

**U.S. FISH AND WILDLIFE SERVICE**

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**CHEHALIS RIVER FISHERIES RESTORATION PROGRAM  
FISCAL YEAR 1993 PROJECT SUMMARY**

**WESTERN WASHINGTON FISHERY RESOURCE OFFICE**

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**OLYMPIA, WASHINGTON**

**DECEMBER 1993**

## INTRODUCTION

A result of The Chehalis Basin Fishery Resources Study and Restoration Act of 1990 (Public Law 101-452) the Fish and Wildlife Service conducted a comprehensive study of Chehalis River Basin fishery resources, and developed recommendations for Chehalis fishery resources restoration in cooperation with the State, concerned tribes, and the public. In an initial report to Congress (Hiss and Knudsen 1992), The U.S. Fish and Wildlife Service presented the following goal for Chehalis Basin salmon and steelhead restoration;

**"to optimize natural salmon and steelhead production while maintaining the existing genetic adaptation of wild spawners and allowing the highest compatible level of hatchery production".**

In another report, the Service completed a survey of habitat degradations in over 1500 miles of anadromous fish habitat (Wampler et al. 1993.). Thousands of degradations were recorded in a GIS-based mapping system. These reports serve as guidance for habitat restoration.

Report recommendations are being implemented through the Chehalis Fisheries Restoration Program (CFRP). Through a multi-agency review process, project proposals were given a technical ranking. These rankings were forwarded to the Chehalis Fisheries Restoration Steering Committee where final funding recommendations were made. Upon approval of projects, cooperative agreements were established between various Cooperators and the Service. These documents describe the obligations of both parties. Project managers supervised most of the project activity. U.S. Fish and Wildlife Service served as technical advisors throughout the whole process.

A variety of projects were implemented in FY-93. The majority of projects were off-channel enhancement or restoration projects. There are plans to evaluate the effectiveness of these projects. The following list describes the CFRP efforts of FY-93.

### Project Summary

#### CHEHALIS BASIN FISHERIES TASK FORCE

##### Weyerhaeuser-Brisco Off-Channel Overwintering Habitat Enhancement

Enhancement of five abandoned gravel pits on the Wynoochee River consists mainly of woody debris placement into the ponds with varying densities and types (root wads, crowns or small trees, slash piles, floating or sinking bundles). Evaluation of fish distribution throughout the ponds will indicate preferred woody debris arrangement. A concrete-based weir was constructed in the lower egress channel for 6-year monitoring of adult and juvenile migration behavior to be conducted by Grays Harbor Community College Natural Resource students.

## Satsop Springs Spawning Channel

On the East Fork Satsop River, construction of two spawning channels totalling 545 feet in length (area = 9,575 ft<sup>2</sup>) was completed on October 25, 1993. Side channels and pools were added (area = 458 ft<sup>2</sup>) for adult cover and juvenile rearing.

## Marshall Ponds

Connection of two existing ponds (combined area = 8,720 ft<sup>2</sup>) to the South Fork Newaukum River for the creation of off-channel rearing habitat was completed in September. Log weirs were utilized for access into the ponds and large amounts of woody debris were added. Year-round flow through the ponds is maintained by diverting flow from an adjacent rearing pond.

## Long Live the Kings Off-Channel Rearing Enhancement

On the Wishkah River, excavation of five ponds (area = 17,148 ft<sup>2</sup>) and two connecting channels (area = 2,420 ft<sup>2</sup>) for off-channel rearing habitat was completed on October 20, 1993. Revegetation will take place in the fall and in the spring. First-use water will be diverted from the hatchery facility into an old cottonwood nursery. This impoundment area was designed to allow the pumped river water to assimilate off-channel habitat water quality before being released into the ponds. This off-channel area which will recruit wild coho and chinook juveniles.

## Merryman Environmental Learning Center Project

On the South Fork Newaukum River, an outlet channel from a fish rearing facility (area = 7,100 ft<sup>2</sup>) was enhanced to provide off-channel rearing. Replacement of a collapsed culvert provides wild juvenile salmonid access into this channel. The facility also functions as an educational center for area middle and high schools. An instructional trail adjacent to the enhanced habitat will be used for classroom instruction.

## Black River Salmon and Trout Habitat Enhancement

The original proposal to increase the complexity of habitat in the lower reaches of the Black River, by placement of instream structures, spawning gravels, etc., was modified to address important water quality issues. Two fencing projects are being completed. A "stream cleanup" was performed resulting in removal of one large dump truck full of debris and trash within a stream channel and off-channel area. Other livestock fencing projects are being developed.

## Akers Pond

This off-channel habitat enhancement and improved pond access project will provide a few acres of rearing habitat on the Wishkah River. Preliminary evaluations of this site have occurred. Design and engineering will occur in winter '93-'94 and project construction will occur in summer '94.

### Conway's Overwintering Pond

This project was recommended for preliminary investigations. Juvenile access to the ponds will be evaluated in winter '93.

### Mid-Wynoochee River Rearing Area Project

A change in land ownership has delayed development of this borrow pit reclamation project. This is a favorable project. Planning will continue in 1994.

### Bayview/McKinnel Salmonid Rearing Area

Funding was provided to investigate the impacts of connecting an extensive borrow pit network to the mainstem Chehalis River. The cooperators opted to shift these funds towards developing other projects.

### The "Fish Ladder", a monthly fisheries newsletter

Funding has increased circulation of the Fish Ladder publication throughout the Chehalis River Basin. The newspaper serves as an information source for fisheries enhancement activities in the Basin. A section is devoted to CFRP project activities.

## GRAYS HARBOR CONSERVATION DISTRICT

### Restoration Coordinator for Newman Sub-basin

A coordinator position was created to develop projects in the Newman-Mox Chehalis-Cloquallum Creeks sub-basin that address agricultural and livestock impacts. Two fencing projects have been approved for construction. Several landowners have been contacted and there have been a wide range of projects identified. These include more fencing, bioengineering, spawning gravel placement, wetland creation, and canary grass control in cooperation with the Conservation District.

### Mohney Creek Fish Passage Project and Rehabilitation

A culvert was placed to improve fish passage in Mohney Creek, a tributary to East Fork Wildcat Creek. Observations in recent years indicated stranding of adults in fields after flooding periods. The culvert allows passage into a stream channel with enhanced spawning and rearing.

### Marty Clark Property Fencing, Phase I and II

About 9,800 feet/(1.9 miles) of power livestock fencing will be installed. Phase I will eliminate multiple livestock access sites on Cedar Creek and the Chehalis River. Phase II will eliminate 19 livestock access sites and allow revegetation in the same impacted area. Both sites will be equipped with the proven Utina Model M Pasture Pump to allow watering of livestock. These projects will be implemented in January 1994.

## Restoration of Agricultural- and Livestock-Related Degradations

This ongoing program will address habitat degradations within the Newman Creek sub-basin. Projects will consist of streamside revegetation, fencing, bank stabilization, and tree planting.

### NATURAL RESOURCES CONSULTANTS, INC.

#### Off-Channel Habitat Inventory of the Lower Chehalis

An off-channel habitat inventory is being conducted on the main Chehalis River and flood plain from the Wishkah to the Satsop Rivers. Use of satellite imagery to identify off-channel habitat will be tested. An approach to a systematic evaluation of restoration potential for off-channel overwintering sites will be presented.

### LEWIS COUNTY CONSERVATION DISTRICT

#### Balmelli Livestock Fencing and Off-Channel Habitat

Two off-channel meanders were excavated and connected to Dillenbaugh Creek to provide rearing habitat. Woody debris was positioned in the channels and the banks were stabilized with jute matting and revegetated. Livestock fencing will be installed in January 1994. Livestock are currently prohibited from this project area until the fencing is complete.

#### Case-Doeman Fish Enhancement Project

Two off-channel alcoves were excavated to provide rearing habitat in Dillenbaugh Creek. The alcoves were excavated at depths to provide year-round rearing. Root wads were fastened within the alcoves.

#### Dillenbaugh Creek Model Watershed, Fisheries Enhancement Component

This ongoing program includes off-channel habitat enhancement, bank stabilizing and fencing projects on lands used for agricultural and livestock purposes. This project complements a Washington Ecosystems Project.

### WASHINGTON STATE DEPARTMENT OF FISHERIES

#### Mill Creek Fish Passage Restoration Project

The Washington Department of Fisheries constructed a bypass channel to improve anadromous fish access above a clay cascade that has blocked adult salmon and steelhead migration. About 3.7 miles of stream habitat has been made accessible to coho and steelhead.

## Employment Development

The CFRP maintains an emphasis on creating meaningful employment. During the first year of project implementation, the majority of jobs created were for a short-term basis. This was due to 1) the short-term nature of "project" type work, 2) wide geographic distribution of projects, and 3) multiple cooperators with limited amount of funding. Increased FY-94 funding in combination with the completed habitat degradation report will allow the cooperators to initiate restoration programs in which long-term employment is more feasible.

### ESTIMATED FISCAL YEAR 1993 JOB CREATION SUMMARY

Cooperator	Person/months	Support <sup>1</sup> Person/months
Chehalis Basin Fisheries Task Force	20	2
Grays Harbor Conservation District	2	1
Natural Resources Consultants, Inc.	0	1
Lewis County Conservation District	2	1
Washington Department of Fisheries	0	3
<b>TOTALS</b>	<b>26</b>	<b>8</b>

<sup>1</sup> supported previously existing position

## CFRP Developments

Current progress in GIS (Geographical Information System) applications will allow the Fish and Wildlife Service to conduct in-depth analysis of the Chehalis Basin habitat degradations. Incorporating other agency's databases (i.e. fish usage, wildlife usage, land usage, water quality profiles) will provide information needed to identify limiting factors of fish production on a sub-basin level.

The step-down plan contained in Hiss and Knudsen (1993) will continue to serve as the general guideline for CFRP. The majority of FY-94 funds are expected to address restoration/improvement of natural spawning or rearing habitat.

## FISCAL YEAR 1993 PROJECT SUMMARY

Cooperator	Project Name	System	Project Type	FWS Cost	Status
Chehalis Basin Fisheries Task Force	Weyerhaeuser-Brisco Off-Channel Enhancement	Wynoochee River	Borrow pit enhancement and evaluation	\$ 25,000	ongoing
Chehalis Basin Fisheries Task Force	Satsop Springs Spawning Channel	E. Fork Satsop River	Spawning channel with rearing capability	\$ 11,500	completed
Chehalis Basin Fisheries Task Force	Jack Marshall Ponds Access and Enhancement	S. Fork Newaukum River	Enhancement of two existing ponds	\$ 8,500	completed
Chehalis Basin Fisheries Task Force	Long Live the Kings Off-Channel Rearing Habitat	Wishkah River	Creation of off-channel habitat	\$ 32,780	completed
Chehalis Basin Fisheries Task Force	Merryman Environmental Learning Center Project	S. Fork Newaukum River	Channel enhancement with instructional trail	\$ 6,000	completed
Chehalis Basin Fisheries Task Force	Black River Salmon and Trout Habitat Enhancement	Black River drainage	Fencing, cleanups, at multiple sites	\$ 6,000	ongoing
Chehalis Basin Fisheries Task Force	Aker's Pond Off-Channel Habitat Enhancement	Wishkah River	Creation of perennial ponds for rearing.	\$ 4,500	planning
Chehalis Basin Fisheries Task Force	Conway's Overwintering Pond	Wishkah River	Improved access to wetland area.	\$ 4,500	investigate
Chehalis Basin Fisheries Task Force	Mid-Wynoochee River Rearing Area	Wynoochee River	Fish access to abandoned borrow pits	\$ 8,000	planning
Chehalis Basin Fisheries Task Force	Bayview/McKinnel Salmonid Rearing Area	Satsop/Chehalis River	Fish access to abandoned borrow pits	\$ 5,500	investigate
Chehalis Basin Fisheries Task Force	"The Fish Ladder" Restoration Newsletter	Basinwide	Monthly newspaper reporting fish enhancement	\$ 13,500	ongoing
Grays Harbor Conservation District	Restoration Coordinator	Newman Creek Subbasins	Part-time coordination of livestock and agricultural restoration projects	\$ 8,000	ongoing
Grays Harbor Conservation District	Marty Clark Fencing Project Phase I	Cedar Creek and Chehalis River	7,300 feet of fencing for livestock control	\$ 5,567	Jan. 1994
Grays Harbor Conservation District	Marty Clark Fencing Project Phase II	Cedar Creek	2,500 feet of fencing and 90 feet of revegetation	\$ 3,250	Jan. 1994
Grays Harbor Conservation District	Mohney Creek Fish Passage Project and Rehabilitation	Wildcat Creek	Culvert placement for adult passage	\$ 2,225	completed
Grays Harbor Conservation District	Agricultural and Livestock-Related Impact Projects	Newman Creek Subbasin	Bank impact restoration projects	\$ 18,958	ongoing
Natural Resources Consultants, INC.	Off-Channel Habitat Inventory	Lower Chehalis Mainstem	Inventory of off-channel habitat	\$ 32,000	Mar. 1994

Lewis County Conservation District	Balmelli Livestock Fencing and Off-Channel Habitat	Dillenbaugh Creek	Excavation of alcoves and old meanders, fencing	\$ 2,500	completed
Lewis County Conservation District	Case-Doeman Fish Enhancement	Dillenbaugh Creek	Excavation of alcoves for off-channel refuge	\$ 2,500	completed
Lewis County Conservation District	Dillenbaugh Creek Model Watershed Project; Fish Enhancement Component	Dillenbaugh and Berwick Creeks	Various bank stability revegetation, and habitat enhancement projects.	\$ 21,780	ongoing
Washington State Department of Fisheries	Mill Creek Fish Passage Restoration	Mill Creek, upper Chehalis River	Construction of a 200' bypass channel around clay falls	\$ 30,000	completed

## *FISCAL YEAR 1993 COOPERATIVE AGREEMENT SUMMARY*

- 1. The U.S. Fish and Wildlife Service and The Chehalis Basin Fisheries Task Force**  
 Contract No. 14-48-0001-93595  
 Amount allocated for FY 93: \$ 123,220  
 The Project Officer for the Cooperator will be:

President  
 Chehalis Basin Fisheries Task Force  
 2109 Sumner Avenue Suite 202  
 Aberdeen, WA 98520  
 Phone: (206)532-8812

- 2. The U.S. Fish and Wildlife Service and The Grays Harbor Conservation District**  
 Contract No. 14-48-0001-93597  
 Amount allocated for FY 93: \$ 38,000  
 The Project Officer for the Cooperator will be:

Chairman  
 Grays Harbor Conservation District  
 330 Pioneer West  
 Montesano, WA 98563  
 Phone: (206)249-5980

- 3. The U.S. Fish and Wildlife Service and The Lewis County Conservation District**  
 Contract No. 14-48-3-0105  
 Amount allocated for FY 93: \$ 26,780  
 The Project Officer for the Cooperator will be:

Chairman  
 Lewis County Conservation District  
 24 C Southeast Eighth St.  
 Chehalis, WA 98532  
 Phone: (206)748-0083

**4. The U.S. Fish and Wildlife Service and The Washington Department of Fisheries**

Contract No. 14-48-001-93635

Amount allocated for FY 93: \$ 30,000

The Project Officer for the Cooperator will be:

Program Coordinator  
Washington State Department of Fisheries  
1111 Washington Street S.E.  
P.O. Box 43135  
Olympia, WA 98504-3135  
Phone: (206)902-2557

**5. The U.S. Fish and Wildlife Service and Natural Resources Consultants, INC.**

Contract No.

Amount allocated for FY 93: \$ 37,200

The project officer for the Cooperator will be:

Project Coordinator  
Natural Resources Consultants, Incorporated  
4055 21ST Avenue West, Suite 200  
Seattle, Washington 98199

**6. The U.S. Fish and Wildlife Service, AFF and The Chehalis Tribe**

Contract No.

Amount allocated for FY 93: \$ 37,200

The project officer for the Cooperator will be:

Natural Resources Director  
Confederated Tribes of the Chehalis  
P.O. Box 536  
420 Howanut Road  
Oakville, WA 98568

## LITERATURE CITED

- Hiss, J. M., and E. E. Knudsen. 1993. Chehalis River Basin Fishery Resources: Status, Trends, and Restoration Goals. Western Washington Fishery Resource Office, Olympia, Washington.
- Wampler, P.L., E.E. Knudsen, M. Hudson, and T.A. Young. 1993. Chehalis River Basin Fishery Resources: Salmon and Steelhead Stream Habitat Degradations. Western Washington Fishery Resource Office. Olympia, Washington.