supported an important dipnet fishery below Seufert Falls near the mouth of Fifteenmile Creek. Production capacity of Fifteenmile Creek is estimated at 1585 adults and 52,305 smolts (U>S> v. Oregon Fifteenmile Creek steelhead production report). Current spawner escapement, however , is estimated at 250 adults. Historically it is estimated that there was approximately 131 miles of steelhead spawning habitat and 125 miles of rearing habitat in the Fifteenmile Basin. Surveys completed in 1986 indicate that available spawning habitat has been reduced to 91.5 miles while suitable rearing habitat has been reduced to 44.5 miles.

Based on surveys conducted in 1986, the factors contributing to the reduction of the quantity or quality of rearing habitat include:

1. Up and downstream passage barriers. Adult steelhead are being blocked or detrimentally delayed on their upstream migration, resulting in the failure to seed suitable spawning and rearing habitat. Juvenile steelhead are likewise blocked from suitable rearing habitat by man-made barriers. Additionally, juvenile steelhead are suffering direct mortalities through unscreened irrigation diversions.
2. Lethal summer water temperatures. High summer temperatures have greatly reduced rearing habitat capability. Approximately 70 percent of the riparian area on agricultural lands is degraded due to livestock grazing and insufficient buffers maintained between cultivated fields and the stream channel. On private forest and National Forest lands the riparian vegetation is generally in good condition. The lack of riparian vegetation and low summer flows result in water temperatures up to 85o F at the mouth of Fifteenmile Creek. More than 35-40 miles of stream are unsuitable for steelhead rearing due to high summer water temperatures.
3. Low summer flows. Low summer flows associated with agricultural user demands decrease the quantity and quality of available suitable rearing habitat. Reduction of riparian habitat has decreased the moisture holding capability of stream adjacent soils and has diminished summer low flows. About 50 miles of stream are affected by reduced summer flows.
4. Lack of habitat diversity. The drainage is currently riffle dominated. The pool-riffle ratio, in existing suitable raring habitat, is 1:10 due to channelization and lack of large woody debris input from the riparian zone. The lack of pools and cover reduce rearing habitat for steelhead, particularly yearling and older fish.
5. Lack of channel stability. The lack of channel stability has increased sediment loading and channel width while decreasing effective cover and the quantity of pool habitat. Channelization of Fivemile, Fifteenmile, and Ramsey creeks has reduced or eliminated the natural floodplains and channel sinuosity resulting in higher stream velocities which accelerate bank erosion and downcutting.
6. Sediment loading. Land use activities within the basin have increased sediment deposition to the stream channel. This increased sediment loading degrades spawning and rearing habitat.

HYPOTHESIS TO BE TESTED:

Null Hypothesis: By restoring riparian vegetation, increasing habitat diversity and restoring full passage for adult and juvenile wild winter steelhead the projected annual return of adult steelhead to the Fifteenmile Creek Basin will not be effected.
Alternative Hypothesis: By restoring riparian vegetation, increasing habitat diversity and restoring full passage for adult and juvenile wild winter steelhead the projected annual return of adult steelhead to the Fifteenmile Creek Basin will increase from approximately 250 to a high of approximately 3340.

ALTERNATIVE APPROACHES:

NA

JUSTIFICATION FOR PLANNING:

NA

METHODS:

The goal of the Fifteenmile Habitat restoration project is to increase production of winter steelhead within the Fifteenmile Creek Basin using habitat protection and enhancement measures. To accomplish this goal, work will progress in the following three phases:

1. Project planning and preparation (Prework)
2. Implementation
3. Project maintenance (Postwork)

Prework

Obtain landowner lease agreements for 1998.

Oregon Department of Fish & Wildlife will negotiate with several landowners within the Fifteenmile Creek Basin to develop

lease agreements. Riparian lease maps will be developed showing exact locations of proposed projects. The lease signing will only occur after all parties have agreed to all conditions of the lease agreement. The riparian lease agreement will then be notarized and recorded at the Wasco County Courthouse.
Identify project work sites.
ODFW will walk streams and use stream survey information as well as aerial photographs to assist in identifying project work sites. A project work map will be developed identifying and marking on the map the type of enhancement activity that will occur. The project will then be staked or marked in the field.
Engineer, Design, and Contract construction of habitat treatment measures.
ODFW will develop construction schedules based on time of year, type of project, and landowner requests. Project personnel will write riparian fence protection as well as streambank stabilization contracts and specifications. ODFW will also advertise project bids, select contractors based on criteria set by State of Oregon and obtain all the necessary permits required to complete habitat treatment measures.
Purchase construction materials.
ODFW project personnel will determine the amount and type of materials needed to complete all riparian protection projects for the 1997 1998 field season. Project personnel will write all materials specifications and criteria. We will also advertise, select low bidder, and accept delivery of construction materials based on specifications and criteria.
Implementation
Implementation of habitat protection and enhancement measures will be consistent with site specific plans that were developed during the prework activities.
ODFW, where at all possible, will allow for natural rehabilitation of riparian and instream fish habitat. This will be accomplished by the construction of riparian protection fences to exclude livestock from riparian areas. Approximately 10.5 miles of riparian protection fence will be constructed within the Fifteenmile Basin thereby protecting approximately 5.25 miles of stream. All construction will be performed by private contractors or the Northwest Service Academy to ODFW specifications. Locations of riparian protection fences will be determined during the prework assessments. Adjustments to fence lines will be allowed at the landowner request up to the time of construction.
ODFW will only construct stream bank stabilization projects where necessary to protect riparian protection fences from immediate destruction. This work will occur on approximately 700 feet of highly eroding stream bank within the Fifteenmile Creek Basin.
Postwork
Postwork activities will begin when construction is completed, and will continue until the end of the project, or at the end of the 15 year lease agreement. This will be done to ensure continued functioning of all habitat restoration projects thereby ensuring success of the entire habitat restoration project.
Inspect and maintain riparian protection fences.
All riparian protection fences, including livestock watergaps, will be visually inspected at least once per month throughout the year. During periods of heavy livestock usage or inclement weather, fences will be inspected more frequently. All damage from livestock, wildlife, weather and vandalism will be documented. All necessary repairs will be corrected as soon as possible.
Inspect and maintain bank stabilization and instream habitat structures.
All instream fish habitat structures will be inspected following spring high flows. All damage to or failure of fish habitat or bank stabilization will be documented. Should repairs to structures be necessary, ODFW will implement repairs through private contractors. Repairs to structures will only be made if necessary to protect riparian fence or if failure is about to cause damage to valuable crop lands.
Monitor stream temperatures.
Thermographs are deployed at 10 locations throughout the Fifteenmile Basin. Five are installed in Fifteenmile Creek, four on Eightmile Creek, and one on Ramsey Creek. All data will be downloaded into computer and summarized monthly.
Monitor stream flows.
Stream flows will be monitored at six (6) different locations throughout the Fifteenmile Creek Basin. Flow will be measured during stable flow conditions. Flows are taken during the months of May, August, and October.
Photographic documentation.
Photo point documentation will be taken at 41 established locations throughout the Fifteenmile Basin. Photo point pictures will be taken in late September under low flow and high vegetation growth conditions.

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase	**Start** Jan 1998	**End** July 1998	**Subcontractor** X

Task Plan and prepare for 1998 work season: Obtain landowner lease agreements for work in 1998 field season on Fifteenmile Creek and Eightmile Creek. Identify project work sites. Engineer, and design habitat treatment measures. Contract construction of habitat treatment measures. Purchase construction materials necessary to complete habitat treatment measures.

Implementation Phase **Start** May 1998 **End** Nov. 1998. **Subcontractor**

Task Implementation construction of habitat restoration measures,Allow natural rehabilitation of the riparian and instream fish habitat on Fifteenmile Creek, Eightmile Creek, by fencing to exclude livestock. Construct stream bank stabilization structures to allow fence construction. Install approximately 13 solar pump stations to provide off site water for livestock.

O&M Phase **Start** April 1998 **End** March 1999 **Subcontractor**

Task Post work Perform ongoing operation, maintenance, monitoring, and evaluation to insure continued functioning of completed fish habitat improvements. Inspect and maintain riparian protection fences. Inspect and maintain bank stabilization and instream habitat structures. Monitor stream temperatures. Monitor stream flows. Photographic documentation. Provide maps of project locations to BPA for inclusion in GIS database. ODFW personnel will attend training , that enhance performance of project tasks

PROJECT COMPLETION DATE:

15 years from date last riparian lease is signed.

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

Landowner leases. This project occurs on private lands, and work is authorized through the use of 15 year riparian leases with private landowners. Landowner acceptance and cooperation are necessary on private lands to allow for implementation of improvement activities. Permits. Fill and removal permits or waivers from the Oregon Division of State Lands must be obtained before any instream fish habitat work is performed.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

Expected performance of target population or quality change in land area affected:

oposed in this program, which were implemented on about 10 miles of flood damaged streams in the Fifteenmile basin in 1975. Monitoring of this work has found: 1) dramatic increases in stream surface shading; 2) reduction of severe bank erosion in treated areas; 3) re-establishment of dense riparian vegetation and general increases in use by riparian-dependent wildlife species; and 4) strong support for continued treatment by more than 90 % of landowners involved in the initial 1975 efforts. Expected high levels of landowner cooperation and support, coupled with 15 year easements granted to ODFW for treatment areas, suggest that benefits of the basin improvement program should be substantial and long lasting.

Present utilization and convservation potential of target population or area:

There is currently no harvest on this stock in the Fifteenmile basin. Outside of the basin it is unknown what the harvest is.

Assumed historic status of utilization and conservation potential:

Unknown

Long term expected utilization and conservation potential for target population or habitat:

A variety of benefits are projected to result from implementation of the Fifteenmile Habitat Restoration Project. Increases in average annual production of winter steelhead smolts are estimated to range from approximately 22,000 to 52,305. This is an average annual increase of 130 to 280 percent above basin's current smolt production. This projection reflects estimated changes in production resulting from implementation of projects proposed for BPA funding.. Average annual adult increases in returns to the mouth of Fifteenmile Creek are estimated at 1556-3340, using the U.S. v. Oregon smolt -adult survival of 7.1 percent. Increases in smolt production were determined from comparisons of pre- and post -treatment smolt abundance estimates. Pre-treatment smolt estimates are assumed to be equal to the current estimated smolt production capacity established for Fifteenmile Creek under U.S. v. Oregon. Post-treatment estimates assume full implementation of all BPA projects and a ten year recovery

period. They are based upon the quantity of suitable proposed low flow rearing habitat and two levels of habitat response to treatment (Low and High). Streams assigned to the "low" production class are those where less than full recovery is expected. The majority of this category occurs in the lower basin areas. Associated smolt densities used for these areas are only about 25 percent of those for "high" production area. "High" production areas are those where nearly full recovery is anticipated. Densities for these areas are generally conservative and derived from less productive "westside" streams such as Fish Creek, Wind River and the East Fork of the Lewis River. In fact, monitoring of juvenile abundance in areas treated in the Fifteenmile Creek following 1975 flooding has shown larger total increases than were estimated. In one sample section of about 300 yards in length on the upper main stem of Fifteenmile Creek, increases in total numbers of juvenile steelhead were more than 9-fold ten years after treatment. Additionally, the winter steelhead in the basin are extremely resilient, well-adapted wild stock. This stock has proven its resiliency over the last 10-15 years and are expected to show rapid response to improved passage and habitat conditions in the basin. This stock further benefits from having only one main stem dam (Bonneville) to negotiate.
In addition to increased fisheries production there will be: improvements to water quality (reduced sediment loads and summer water temperatures); improved bank stability (resulting from structural treatments and riparian restoration activities); significant increases in the amount and quality of riparian habitat benefiting many wildlife species; and increased landowner sensitivity and participation in riparian area and fish habitat management. These benefits are tangible and have been proven treatments, similar to those proposed in this program, which were implemented on about 10 miles of flood damaged streams in the Fifteenmile basin in 1975. Monitoring of this work has found: 1) dramatic increases in stream surface shading; 2) reduction virtual elimination of severe bank erosion in treated areas; 3) re-establishment of dense riparian vegetation and general increases in use by riparian-dependent wildlife species; and 4) strong support for continued treatment by more than 90 % of landowners involved in the initial 1975 efforts. Expected high levels of landowner cooperation and support, coupled with 15 year easements granted to ODFW for treatment areas, suggest that benefits of the basin improvement program should be substantial and long lasting.}

Contribution toward long-term goal:
Increased natural production of the eastern most run of wild winter steelhead in the Columbia River basin.

Indirect biological or environmental changes:
In addition to increased fisheries production there will be: improvements to water quality (reduced sediment loads and summer water temperatures); improved bank stability (resulting from structural treatments and riparian restoration activities); significant increases in the amount and quality of riparian habitat benefiting many wildlife species; and increased landowner sensitivity and participation in riparian area and fish habitat management. These benefits are tangible and have been proven treatments, similar to those proposed in this program, which were implemented on about 10 miles of flood damaged streams in the Fifteenmile basin in 1975. Monitoring of this work has found: 1) dramatic increases in stream surface shading; 2) reduction of severe bank erosion in treated areas; 3) re-establishment of dense riparian vegetation and general increases in use by riparian-dependent wildlife species; and 4) strong support for continued treatment by more than 90 % of landowners involved in the initial 1975 efforts. Expected high levels of landowner cooperation and support, coupled with 15 year easements granted to ODFW for treatment areas, suggest that benefits of the basin improvement program should be substantial and long lasting.

Physical products:
4.9 miles of stream with riparian lease, but no riparian fence. Approximately 96 miles of riparian protection fence. Approximately 48 miles of stream protected. 899 fish habitat structures on 19.8 miles of stream. Six fish passage structures. 90 plus fish protection screens

Environmental attributes affected by the project:
Currently there are thermographs deployed through out the Fifteenmile basin, temperatures are monitored hourly. Over time we should be able to document changes in water temperature due to riparian increased shading and channel recovery. We currently monitor flows at 6 sites with in the basin. Flows are taken three times a year in, May, August, and October. Over time we hope to be able to document attributable changes in flow regime. With the elimination or restriction of livestock grazing riparian areas should respond quickly. By changing the land use along the stream from an annual crop to a perennial crop should help reduce the amount of sediment delivered to the stream.

Changes assumed or expected for affected environmental attributes:
Near term. Elimination of livestock grazing in riparian area, reduced sedimentation from adjacent crop lands, increased shading, increased pool habitat, increased rearing habitat, increase in available spawning habitat. Long term. A healthy and productive stream and riparian area.

Measure of attribute changes:
We cannot address this question as presented however, sedimentation is being addressed in the following ways by ODFW, SWCD and the NRCS; construction of mid slope terraces, addition of grassed water ways, conservation tillage practices on adjacent farm land, strip crop farming where applicable, and the elimination of livestock grazing in riparian areas. In addition, bank stabilization projects using rock jetties, deflectors, trees, root wads, and some bio-engineering have been incorporated to address bank erosion.

Assessment of effects on project outcomes of critical uncertainty:
By a more detailed monitoring and evaluation project sometime in the future if funding is available.

Information products:
The Fifteenmile Habitat Restoration Project has produced and distributed a video to landowners and other agencies describing the Fifteenmile Creek project. This video tape helps describe the project objective's, efforts, benefits, and is also used to help landowners understand how riparian areas function. It explains to them what conservation practices are available and where to find them.

Coordination outcomes:
The following coordination outcomes have been accomplished; 71 riparian leases with private landowners, a good working relationship with the Wasco County Soil and Water Conservation District (SWCD), Natural Resource Conservation Service (NRCS), Confederated Tribes of the Warm Springs Reservation, Bonneville Power Administration (BPA), and the National Marine Fisheries Service (NMFS), United States Forest Service (USFS).

MONITORING APPROACH
The goal of the Fifteenmile Habitat restoration project is to increase production of winter steelhead within the Fifteenmile Creek Basin using habitat protection and enhancement measures. Results should be measured by amount, quality, and quantity of habitat provided as set forth in the current work statement.

Provisions to monitor population status or habitat quality:
g livestock watergaps, will be visually monitored at least once per month throughout the year. During periods of heavy livestock usage or inclement weather, fences will be monitored more frequently. All damage from livestock, wildlife, weather and vandalism will be documented. Monitor, bank stabilization and instream habitat structures: All instream fish habitat structures will be inspected following spring high flows. All damage to or failure of fish habitat or bank stabilization will be documented. Repairs to structures will only be made if necessary to protect riparian fence or if failure is about to cause damage to valuable crop lands.Monitor stream temperatures: Thermographs are deployed at 10 locations throughout the Fifteenmile Basin. Five are installed in Fifteenmile Creek, four on Eightmile Creek, and one on Ramsey Creek. All data will be downloaded into computer and summarized monthly.Monitor stream flows: Stream flows are monitored at six (6) different locations throughout the Fifteenmile Creek Basin. Flow will be measured during stable flow conditions. Flows are taken during the months of May, August, and October.Photographic documentation: Photo point documentation are taken at 41 established locations throughout the Fifteenmile Basin. Photo point pictures will be taken in late September under low flow and high vegetation growth conditions.Fish Passage Structures: Six fish passage structures are monitored at least weekly to insure the fish are able to pass man made barriers.Spawning Ground Surveys: Spawning ground surveys are conducted annually. Results are analyzed and compared with previous years data.Fish Protection Screens: Fish protection screens are monitored weekly at gravity and irrigation pump withdraws, to assure desired fish protection is achieved.

Data analysis and evaluation:
Data will be analyzed, evaluated and compared to previous years data.

Information feed back to management decisions:
Through normal channels, i.e., reports, memos and presentations

Critical uncertainties affecting project's outcomes:
Those critical uncertainties that are beyond this projects control are being addressed by other agencies, i.e. SWCD, NRCS

EVALUATION

Results should be measured by amount, quality, and quantity of habitat provided as set forth in work statement. This will be difficult to do without a better monitoring program than we currently have in place.

Incorporating new information regarding uncertainties:

New information would be incorporated immediately, if it would affect the project in a positive manner.

Increasing public awareness of F&W activities:

Through continued involvement with area schools, private landowners, civic groups and interested persons.

RELATIONSHIPS

RELATED BPA PROJECT	RELATIONSHIP
8805304 Hood River Production Program - Odfw - M&E	Share office space only
9402000	Share equipment, and some personnel
9304500 Buck Hollow Watershed Enhancement (odfw)	Share office space, equipment, and some personnel

OPPORTUNITIES FOR COOPERATION:

We currently share manpower, equipment, and tools with the Trout Creek Project 940200, Buckhollow Project 9304500, and the Hood River Project 8805304. On the Fifteenmile Creek Project we currently have 59 private landowner cooperators that have signed 15 year riparian habitat leases. There is a large amount of cooperation on this project. The success of this project depends on cooperation with private landowners and other agencies such as the Wasco County Soil and Water Conservation District, The U.S. Forest Service, The National Resource Conservation Service, The Confederated Tribes of the Warm Springs Reservation, and the Bureau of Land Management.

COSTS AND FTE

1997 Planned: $314,506

FUTURE FUNDING NEEDS:

FY	$ NEED	% PLAN	% IMPLEMENT	% O AND M
1998	$300,000	7%	33%	60%
1999	$200,000			100%
2000	$200,000			100%
2001	$200,000			100%
2002	$225,000			100%

PAST OBLIGATIONS (incl. 1997 if done):

FY	OBLIGATED
1995	$319,835
1996	$287,845
TOTAL:	$607,680

Note: Data are past obligations, or amounts committed by year, not amounts billed. Does not include data for related projects.

OTHER NON-FINANCIAL SUPPORTERS:

(U.S Forest Service, Confederated Tribes of The Warm Springs Reservation, Oregon Division of State Lands, Northwest Service Academy, Oregon Water Trust, Oregon Department of Water Resources, U.S. Fish & Wildlife, National Resource Conservation Service, and some volunteers are used from time. to time.)

LONGER TERM COSTS:

$225,000 per year through 2013, (Last lease will be signed in 1998) operation and maintenance only.

1997 OVERHEAD PERCENT: 20.5 %

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:
Applies personal services and services and supplies only, does not apply to contractual services

CONTRACTOR FTE: 7 FTE

SUBCONTRACTOR FTE: .11 FTE

SUPPLEMENTAL ANADROMOUS FISH EVALUATION FACTORS:
The Fifteenmile Creek supports the eastern most stock of wild winter steelhead (Oncorhynchus mykiss) in the Columbia basin . The current steelhead population is depressed below historic levels. Steelhead production within the Fifteenmile basin is limited primarily by habitat deficiencies within the Fifteenmile Creek Basin and secondarily by passage problems at Bonneville Dam on the mainstem Columbia.The Fifteenmile Creek basin is located in north central Oregon and drains an area of approximately 238,720 acres. Fifteenmile Creek enters the Columbia downstream of The Dalles dam at river mile 192. Fifteenmile Creek is a 5th order class 1 stream . Fifteenmile Creek flows are described as high early spring runoff from melting snowpack in the higher elevations, combined with spring rainstorms followed by low summer flow. Average annual precipitation with the basin ranges from 10-45 inches. About 80 percent of the precipitation occurs from October to March. In the upper basin the flora is primarily dominat

SUPPLEMENTAL RESIDENT FISH EVALUATION FACTORS:
See Anadromous section