

# HOOD RIVER PRODUCTION PROGRAM - ODFW - M&E

8805304

## SHORT DESCRIPTION:

Monitor and evaluate the various actions, implemented under the Hood River Production Program (HRPP), to re-establish spring chinook salmon in the subbasin and to improve natural production of summer and winter steelhead. Data collected by this component of the HRPP will be used to develop guidelines for optimizing benefits associated with HRPP and to minimize the programs impact on indigenous populations of fish.

## SPONSOR/CONTRACTOR: ODFW

Oregon Department of Fish and Wildlife  
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## SUB-CONTRACTORS:

Confederated Tribes of the Warm Springs Reservation of Oregon

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## GOALS

### GENERAL:

Maintains biological diversity, Maintains genetic integrity, Increases run sizes or populations, Adaptive management (research or M&E)

### ANADROMOUS FISH:

Research, M&E

### NPPC PROGRAM MEASURE:

7.4L.1; 7.4L.2; 7.4N.1; 7.4N.2

### RELATION TO MEASURE:

NPPC program measures identify the need to implement the Hood River Production Program (HRPP). This project is the monitoring and evaluation component of this program. Tasks identified in the Statement of Work for this project identify work designed to collect the information needed to 1) evaluate the HRPP and 2) develop biologically sound strategies for implementing the HRPP and for optimizing benefits associated with the HRPP.

### OTHER PLANNING DOCUMENTS:

Columbia River Intertribal Fish Commission. 1996. Wy-Kan-Ush-Mi Wa-Kish-Wit. Spirit of the Salmon. The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes. Portland, Oregon, Volume II: 25-26.

### TARGET STOCK

Deschutes/Spring Chinook  
Hood River/Winter Steelhead  
Hood River/Summer Steelhead

### LIFE STAGE

Juvenile/smolt production  
Juvenile/smolt production  
Juvenile/smolt production

### MGMT CODE (see below)

SE  
SW  
SW

### AFFECTED STOCK

Rainbow trout

### BENEFIT OR DETRIMENT

Unknown

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## BACKGROUND

### Stream name:

Hood River

### Subbasin:

Hood River

### Acres affected:

40

**Project is an office site only**

### HISTORY:

The Northwest Power Planning Council approved the Hood River and Pelton ladder master plans in 1992. The program impleme

nted in the Hood River subbasin was initially called the Hood River Production Program (HRPP) and was designed to improve natural production of summer and winter steelhead and re establish spring chinook salmon in the subbasin. ODFW began funding the wild winter steelhead component of the program in December, 1991 along with the collection of pre implementation data on life history and production information. BPA began funding the monitoring and evaluation component of HRPP in August of 1992 and began preparing the programs EIS in 1995; which was completed in the spring of 1996. The HRPP includes the development of hatchery facilities in the subbasin. A road to the proposed Powerdale Dam hatchery collection facility was completed in 1996 and acclimation sites were built and operated in the spring of 1996. Construction of the Powerdale Dam collection facility was approximately 98% completed in 1996 and final work was completed by January of 1997. Modifications to the programs rearing facilities in Pelton ladder were completed in the fall of 1995. The HRPP is a coordinated effort between ODFW and CTWS.

#### **BIOLOGICAL RESULTS ACHIEVED:**

A monitoring and evaluation program was begun in December of 1991 to collect the life history and production information needed to evaluate the HRPP and develop guidelines which will provide the greatest degree of protection to the native stocks of fish. We are currently collecting information on natural production, smolt to adult survival, escapement, harvest, life history, and several morphological and meristic parameters needed to characterize wild and hatchery stocks of summer and winter steelhead and natural and hatchery stocks of spring chinook salmon. Data collected to date has more accurately defined 1) the spatial distribution of spawning and rearing populations of anadromous salmonids; 2) the current status of indigenous populations of summer and winter steelhead; 3) potential impacts the historical subbasin hatchery program may have had on indigenous populations of fish; 4) the status of presently available anadromous salmonid habitat in the subbasin; 5) smolt to adult survival; and in-basin post-release survival of hatchery production releases. Information has been used to refine our approach for releasing hatchery smolts into the subbasin and for implementing the Hood River Production Program. Current data showing critically low escapements and natural smolt production also indicate the need to implement this program in a timely manner.

#### **PROJECT REPORTS AND PAPERS:**

Olsen, E.A., R.A. French, and J.A. Newton. 1994. Hood River and pelton ladder evaluation studies. Annual Progress Report of Confederated Tribes of the Warm Springs Reservation and Oregon Department of Fish and Wildlife (Project Numbers 89 29, 89 29 01, 89 053 03, 89 053 04, and 93 019; Contract Numbers DE BI79 89BP00631, DE BI79 89BP00632, DE BI79 93BP81756, DE BI79 93BP81758, DE BI79 93BP99921) to Bonneville Power Administration, Portland, Oregon.

Olsen, E.A., R.A. French, and A.D. Ritchey. 1995. Hood River and pelton ladder evaluation studies. Annual Progress Report of Oregon Department of Fish and Wildlife and Confederated Tribes of the Warm Springs Reservation (Project Numbers 88 29, 89 29 01, 89 053 03, 89 053 04, and 93 019; Contract Numbers DE BI79 89BP00631, DE BI79 89BP00632, DE BI79 93BP81756, DE BI79 93BP81758, DE BI79 93BP99921) to Bonneville Power Administration, Portland, Oregon.

Olsen, E.A., R.A. French, and A.D.Ritchey. 1996. Hood River and pelton ladder evaluation studies. Annual Progress Report of Oregon Department of Fish And Wildlife (Project Numbers 88 29, 89 29 01, 89 053 03, 89 053 04, and 93 019; Contract Numbers DE BI79 89BP00631, DE BI79 89BP00632, DE BI79 93BP81756, DE BI79 93BP81758, DE BI79 93BP99921) to Bonneville Power Administration, Portland, Oregon.

Oregon Department of Fish and Wildlife and Confederated Tribes of the Warm Springs Reservation of Oregon. 1990. Hood River subbasin salmon and steelhead production plan. Columbia Basin System Planning Report to Northwest Power Planning Council, Portland, Oregon.

O'Toole, P. and Oregon Department of Fish and Wildlife. 1991. Hood River production master plan. Final Report of the Confederated Tribes of the Warm Springs Reservation and the Oregon Department of Fish and Wildlife (Project 88 053, Contract DE BI79 89BP00631) to Bonneville Power Administration, Portland, Oregon.

O'Toole, P. and Oregon Department of Fish and Wildlife. 1991. Hood River production master plan (Appendices). Final Report of the Confederated Tribes of the Warm Springs Reservation and the Oregon Department of Fish and Wildlife (Project 88 053, Contract DE BI79 89BP00631) to Bonneville Power Administration, Portland, Oregon.

Smith, M. and Confederated Tribes of the Warm Springs Reservation of Oregon. 1991. Pelton ladder master plan. Final Report of the Oregon Department of Fish and Wildlife and the Confederated Tribes of the Warm Springs Reservation (Project 89 029, Contract DE BI79 89BP01930) to Bonneville Power Administration, Portland, Oregon.

Oregon Department of Fish and Wildlife and Confederated Tribes of the Warm Springs. Undated. Hood River/Pelton ladder master agreement. Project Plan of Oregon Department of Fish and Wildlife and Confederated Tribes of the Warm Springs Reservation of Oregon (Project 89 029; Contract DE BI79 93BP81758) to Bonneville Power Administration, Portland, Oregon. (Unpublished draft.)

Bonneville Power Administration. 1996. Draft environmental impact statement. Bonneville Power Administration (Contract DOE/EIS 0241), Portland, Oregon.

#### **ADAPTIVE MANAGEMENT IMPLICATIONS:**

We are currently in the process of collecting baseline information which will be used to evaluate the HRPP. Preliminary information gathered from the monitoring and evaluation studies has been used to modify and refine guidelines for implementing the HRPP and has shown the necessity for implementing the HRPP in a timely manner. Radio telemetry work has shown that the East and Middle forks of the Hood River are primarily utilized by winter steelhead and that the West Fork of the Hood River is primarily utilized by summer steelhead and spring chinook salmon. This information has been used to identify where hatchery smolts will be released in the subbasin. The low post release survival rate observed for hatchery summer and winter steelhead smolt releases (i.e. 30-50%) showed the need for developing acclimation facilities for improving survival subsequent to release. Acclimation facilities were developed in 1996 for hatchery winter steelhead and spring chinook salmon. Preliminary data for in-basin post-release survival of hatchery winter steelhead indicates that the survival rate was increased from approximately 30-40% to around 60-70% as a result of acclimation. Critically low and declining escapements of summer and winter steelhead, and the low estimates of wild steelhead smolt production, indicate the need to quickly implement the HRPP. ODFW's implementation of the native winter steelhead hatchery brood stock collection program, at a reduced level, has provided the basis for developing hatchery guidelines that will be used for fully implementing the native winter steelhead program under the HRPP. Habitat data is currently being evaluated to identify opportunities for increasing natural production in selected areas of the drainage. Data collected on streamflows in the East Fork of the Hood River indicate the need to take a more proactive approach towards enforcing existing water rights with the goal of providing a greater degree of protection for indigenous populations of fish.

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## **PURPOSE AND METHODS**

#### **SPECIFIC MEASUREABLE OBJECTIVES:**

The monitoring and evaluation studies are designed to provide the information needed to effectively implement the HRPP. Four broad categories of information will be collected to evaluate whether or not the HRPP is achieving its stated goals and objectives. Our management plan proposes collecting pre and post treatment data on smolt to adult survival, natural production (smolts), spawner escapements, harvest, various morphometric and meristic characteristics, juvenile rearing distribution, and temporal and spatial distribution of adult holding and spawning. Estimates of the in-basin post release survival rate and the smolt to adult survival rate will be used to evaluate the supplementation program and to develop methodologies for optimizing survival of the production releases. Estimates of subbasin smolt production will be monitored to evaluate whether or not we are increasing natural production. Estimates of spawner escapement will be used to determine whether or not we can achieve juvenile rearing capacity. Estimates of harvest will be used to monitor the fishery and to estimate subbasin escapement. A comparison of life history information and morphological and meristic characteristics of wild and hatchery stocks will be used to determine if 1) the genetic makeup of hatchery broodstock significantly deviates from the indigenous population and 2) the genetic makeup of indigenous populations has been impacted as a result of the HRPP. Information on the distribution of rearing juveniles and the temporal and spatial distribution of adult holding and spawning will be used to minimize the interaction between wild and hatchery fish.

#### **CRITICAL UNCERTAINTIES:**

Critical uncertainties associated with the HRPP primarily center around our ability to implement a program that will have minimal impact on the wild population. Areas of primary concern include the following:

- 1) Hatchery broodstock is collected from throughout the entire run and juvenile hatchery production is not graded out prior to release. This combination of actions increases the potential that juveniles will not be at a typical smolt size at time of release and that the percentage of hatchery juveniles that residualize will be higher as a consequence. The extent to which residualism occurs will increase the potential for interaction between wild and hatchery juveniles and will reduce the post release survival rate.
- 2) Modifications are being made to the Powerdale Dam fish ladder as part of the overall development of the hatchery collection facilities. It is assumed that the modified ladder will not delay or impede passage of jack and adult salmonids above the dam. Further changes to the ladder may be necessary if passage is a problem.
- 3) The historical hatchery summer and winter steelhead program was implemented using out of basin stocks. The early run Big Creek stock of winter steelhead used as hatchery broodstock is not thought to have had a genetic impact on the native population because the Big Creek stock appears to spawn much earlier than the native population. The similarity in run timing between the wild Hood River stock of summer steelhead and the early run timing of the Skamania stock of hatchery summer steelhead used in the historical hatchery program indicates that some introgression of Skamania stock genes may have occurred in the wild

population. This is based on the belief that wild Hood River stock summer steelhead, historically, had a much later run timing. The degree to which there was interaction between the wild and Skamania stocks of summer steelhead will influence the timeframe required to develop a hatchery stock similar to the native Hood River stock.

**BIOLOGICAL NEED:**

The primary goal of the HRPP is to restore wild runs of summer and winter steelhead and to re introduce spring chinook salmon in the Hood River subbasin. The historical hatchery supplementation program utilized Skamania stock summer steelhead, Big Creek stock winter steelhead, and Carson stock spring chinook salmon. The HRPP would utilize wild stocks of summer and winter steelhead to develop hatchery broodstock with the primary goal of developing a hatchery fish that is more genetically similar to the indigenous populations. Deschutes stock hatchery spring chinook salmon would be used by the HRPP because it is felt that this stock is the most suitable stock available for developing the hatchery spring chinook salmon program in the Hood River subbasin. We are also proposing to 1) collect hatchery broodstock from throughout the run, 2) not gradeout juvenile fish in the hatchery production groups, and 3) rear spring chinook salmon in Pelton ladder. This combination of actions is designed to produce a high quality hatchery smolt that is genetically similar to the wild population. Because of current funding constraints, it is doubtful that this more biologically sound approach could be implemented by ODFW without funding from BPA.

**HYPOTHESIS TO BE TESTED:**

1. Null Hypothesis: Run size and spawner escapement goals in the Hood River Master Plan have not been achieved.  
Alternative: Run size and spawner escapement goals in the Hood River Master Plan have been achieved.
2. Null Hypothesis: Post project implementation smolt production is not significantly greater than pre project implementation.  
Alternative: Post project implementation smolt production is significantly greater than pre project implementation.
3. Null Hypothesis: Post release survival of acclimated smolts is not significantly greater than pre project releases of hatchery smolts directly released into the subbasin.  
Alternative: Post release survival of acclimated smolts is significantly greater than pre project releases of hatchery smolts directly released into the subbasin.
4. Null Hypothesis: Implementation of the HRPP has significantly altered the genetic makeup of indigenous populations of fish.  
Alternative: Implementation of the HRPP has not significantly altered the genetic makeup of indigenous populations of fish.
5. Null Hypothesis: The genetic makeup of the hatchery broodstock significantly deviates from the corresponding native population from which it was derived.  
Alternative: The genetic makeup of the hatchery broodstock does not significantly deviate from the corresponding native population from which it was derived.

**METHODS:**

The HRPP will primarily be evaluated using the following techniques:

- 1) Scoop traps will be operated at sites located in each major fork of the Hood River and in the mainstem Hood River to estimate numbers of wild anadromous salmonid smolts and fingerling production leaving each fork and leaving the Hood River subbasin and to estimate the numbers of hatchery smolts leaving the subbasin (i.e. in basin post release survival). Numbers of smolts and fingerlings passing each scoop trap will be estimated using the Peterson mark and recapture methodology. Pre and post implementation estimates of wild smolt production will be compared to determine if natural production has increased.
- 2) An adult collection facility will be operated at Powerdale Dam to monitor spawner escapement. All fish must pass through the collection facility to pass above Powerdale Dam and the sport fishery primarily occurs below Powerdale Dam. Spawner escapement will be monitored to determine if the HRPP's spawner escapement goal is achieved.
- 3) A creel will be conducted below Powerdale Dam in order to estimate harvest and escapement to the Hood River subbasin (i.e. spawner escapement plus harvest). Standard pressure counts will be conducted on two weekdays and one weekend day each week. Daily harvest will be estimated using the area under the curve methodology. Harvest and subbasin escapement will be monitored to determine if the HRPP's goals are being met for each of these parameters.
- 4) Selected life history patterns and morphometric and meristic characteristics will be monitored for wild and hatchery summer and winter steelhead to evaluate the HRPP's impact on the wild populations and to evaluate how closely the hatchery population resembles the wild population based on the selected parameters. Wild and hatchery components of the adult steelhead run will be sampled at Powerdale Dam to estimate mean fork length and weight, freshwater and ocean age patterns, sex ratio, and run timing. Estimates for wild and hatchery adults will be compared to determine if the two components of the run are dissimilar. Estimates will be monitored through time to determine if the selected parameters have change for the wild run as a result of hatchery supplementation.
- 5) Wild and hatchery smolt steelhead will be coded wire tagged (CWT'd) to monitor smolt to adult survival rates, adult straying harvest in the mainstem Columbia River, and hatchery rearing strategies. Wild steelhead smolts will be CWT'd at scoop traps

located at selected sites in the Hood River subbasin and hatchery smolts will be CWT'd at Oak Springs Hatchery (i.e. summer and winter steelhead) and Round Butte Hatchery (i.e. spring chinook salmon). Tags will be recovered in Columbia River Basin fisheries and from a creel conducted in the Hood River subbasin.

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## PLANNED ACTIVITIES

### SCHEDULE:

**Planning Phase**            **Start** 07/01/96            **End** ongoing            **Subcontractor**

**Task** Monitor streamflow at selected sites in the Hood River subbasin.

**Planning Phase**            **Start** 12/01/91            **End** ongoing            **Subcontractor**

**Task** Estimate morphometric, meristic, and life history characteristics of juvenile and adult spring chinook salmon and summer and winter steelhead.

**Planning Phase**            **Start** 07/01/94            **End** ongoing            **Subcontractor**

**Task** Estimate juvenile rainbow-steelhead rearing densities.

**Planning Phase**            **Start** 12/01/91            **End** ongoing            **Subcontractor**

**Task** Estimate jack and adult anadromous salmonid escapement to the Hood River.

**Planning Phase**            **Start** 01/01/96            **End** ongoing            **Subcontractor**

**Task** Estimate harvest in the Hood River subbasin.

**Planning Phase**            **Start** 03/25/94            **End** ongoing            **Subcontractor**

**Task** Estimate Hood River subbasin steelhead smolt production.

### PROJECT COMPLETION DATE:

Project is ongoing

### CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

There should be few risks associated with implementing the HRPP given the proposed scenario for implementing the program. Social and political risks should be minimal based on the strong support we have received to date from PacifiCorp, the various irrigation cooperatives, and local area sportfishers. The utilities, irrigation cooperatives, and Longview Fibre have also provided access to their property either for purposes of monitoring and evaluation or the development of facilities needed to implement the HRPP. Cooperation in this area has been crucial to implementing the HRPP because of the limited access available in the Hood River subbasin. There may be some biological risks associated with the HRPP but hatchery guidelines are being developed to minimize those risks. Guidelines will be based on information collected from an ongoing monitoring and evaluation program. Our primary goal is to minimize the impact on wild populations of summer and winter steelhead. There are no biological risks associated with the spring chinook salmon program because the native population has been extirpated. Guidelines established for implementing the HRPP are designed to minimize biological risks associated with the summer and winter steelhead programs by 1) developing the hatchery broodstock from adults collected from throughout the wild run to the Hood River subbasin, 2) not grading out smaller juveniles in the production groups, 3) limiting production releases of each race to those forks where the population is principally located, and 4) releasing production groups at the lower end of the distribution of the population. The combined effect of these, and other, actions should minimize the impact the supplementation program has on the wild populations of steelhead.

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## OUTCOMES, MONITORING AND EVALUATION

### SUMMARY OF EXPECTED OUTCOMES

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

The HRPP's primarily goals and objectives include the following: 1) Improve wild summer and winter steelhead escapements and re introduce spring chinook salmon, 2) ensure that hatchery broodstock is genetically similar to the wild runs by developing hatchery broodstock from wild Hood River stock fish escaping to Powerdale Dam, 3) complete construction of hatchery collection facilities at Powerdale Dam and the isolation, incubation, and rearing facilities at Oak Springs Hatchery; adult holding and

spawning facilities at Parkdale; and rearing facilities at Pelton ladder, 4) develop temporary acclimation facilities in each major fork of the Hood River subbasin, 5) develop biologically based guidelines for implementing the HRPP based on data collected from the monitoring and evaluation studies, 6) identify and implement habitat improvement projects that will enhance project benefits, and 7) increase harvest opportunities in both tribal and non tribal fisheries.

**Contribution toward long-term goal:**

This project provides funding for a monitoring program designed to optimize the benefits associated with the Hood River Production Program. Data provided by this project will help to 1) minimize the hatchery programs impact on wild populations, 2) develop hatchery guidelines that will improve smolt to adult survival for hatchery production releases, and 3) optimize benefits associated with the various tasks designed to improve wild and natural production of anadromous salmonids in the Hood River subbasin.

**Assessment of effects on project outcomes of critical uncertainty:**

Critical uncertainties associated with this project are primarily limited to problems arising due to inclement weather and the relative inaccessibility of the Hood River subbasin. Periodic flooding in the spring makes it difficult to accurately estimate smolt production and depending on the periodicity of flooding increases the risk that we will lose our traps. The relative inaccessibility of the subbasin makes it difficult to effectively implement the sampling program in a manner that will achieve project goals.

**Information products:**

This project primarily implements tasks designed to monitor and evaluate the Hood River Production Program (HRPP). The product deliverable is an Annual Progress Report that provides a summary of data collected, to date, on the HRPP.

**Coordination outcomes:**

The sequence of milestones were: 1. Hood River Master Plan; 2. Hood River / Pelton Ladder Master Agreement (outlines work schedules); 3. Initiation and near completion of baseline studies for evaluating the Hood River Production Program; 4. Completion of NEPA analysis and EIS in 1996, 5. Completion, in 1996, of road construction to the proposed Powerdale Dam facility, 6) Development of acclimation facilities for winter steelhead and spring chinook salmon, and 7. Completion, in 1997, of the proposed Powerdale Dam facility.

**MONITORING APPROACH**

(See Methods)

**Provisions to monitor population status or habitat quality:**

Scoop traps are being used to monitor steelhead and spring chinook salmon smolt production and juvenile population numbers and biomass are estimated at selected sites in the subbasin. All jack and adult salmonids are counted at Powerdale Dam to estimate spawner escapement and harvest estimates are made below Powerdale Dam to estimate escapement to the Hood River subbasin.

**Data analysis and evaluation:**

A statistical analysis of data collected prior to, and after, implementation of the Hood River Production Program (HRPP) will be made to evaluate how effectively program goals have been met and what steps may be necessary to optimize the benefits associated with the HRPP.

**Information feed back to management decisions:**

Data collected by this project will be used to develop guidelines for implementing the Hood River Production Program. Research and management components of the HRPP are closely coordinated and recommendations for implementing the HRPP are made on an annual basis, as well as when new information becomes available.

**EVALUATION**

**Increasing public awareness of F&W activities:**

The primary function of this project is to collect information that can be used to evaluate the Hood River Production Program and to provide information that can be used to more effectively implement the HRPP. The product deliverable is an Annual Progress Report which contains a summary, of the data collected, and management recommendations for implementing the HRPP. These reports have been requested by, and provided to, sport fishers who are interested in both current and long term estimates of annual escapements of jack and adult anadromous salmonids to the Hood River subbasin.

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## **RELATIONSHIPS**

### **RELATED BPA PROJECT**

9507000

9301900 Design/Construct Parkdale Facilities, Complete Oak Springs Construction , Operate and Maintain Facilities (hood River Production Program)

8905303

8802900

### **RELATIONSHIP**

Portland General Electric O&M component of HRPP: Hood River hatchery spring chinook salmon production will be spawned and reared at Round Butte Hatchery (RBH) which is funded by PGE. This project will collect, from RBH, basic hatchery information such as egg take, females and males spawned, smolts released, condition factors, etc. and maintain and report the information.

Powerdale Construction component of HRPP: This is the engineering component of the HRPP. Several facilities built as part of the HRPP will be monitored and evaluated as part of this project. Data will be used in developing guidelines for operating the facilities.

Confederated Tribes of the Warm Springs Indians (CTWS) component of HRPP: Completion of program tasks require the close integration of tasks implemented by both this project and the CTWS; a cooperating agency on the Hood River Production Program.

Pelton Ladder component of HRPP: Hood River hatchery spring chinook salmon production will be finished reared in Pelton Ladder prior to release in the subbasin. This project will evaluate post-release survival.

### **OPPORTUNITIES FOR COOPERATION:**

The HRPP is composed of five separate contracts that could impact the program if one or more contracts are not fully funded according to schedule. The five contracts primarily provide funding for three broad categories of activities. These include engineering, implementation, and monitoring and evaluation studies. Funding for the engineering component of the HRPP provides for the design and construction of facilities at Powerdale Dam, Parkdale, and Oak Springs Hatchery that are required to fully implement the HRPP. Funding for implementation provides for broodstock collection, holding and spawning, rearing, and marking and tagging. Funding for monitoring and evaluation studies provides for the evaluation of the HRPP and any interaction the hatchery program may be having on wild populations of fish. Inadequate, or loss of, funding for any component will jeopardize our ability to achieve project goals according to the timeframe established in the EIS. This is particularly crucial for construction work proposed for FY 97. The proposed adult holding and acclimation facilities at Parkdale are required to begin implementing the summer steelhead and spring chinook programs. Completion of hatchery facilities at Oak Springs Hatchery also needs to coincide with completion of the Parkdale facilities before we can begin implementing the summer steelhead program. The winter steelhead program could be implemented without the Parkdale facilities but at a much lower level than proposed for full implementation of the HRPP. The HRPP also relies heavily on the close cooperation of the USFS, PacifiCorp, CTWS, ODFW, Hood River Watershed Council, Farmers Irrigation District, East Fork Irrigation District, Middle Fork Irrigation District, and Longview Fiber. These various entities have supported project goals by way of 1) facilitating or allowing access to public and private lands, 2) providing consent to develop facilities on private lands, and 3) assisting in the implementation of project related tasks. Continued cooperation among these entities is crucial to achieving project goals.

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## **COSTS AND FTE**

**1997 Planned:** \$388,659

**FUTURE FUNDING NEEDS:**

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$400,000	60%	40%	
1999	\$412,000	60%	40%	
2000	\$424,000	60%	40%	
2001	\$437,000	60%	40%	

**PAST OBLIGATIONS (incl. 1997 if done):**

<u>FY</u>	<u>OBLIGATED</u>
1989	\$61,713
1990	\$117,316
1991	\$75,234
1992	\$46,168
1993	\$182,910
1994	\$642,288
1996	\$393,964
1997	\$418,839

TOTAL: \$1,938,432

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

**OTHER NON-FINANCIAL SUPPORTERS:**

Critical non-monetary support has been provided from various sources. PacifiCorp; the East Fork, Middle Fork, and Farmers Irrigation cooperative; Longview Fiber; and the Mount Hood National Forest have provided access to their property either for purposes of monitoring and evaluation or the development of facilities needed to implement the Hood River Production Program (HRPP). Access to public and private property owned by these entities has been critical for the HRPP to be successful because of the general inaccessibility to the Hood River subbasin.

It is anticipated that this project will continue beyond the year 2002 to complete tasks that were begun as part of the baseline data collection efforts implemented prior to the year 2000. Spring chinook salmon and summer and winter steelhead have a complex freshwater and ocean life history pattern. Juvenile anadromous salmonids can spend from 1-4 years in freshwater and from 1-4 years in the ocean. As a consequence, collecting complete brood year specific data sets on experimental groups of wild, natural, and hatchery broods sampled prior to the year 2002 will require continuation of this project beyond the year 2002. Collecting complete brood year specific information is important for drawing sound biological conclusions from the experimental groups. Annual costs associated with this project beyond the year 2002 are unknown.

**1997 OVERHEAD PERCENT:** 20.5

**HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:**

The indirect rate applies to personal services and services and supplies. The indirect rate does not apply to contractual services or to capital expenditures.

**CONTRACTOR FTE:** 5.2

**SUBCONTRACTOR FTE:** 0