



# Project Report December 8, 2006

**Strategic Plan Objectives:** Provide technical assistance to Tribes.

38 projects found

**13210-A-009 - [Effects of Natural Prey on the Ability of NFH Fish to Successfully Forage After Release](#)**

<b>Facility</b>	Abernathy Fish Technology Center	<p><b>Accomplishment Summary</b></p> <p>Preliminary feed trials with insects have been initiated to determine if use of more natural prey items in the feed for NFH salmon will increase prey recognition and foraging ability of NFH fish post release.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>The rearing environment of NFH fish is significantly different from the conditions in the wild which could have an effect on post-release growth and survival. The feed is quite dissimilar from a wild fish diet with nutrient content, taste, mouth feel, and movement considerably different from what NFH fish will experience in the wild.</p> <p><b>The problem:</b></p> <p>Newly released NFH fish need to acclimate to the environment before they begin to eat. Pellet-fed NFH fish may not recognize natural prey or find natural prey unpalatable. For pellet-fed NFH fish to forage efficiently post-release they need to learn how to recognize and capture prey.</p> <p><b>The objective:</b></p> <p>Determine if introduction of a more natural prey item in addition to NFH salmon fish feeds will</p>
<b>Expended</b>	\$15648	
<b>Objective</b>	Develop and share applied aquatic scientific and technologic tools with partners.	
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )	
<b>Primary Benefited Population</b>	<a href="#">Wild Warm Springs River Spring Chinook</a>	
<b>Plans</b>	<p>Warm Springs Hatchery and Genetic Management Plan (draft)</p> <p>Eagle Creek NFH Winter Steelhead Hatchery and Genetic Management Plan</p> <p>Little White NFH Coho Salmon Hatchery and Genetic Management Plan</p>	
<b>Keyword</b>	Fish Technology	
<b>Need Number</b>	N-002	
<b>Partners</b>		
<b>Accomplishments</b>		

Recovery Plan production tasks implemented (PART)	1	<p>increase prey recognition, foraging ability of the fish, and ultimately improve survival.</p> <p><b>The method:</b></p> <p>Work has been started as part of a peer-reviewed study to introduce NFH fish to prey items prior to release to determine if the fish can be conditioned to improve post-release foraging ability. Chinook, steelhead, and coho will be used in this study. First feeding trial showed fish, after a period of learning, did recognize and consume prey items.</p> <p><b>Further description:</b></p> <p>Nutrition</p>
Number of techniques and culture technology tools developed.	1	
Number of applied science and technology tasks implemented as prescribed by Recovery Plans. (PART)	1	

**13210-A-042 - [Genetic Analysis of Hybridization between Bull Trout and Brook Trout in the Malheur River, OR](#)**

<b>Facility</b>	Abernathy Fish Technology Center
<b>Expended</b>	\$9962
<b>Objective</b>	Recover fish and other aquatic resource populations protected under the Endangered Species Act.
<b>Primary Benefited Species</b>	Bull trout ( <a href="#">Salvelinus confluentus</a> )
<b>Primary Benefited Population</b>	<a href="#">Malheur River core area Bull trout</a>
<b>Plans</b>	Bull Trout Draft Recovery Plan, Chapter 14 Bull Trout Recovery Plan, Ch 1 Introduction
<b>Keyword</b>	Genetics
<b>Need Number</b>	N-002
<b>Partners</b>	Burns Paiute Tribes of Oregon (\$5000)

**Accomplishments**

Number of other Recovery Plan tasks implemented for T&E populations	2
Number of surveys conducted for aquatic invasive species baseline/trend information	1
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	1
Number of applied aquatic scientific and technologic tools shared with partners.	1
Number of techniques and culture technology	1

**Accomplishment Summary**

We used 13 genetic markers to document the presence of natural hybridization between threatened bull trout and introduced brook trout in three tributaries of the Malheur River, OR. These results will aid the Burns-Paiute Tribe in quantifying the impact of hybridization on bull trout recovery. Results were also used to enter four bull trout populations into the rangewide database allowing for a better understanding of evolutionary relationship of this core area to others over the species range.

**Description**

**The importance to the Resource:**

Working collaboratively with Burns Paiute Tribal biologists, this project provided genetic identification of species or hybrids from 300 trout collected from 3 creeks in the Malheur River Basin. Field identifications and genetic identifications of 15 hybrids were strongly concordant confirming that natural hybridization is occurring in the basin.

**The problem:**

Naturalized brook trout threaten the continued existence of bull trout via competition and potential natural hybridization. The impact of hybridization on these bull trout populations was unknown until this study was completed.

**The objective:**

To use genetic methods to characterize hybridization between bull and brook trout in Lake Creek, Meadow Creek, and Big Creek all tributaries to the Malheur River on the Burns-Paiute Indian Reservation in central Oregon.

tools developed.

**The *method*:**

A large number of candidate DNA loci were first tested for their ability to discriminate bull trout and brook trout. Three hundred fish were examined from three populations.

**13210-A-047 - [Recovery and Genetic Monitoring of Chinook Salmon on the Warm Springs Indian Reservation, OR](#)**

<b>Facility</b>	Abernathy Fish Technology Center
<b>Expended</b>	\$48171
<b>Objective</b>	Restore declining fish and other aquatic resource populations before they require listing under the Endangered Species Act.
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )
<b>Primary Benefited Population</b>	<a href="#">Warm Springs hatchery spring chinook</a>
<b>Plans</b>	Warm Springs Hatchery and Genetic Management Plan (draft) 1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.
<b>Keyword</b>	Genetics
<b>Need Number</b>	N-002
<b>Partners</b>	Columbia River Fisheries Program Office (\$20000) Confederated Tribes of The Warm Springs (\$5000)

**Accomplishments**

Number of population assessments completed	1
Number of other Recovery Plan tasks implemented for T&E populations	1

**Accomplishment Summary**

Fin clips were collected from outplanted NFH origin adults and natural origin juvenile, spring Chinook salmon. 180 adults and 450 juveniles were genotyped at 10 DNA loci for assessing natural reproductive success of outplanted NFH-origin adults. Approximately half of the juveniles were parented by an outplant Chinook salmon. A manuscript is in development for submission to a peer-reviewed journal.

**Description**

**The importance to the Resource:**

Shitike Creek supports a depressed population of spring Chinook salmon. The USFWS and Confederated Tribes of the Warm Springs Reservation are attempting to rebuild this stock by outplanting surplus NFH adults from the Warm Springs NFH with the goal that those adults will spawn naturally in Shitike Creek.

**The problem:**

Surplus adults returning to NFHs are potential source of fish for restoring depressed natural populations. The ability of NFH-origin adults to successfully reproduce in the wild and contribute to natural population recovery is unknown.

**The objective:**

To determine the natural spawning success of Warm Springs NFH adult spring Chinook salmon in Shitike Creek and their ability to contribute to recovery of the population.

**The method:**

Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	1	All NFH-origin adult spring Chinook salmon outplanted into Shitike Creek are genotyped with a suite of DNA markers, and samples of naturally produced juveniles representing potential offspring are also genotyped. The pedigree relationships between potential parents and offspring will be determined by DNA analyses.
Number of applied aquatic scientific and technologic tools shared with partners.	1	
Number of applied science and technology tasks implemented as prescribed by Recovery Plans. (PART)	1	

**13210-A-050 - [Genetic Distinction of Threatened Summer-Run and Winter-Run Steelhead in the Hood River, OR.](#)**

<b>Facility</b>	Abernathy Fish Technology Center	<p><b>Accomplishment Summary</b></p> <p>A rapid response protocol was developed to identify summer and winter-run steelhead in the Hood River, OR. This protocol was used to identify 120 broodstock for the summer and winter-run hatchery programs. These results are critical for maintaining the integrity of these two ESA listed populations.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Two distinct races of steelhead are native to the Hood River, OR. Oregon Dept. of Fish &amp; Wildlife hatchery broodstocks have been developed for winter and summer run steelhead trout to assist with recovery of these ESA-listed stocks and to support Hood River recreational and Tribal fisheries.</p> <p><b>The problem:</b></p> <p>Significant temporal overlap exists between summer and winter run steelhead when adults are trapped for broodstock. Consequently, the hatchery programs pose significant genetic risk of inadvertently crossbreeding adults from the two races.</p> <p><b>The objective:</b></p> <p>This project uses genetic markers to distinguish between summer-run and winter-run steelhead in the Hood River, OR, using a suite of DNA markers.</p> <p><b>The method:</b></p> <p>A set of genetic markers were isolated for their powers to distinguish individual fish of the two races. The genetic race of each of 120 adult</p>			
<b>Expended</b>	\$19071				
<b>Objective</b>	Develop and share applied aquatic scientific and technologic tools with partners.				
<b>Primary Benefited Species</b>	Rainbow trout ( <a href="#">Oncorhynchus mykiss</a> )				
<b>Primary Benefited Population</b>	<a href="#">Hood River Winter Steelhead</a>				
<b>Plans</b>	<p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p>				
<b>Keyword</b>	Genetics				
<b>Need Number</b>	N-002				
<b>Partners</b>	<p>Confederated Tribes of The Warm Springs (\$10000)</p> <p>Oregon Department of Fish and Wildlife (\$10000)</p>				
<p><b>Accomplishments</b></p> <table border="1"> <tr> <td>Number of population assessments completed</td> <td>4</td> </tr> <tr> <td>Number of other Recovery Plan tasks implemented for T&amp;E populations</td> <td>1</td> </tr> </table>			Number of population assessments completed	4	Number of other Recovery Plan tasks implemented for T&E populations
Number of population assessments completed	4				
Number of other Recovery Plan tasks implemented for T&E populations	1				

Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	2	fish trapped in the Hood River was genetically identified in a rapid response mode prior to spawning for broodstock. An additional 150 fish of "known" origin were added to the genetic baseline.
Number of applied aquatic scientific and technologic tools shared with partners.	1	
Number of techniques and culture technology tools developed.	1	
Number of applied science and technology tasks implemented as prescribed by Recovery Plans. (PART)	1	

13210-A-069 - [Developing a Genetic Basline for Pend Oreille River Basin Bull Trout](#)

<b>Facility</b>	Abernathy Fish Technology Center
<b>Expended</b>	\$17931
<b>Objective</b>	Recover fish and other aquatic resource populations protected under the Endangered Species Act.
<b>Primary Benefited Species</b>	Bull trout ( <a href="#">Salvelinus confluentus</a> )
<b>Primary Benefited Population</b>	<a href="#">Pend Oreille Bull Trout</a>
<b>Plans</b>	Chapter 3, Clark Fork River Recovery Unit, Montana, Idaho, and Washington. 285 p. U.S. Fish and Wildlife Service. Bull Trout ( <i>Salvelinus confluentus</i> ) Draft Recovery Plan. Portland, Oregon.
<b>Keyword</b>	Genetics
<b>Need Number</b>	N-002
<b>Partners</b>	Kalispel Tribe of Indians (\$25000) Washington Department of Fish and Wildlife (\$1000)

**Accomplishments**

Number of population assessments completed	6
Number of other Recovery Plan tasks implemented for T&E populations	2
Number of technical assistance requests	1

**Accomplishment Summary**

Kalispel Tribe of Indians and USFWS added 450 bull trout from the Pend Oreille River Basin to a genetic baseline to determine the geographic origins of bull trout trapped below Albeni Falls, Boundary or Cabinet Gorge Dams. Having these populations in the baseline allows for the transport of Lake Pend Oreille, Priest River, or Clark Fork River bull trout above Albeni Falls Dam, thereby allowing these fish the opportunity to reach their natal spawning grounds.

**Description**

**The importance to the Resource:**

The results of this study assists the Kalispel Tribe of Indians in their extensive bull trout recovery efforts in the Pend Oreille River Basin by allowing for a better understanding of the movement / habitat requirements of these populations and knowing the geographic origins of fish collected at the base of Albeni Falls Dam.

**The problem:**

Fish can pass downstream at Albeni Falls Dam but no upstream passage is provided. The geographic origins of adult bull trout found below Albeni Falls Dam during the fall spawning migration are unknown.

**The objective:**

Bull trout populations were added from the Pend Oreille River Basin (i.e., the Salmo and Priest River drainages) to the larger Clark Fork and Lake Pend Oreille genetic baseline to determine the source of bull trout trapped below Albeni Falls, Boundary or Cabinet Gorge Dams.

fulfilled to support Tribal fish and wildlife conservation	
Number of applied aquatic scientific and technologic tools shared with partners.	1
Number of techniques and culture technology tools developed.	1

**The *method*:**

Abernathy FTC has developed microsatellite DNA markers for distinguishing Clark Fork River and Lake Pend Oreille bull trout populations. Fish from the Pend Oreille River Basin were added to this baseline. This allows biologists to transport captured fish into the appropriate region of the system so they can continue their spawning migrations.

**Further description:**

**13210-A-071 - [Genetic Stock Identification of Adult Spring/Summer Chinook Salmon at Lower Granite Dam](#)**

<b>Facility</b>	Abernathy Fish Technology Center	<p><b>Accomplishment Summary</b></p> <p>A joint project was initiated to determine the feasibility of using genetic mixture analysis to estimate natural and hatchery contribution to the Snake River aggregate escapement at Lower Granite Dam (LGD) in Idaho. 1000 fish were genotyped at 13 microsatellite loci. A power analysis will be conducted in FY07 to determine the resolution of the mixture analysis and to determine if 1000 fish is sufficient to represent the total composition of hatchery and natural populations.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Population level abundance is an essential component for monitoring the effects of harvest, habitat restoration programs, or recovery programs. We tested the ability to use genetic markers to estimate Chinook salmon population proportions precisely and accurately from mixed-stock samples collected at Lower Granite Dam on the Snake River, ID.</p> <p><b>The problem:</b></p> <p>Currently managers rely on coded wire tag program (CWT) and redd counts to estimate population abundance of endangered Chinook salmon populations in the Snake River. These methods have serious limitations for monitoring wild stocks and within river harvest rates.</p> <p><b>The objective:</b></p> <p>Develop genetic based methods to assign mixtures of fish back to their geographic origins in the Snake River.</p> <p><b>The method:</b></p>
<b>Expended</b>	\$40000	
<b>Objective</b>	Utilize appropriate scientific and technologic tools in formulating and executing fishery management plans and policies.	
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )	
<b>Primary Benefited Population</b>	<a href="#">Snake River Spring/Summer Chinook ESU</a>	
<b>Plans</b>	Lower Snake River Compensation Plan 2000 NMFS FCRPS Biological Opinion - December 21, 2000 1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.	
<b>Keyword</b>	Genetics	
<b>Need Number</b>	N-002	
<b>Partners</b>	Columbia River Inter Tribal Fish Commission (\$60000) Idaho Fish and Game (\$30000) Lower Snake River Compensation Plan (\$2000) National Oceanic and Atmospheric Administration, Northwest Fisheries Science	

	Center (\$60000)	<p>Genetic mixture analysis was used to estimate natural and hatchery contribution to the Snake River aggregate escapement at LGD. Scales taken from stratified-random sample of Chinook at LGD (n=1000) will were genotyped at 13 microsatellite loci. Fish were also aged to determine the population composition and age structure of the aggregate run.</p>
<p><b>Accomplishments</b></p>		
<p>Number of other Recovery Plan tasks implemented for T&amp;E populations</p>	<p>1</p>	
<p>Number of mitigation tasks implemented as prescribed in approved plans. (PART)</p>	<p>1</p>	

13210-A-074 - [Evaluation of Steelhead Egg Box Outplanting via Parentage Analysis](#)

<b>Facility</b>	Abernathy Fish Technology Center
<b>Expended</b>	\$28293
<b>Objective</b>	Provide technical assistance to Tribes.
<b>Primary Benefited Species</b>	Rainbow trout ( <a href="#">Oncorhynchus mykiss</a> )
<b>Primary Benefited Population</b>	<a href="#">Salmon River upper mainstem.</a>
<b>Plans</b>	1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin. Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)
<b>Keyword</b>	Genetics
<b>Need Number</b>	N-002
<b>Partners</b>	Shoshone-Bannock Tribes (\$20000)

**Accomplishments**

Number of population assessments completed	1
Recovery Plan production tasks implemented (PART)	1
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	1

**Accomplishment Summary**

A study plan was developed and samples collected to evaluate steelhead trout egg hatch-box supplementation activity on Shoshone-Bannock Tribal land in the Yankee Fork of the Salmon River in Idaho. In FY07, genetic parentage analysis will be used to evaluate the proportion on 1+ steelhead in the Yankee Fork that were egg box origin or natural origin. In future years, the same process will be used to identify the proportion of unmarked / tagged returning adults that were egg-box outplants.

**Description**

**The importance to the Resource:**

Steelhead trout are a cultural, social, and subsistence based resource of historical significance for the Shoshone-Bannock Tribes. Each year the tribe outplants over 100,000 steelhead eggs into the Yankee Fork. Genetic marking of the outplanted eggs will allow for an evaluation of the survival of these fish to the smolt and adult stages.

**The problem:**

Because fish outplanted as eggs have not yet developed into fish they cannot be physically marked / tagged which means the outplanted fish cannot be differentiated from natural-origin fish. The inability to differentiate these two groups has limited information about the contribution of the egg outplant program to the population and fishery.

**The objective:**

Develop a genetic tagging protocol for hatchery origin steelhead trout outplanted as eggs into the Yankee Fork River of the Salmon River in

Number of applied aquatic scientific and technologic tools shared with partners.	1	Idaho.
Number of techniques and culture technology tools developed.	1	

**13210-A-075 - [Simulated Natural Rearing \(NATURES\) Using Altered Feeding Strategies at Warm Springs NFH, OR.](#)**

<b>Facility</b>	Abernathy Fish Technology Center
<b>Expended</b>	\$16265
<b>Objective</b>	Develop and share applied aquatic scientific and technologic tools with partners.
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )
<b>Primary Benefited Population</b>	<a href="#">Warm Springs hatchery spring chinook</a>
<b>Plans</b>	Warm Springs Hatchery and Genetic Management Plan (draft)
<b>Keyword</b>	Fish Technology
<b>Need Number</b>	N-002
<b>Partners</b>	

**Accomplishments**

Recovery Plan production tasks implemented (PART)	1
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	1
Number of applied aquatic scientific and technologic tools shared with partners.	1
Number of applied science and technology tasks implemented as prescribed by Recovery Plans. (PART)	1

**Accomplishment Summary**

Warm Springs NFH fish were analyzed for proximate composition throughout rearing as part of a study to determine if altered feeding methods & modified feeds can be used to produce NFH fish resembling their wild counterparts in size and body composition. A planning meeting was convened to identify further tasks for the cooperators. This accomplishment is associated with FONS project 13210-2004-025.

**Description**

**The importance to the Resource:**

The conditions under which the fish are raised could have a great effect on their growth and morphology. A study plan outlining work to match fish growth rates in a NFH setting with growth rates of wild fish at the same location has been put into place and a literature search has been done.

**The problem:**

The rearing environment of NFH fish is significantly different from conditions in the wild. At some NFHs very little water temperature fluctuation occurs during the rearing period. Even if the NFH experiences fluctuating water temperature, the feeding regimes and the food used is quite different from a wild fish diet.

**The objective:**

The data collected will consist of fish from the stream and the hatchery for body composition and size comparison. Also, temperature profiles from the stream and hatchery will be monitored and compared. This data will give

	<p>the basis for changes in the NFH feeding regimes to produce fish more like their wild counterparts.</p> <p><b>The <i>method</i>:</b></p> <p>Spring Chinook salmon samples are being collected at the Warm Springs NFH with the assistance of the Lower Columbia FHC and the Columbia River FPO. Fish are monitored in the Warm Springs River, with NFH and in-river water temperatures being recorded. Fish were analyzed for proximate composition throughout the rearing period at Warm Springs NFH.</p> <p><b>Further description:</b></p> <p>Nutrition</p>
--	---

**13210-A-094 - [Population Structure and Genetic Characteristics of Summer Steelhead in the Deschutes River, Oregon](#)**

<b>Facility</b>	Abernathy Fish Technology Center	<p><b>Accomplishment Summary</b></p> <p>A four year genetic project was initiated with CRFPO to assess the population structure of summer steelhead trout in the Deschutes River and potential impact from out-of basin hatchery strays. 800 steelhead or redband trout were genotyped from 17 locations in the basin. Results of this work are critical to monitoring &amp; evaluation projects of natural populations and questions associated with hatchery operations and impacts to the Deschutes basin native fish community.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>In identifying independent populations of ESA listed steelhead in the Deschutes River basin the Interior Columbia River Technical Recovery Team identified a number of important information gaps that needed to be addressed for effective steelhead trout management and recovery. This project will address those gaps.</p> <p><b>The problem:</b></p> <p>Limited information exists on the genetic differences between steelhead occupying the tributaries on the east and west sides of the lower Deschutes River below the Pelton Dam complex. Over half of the returning steelhead to the system have been out of basin strays and little is known about the reproductive success of these fish in the basin.</p> <p><b>The objective:</b></p> <p>Describe population structure and genetic variability among steelhead occupying tributaries and the main stem downstream of the Pelton Round Butte Dam, evaluate the</p>
<b>Expended</b>	\$44870	
<b>Objective</b>	Recover fish and other aquatic resource populations protected under the Endangered Species Act.	
<b>Primary Benefited Species</b>	Rainbow trout ( <a href="#">Oncorhynchus mykiss</a> )	
<b>Primary Benefited Population</b>	<a href="#">Deschutes River East Side Tributaries Steelhead</a>	
<b>Plans</b>	<p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p>	
<b>Keyword</b>	Genetics	
<b>Need Number</b>	N-002	
<b>Partners</b>	<p>Columbia River Fisheries Program Office (\$23000)</p> <p>Columbia River Inter Tribal Fish Commission (\$10000)</p> <p>Confederated Tribes of The Warm Springs (\$20000)</p> <p>National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center (\$5000)</p>	

Oregon Department of  
Fish and Wildlife (\$20000)

### Accomplishments

Number of population assessments completed	17
Number of other Recovery Plan tasks implemented for T&E populations	4
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	1
Number of applied aquatic scientific and technologic tools shared with partners.	1
Number of applied science and technology tasks implemented as prescribed by Recovery Plans. (PART)	1

effect of out-of-basin strays on natural populations, and help select a broodstock source for reintroducing steelhead to currently inaccessible portions of the middle and upper basin.

#### **The method:**

Steelhead and redband trout will be genotyped at 13 microsatellite loci from over 17 locations in the basin. Stray fish will be sampled at the Shears Falls trap. Genetic population structure will be determined and mixture analysis will be used to determine the genetic contribution of stray fish to the natural populations.

13210-A-097 - [Conservation Genetics of Bull Trout on the Flathead Indian Reservation, MT](#)

<b>Facility</b>	Abernathy Fish Technology Center	<p><b>Accomplishment Summary</b></p> <p>One hundred and twelve bull trout samples from the Jocko River and Mission Creek basins on the Flathead Indian Reservation in MT. Samples are currently being analyzed to determine population structure and identification of source of unknown individual fish.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Confederated Salish Kootenai Tribal biologists have restored bull trout areas on the Flathead Reservation lands by removing non-native brook trout and improving the physical habitat. The goal of this effort is to reintroduce bull trout into many of these restored areas.</p> <p><b>The problem:</b></p> <p>Genetic data are needed to aid in the identification of appropriate source populations for these reintroductions.</p> <p><b>The objective:</b></p> <p>Determine genetic relationships among bull trout populations on tribal lands to guide the selection of populations for transport into the restored habitats.</p> <p><b>The method:</b></p> <p>We used DNA markers to identify the genetic relationships among bull trout populations within the Reservation. DNA markers were also used to eliminate the transfer of bull / brook hybrid trout.</p>
<b>Expended</b>	\$7970	
<b>Objective</b>	Provide technical assistance to Tribes.	
<b>Primary Benefited Species</b>	Bull trout ( <a href="#">Salvelinus confluentus</a> )	
<b>Primary Benefited Population</b>	<a href="#">Bull trout - Clark Fork River 3 (Flathead River to Thompson Falls Dam)</a>	
<b>Plans</b>	Chapter 3, Clark Fork River Recovery Unit, Montana, Idaho, and Washington. 285 p. U.S. Fish and Wildlife Service. Bull Trout ( <i>Salvelinus confluentus</i> ) Draft Recovery Plan. Portland, Oregon.	
<b>Keyword</b>	Genetics	
<b>Need Number</b>	N-002	
<b>Partners</b>	Avista Corporation (\$70000) Confederated Salish Kootenai Tribes (\$30000) Montana Department of Fish, Wildlife & Parks (\$5000)	
<b>Accomplishments</b>		
Number of population assessments completed	4	
Number of other Recovery Plan tasks implemented for T&E populations	2	
Number of technical assistance requests	1	

fulfilled to support Tribal fish and wildlife conservation		
Number of applied aquatic scientific and technologic tools shared with partners.	1	

13310-A-115 - [Stock Assessment Marking for John Day Dam Mitigation Production](#)

<b>Facility</b>	Columbia River Fisheries Program Office	<p><b>Accomplishment Summary</b></p> <p>Marked 429,634 upriver bright fall chinook at Little White Salmon NFH as part of the assessment program for John Day Dam Mitigation.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Marking, tagging and evaluation of hatchery stocks is critical to west coast fisheries management and wild stock protection and recovery</p> <p><b>The problem:</b></p> <p>West coast salmon fisheries catch a variety of ESA listed and other stocks of concern as they target abundant hatchery and other productive wild stocks. A coast wide tagging and stock assessment program to monitor and evaluate status of stocks and impacts of fisheries on various stocks of concern is critical to wild stock protection and recovery.</p> <p><b>The objective:</b></p> <p>Two groups of 200,000 coded- wire tags (CWTs), one for on-station release and one for a Yakima River release group, are applied for the purpose of hatchery evaluation, estimating survival and contribution rates, stock assessment, and brood stock management.</p> <p><b>The method:</b></p> <p>For FY 2006, 429,634 upriver bright fall Chinook were adipose fin clipped and tagged with coded-wire tags at Little White Salmon for this stock assessment program. In addition, comprehensive bio-sampling of all returning adults was conducted.</p>
<b>Expended</b>	\$0	
<b>Objective</b>	Support, facilitate, and/or lead collaborative approaches to manage interjurisdictional fisheries.	
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )	
<b>Primary Benefited Population</b>	Not specified	
<b>Plans</b>	<p>Little White NFH</p> <p>Upriver Bright Fall Chinook Salmon Hatchery and Genetics Management Plan</p> <p>2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho, and White Sturgeon</p> <p>2000 NMFS FCRPS Biological Opinion - December 21, 2000</p> <p>Columbia River Basin Fish and Wildlife Program (NPPC 2000)</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p>	
<b>Keyword</b>	Monitoring and Assessment	

<b>Need Number</b>	N-002	<b>Further description:</b>
<b>Partners</b>	U.S. Army Corps of Engineers (\$104104)	
<b>Accomplishments</b>		<p>Each year Little White Salmon NFH rears 3,700,000 upriver bright fall Chinook as partial mitigation for the construction of John Day Dam. A total of 2,000,000 upriver bright fall Chinook are released on-station and the remaining 1,700,000 upriver bright fall Chinook are transferred to the Yakima River for release. The Corps of Engineers funds the rearing and marking program for John Day Dam mitigation production.</p>
Number of marking and tagging targets met, as prescribed by Recovery plans	1	
Number of post-stocking survival tasks met, as prescribed by Recovery plans for hatchery propagated listed species. (PART)	1	
Number of other Recovery Plan tasks implemented for T&E populations	2	
number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)	2	
Number of other Fishery Management Plan tasks implemented for populations of management concern.	2	

13310-A-121 - [Marking for Nez Perce Tribal Restoration Programs](#)

<b>Facility</b>	Columbia River Fisheries Program Office	<p><b>Accomplishment Summary</b></p> <p>Tagged a total of 60,625 coho for Nez Perce tribal restoration programs in the Snake River Basin.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Marking, tagging and evaluation of hatchery stocks is critical to west coast fisheries management and wild stock protection and recovery</p> <p><b>The problem:</b></p> <p>The Nez Perce Tribe currently does not have the staff, marking equipment, and expertise to conduct all of their necessary fish marking programs. The FWS works in partnership with the Tribe to complete selected marking projects for the Tribe's fishery restoration projects.</p> <p><b>The objective:</b></p> <p>In FY 2006, Columbia River Fisheries Program Office staff again assisted the Nez Perce Tribe by conducting a coho marking program for tribal restoration efforts in the Snake River Basin.</p> <p><b>The method:</b></p> <p>A total of 60,625 coho were tagged with coded wire tags (CWTs) at Eagle Creek NFH. These fish were subsequently transported to the Clearwater River for release as part of the Nez Perce Tribe's coho restoration program.</p> <p><b>Further description:</b></p> <p>Typically all fish tagged with CWTs are marked</p>
<b>Expended</b>	\$0	
<b>Objective</b>	Provide technical assistance to Tribes.	
<b>Primary Benefited Species</b>	Coho salmon or silver salmon ( <a href="#">Oncorhynchus kisutch</a> )	
<b>Primary Benefited Population</b>	Not specified	
<b>Plans</b>	<p>2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho, and White Sturgeon</p> <p>2000 NMFS FCRPS Biological Opinion - December 21, 2000</p> <p>Columbia River Basin Fish and Wildlife Program (NPPC 2000)</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p>	
<b>Keyword</b>	Tribal	
<b>Need Number</b>	N-002	
<b>Partners</b>	Nez Perce Tribe (\$11973)	

## Accomplishments

Number of post-stocking survival tasks met, as prescribed by Recovery plans for hatchery propagated listed species. (PART)	1
Number of other Recovery Plan tasks implemented for T&E populations	2
number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)	1
Number of other Fishery Management Plan tasks implemented for populations of management concern.	2
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	1

with an adipose clip to "flag" the presence of a CWT for monitoring purposes. None of these fish were marked with an adipose clip at the request of the Nez Perce Tribe and with concurrence from the National Marine Fisheries Service. Sampling of returning fish will need to be conducted with electronic detectors to evaluate the tribal restoration program. The Nez Perce Tribe provided funding for this project which is designed to restore coho to the Clearwater River system where the natural coho population went extinct in the 1980s and 1990s.

13310-A-122 - [Marking for Yakama Nation Mid-Columbia Coho Tribal Restoration Program](#)

<b>Facility</b>	Columbia River Fisheries Program Office	<p><b>Accomplishment Summary</b></p> <p>Tagged 1,628,894 hatchery coho for Yakama Indian Nation mid-Columbia coho tribal restoration program.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Marking, tagging and evaluation of hatchery stocks is critical to west coast fisheries management and wild stock protection and recovery</p> <p><b>The problem:</b></p> <p>The Yakama Indian Nation currently does not have the staff, marking equipment, and expertise to conduct all of their necessary fish marking programs. The FWS works in partnership with the Tribe to complete selected marking projects for the Tribe's fishery restoration projects.</p> <p><b>The objective:</b></p> <p>In FY 2006, Columbia River Fisheries Program Office staff again assisted the Yakama Indian Nation by conducting coho marking programs for tribal restoration efforts in the mid-Columbia River region.</p> <p><b>The method:</b></p> <p>At the request of the Yakama Indian Nation, the Service coded-wire tagged 270,349 coho at Winthrop NFH, 673,545 coho at Willard NFH and 685,000 coho at Cascade state hatchery for release into the Methow and Wenatchee sub-basins in spring of 2007 as part of the tribal coho restoration effort in mid-Columbia River tributaries.</p>
<b>Expended</b>	\$0	
<b>Objective</b>	Provide technical assistance to Tribes.	
<b>Primary Benefited Species</b>	Coho salmon or silver salmon ( <a href="#">Oncorhynchus kisutch</a> )	
<b>Primary Benefited Population</b>	Not specified	
<b>Plans</b>	<p>2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho, and White Sturgeon</p> <p>2000 NMFS FCRPS Biological Opinion - December 21, 2000</p> <p>Columbia River Basin Fish and Wildlife Program (NPPC 2000)</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p>	
<b>Keyword</b>	Tribal	
<b>Need Number</b>	N-002	
<b>Partners</b>	Bonneville Power Administration (\$246668)	

**Accomplishments**

Number of marking and tagging targets met, as prescribed by Recovery plans	1
Number of post-stocking survival tasks met, as prescribed by Recovery plans for hatchery propagated listed species. (PART)	1
Number of other Recovery Plan tasks implemented for T&E populations	2
number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)	3
Number of other Fishery Management Plan tasks implemented for populations of management concern.	1
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	3

**Further description:**

The Yakama Indian Nation requested that the tagged fish not be adipose fin clipped so they would not be targeted in non-tribal selective sport fisheries. The Yakama Indian Nation is conducting the assessments of these tagging and release programs. Funding for these programs was provided for by the Bonneville Power Administration. This marking program assists the Yakama Tribe in the evaluation of their coho restoration program.

13310-A-150 - [Ecological Interactions between Hatchery and Wild Fish - Deschutes River, Oregon](#)

<b>Facility</b>	Columbia River Fisheries Program Office	<p><b>Accomplishment Summary</b></p> <p>We have established cooperative and inter-agency agreements &amp; gathered information to be used in management decisions at National Fish Hatcheries to minimize the risk to wild and listed fish that lead to hatchery reform.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Minimize impact of hatchery fish on wild and ESA listed fish, assist with recovery while providing sport and tribal harvest opportunity.</p> <p><b>The problem:</b></p> <p>Fish released from a hatchery interact with wild fish in the stream, however the impact of these interactions on wild fish populations is not known. Modifying hatchery rearing and release practices may reduce the impacts that hatchery fish have on wild, listed populations while still providing fish for harvest in Tribal and sport fisheries.</p> <p><b>The objective:</b></p> <p>This project will monitor and evaluate the behavior, distribution, and survival of hatchery fish in both the hatchery and stream environment. Potential impacts to wild fish populations will be monitored and alternative hatchery rearing and release practices will be investigated.</p> <p><b>The method:</b></p> <p>A variety of methods, including mark-recapture, growth monitoring, genetic parentage analyses, and underwater observations (snorkeling and video-monitoring) was used to</p>
<b>Expended</b>	\$246155	
<b>Objective</b>	Develop and share applied aquatic scientific and technologic tools with partners.	
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )	
<b>Primary Benefited Population</b>	Not specified	
<b>Plans</b>	<p>Warm Springs Hatchery and Genetic Management Plan (draft)</p> <p>Comprehensive Hatchery Management Plan- Warm Springs NFH</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>2000 NMFS FCRPS Biological Opinion - December 21, 2000</p>	
<b>Keyword</b>	Monitoring and Assessment	
<b>Need Number</b>	N-002	
<b>Partners</b>	<p>Abernathy Fish Technology Center</p> <p>Confederated Tribes of The Warm Springs</p> <p>Lower Columbia River Fish Health Center</p> <p>National Oceanic and Atmospheric Administration, Fisheries</p>	

Oregon Department of  
Fish and Wildlife  
U.S. Geological Survey  
Warm Springs National  
Fish Hatchery

**Accomplishments**

Number of population assessments completed	4
Number of other Recovery Plan tasks implemented for T&E populations	8
Number of applied science and technology tasks implemented as prescribed by Recovery Plans. (PART)	1
Number of applied science and technology tasks implemented as prescribed by Fishery Management Plans. (PART)	1

monitor interactions between hatchery and wild fish populations.

**Further description:**

We have established cooperative agreements with Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO) and U.S. Geological Survey (USGS) and worked closely with our Fish Health Center, Abernathy FTC, Warm Springs National Fish Hatchery (WSNFH), and Oregon Department of Fish and Wildlife in developing and implementing plans to investigate ecological interactions between hatchery spring Chinook salmon from WSNFH and native fishes in the Deschutes and Columbia rivers. The CRFPO obtained permission to work on CTWSRO streams and worked closely with tribal personnel in developing snorkeling and underwater video-monitoring techniques to estimate behavioral interaction between juvenile salmon and listed steelhead and bull trout. Genetic samples were collected from hatchery and wild fish in order to compare the distribution, behavior, and reproductive success of wild and outplanted hatchery fish. We have developed plans to use PIT-tag technology to monitor releases of juvenile salmon. Information gathered from these projects will be used in management decisions at National Fish Hatcheries to minimize the risk to wild and listed fish.

13310-A-193 - [Coho Marking for Yakama Indian Nation Yakima River Tribal Restoration Program](#)

<b>Facility</b>	Columbia River Fisheries Program Office	<p><b>Accomplishment Summary</b></p> <p>Tagged hatchery coho for the Yakama Indian Nation Tribal Coho Restoration Program in the Yakima River.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Marking, tagging and evaluation of hatchery stocks is critical to west coast fisheries management and wild stock protection and recovery</p> <p><b>The problem:</b></p> <p>The Yakama Indian Nation currently does not have the staff, marking equipment, and expertise to conduct all of their necessary fish marking programs. The FWS works in partnership with the Tribe to complete selected marking projects for the Tribe's fishery restoration projects.</p> <p><b>The objective:</b></p> <p>In FY 2006, Columbia River Fisheries Program Office staff again assisted the Yakama Indian Nation by conducting coho marking programs for tribal restoration efforts in the Yakima River.</p> <p><b>The method:</b></p> <p>At the request of the Yakama Indian Nation, the Service coded-wire tagged 119,581 coho at Prosser Hatchery and adipose clipped 464,411 coho at Eagle Creek NFH for release into the Yakima River in spring of 2007 as part of the tribal coho restoration effort in the Yakima River.</p> <p><b>Further description:</b></p>
<b>Expended</b>	\$0	
<b>Objective</b>	Provide technical assistance to Tribes.	
<b>Primary Benefited Species</b>	Coho salmon or silver salmon ( <a href="#">Oncorhynchus kisutch</a> )	
<b>Primary Benefited Population</b>	Not specified	
<b>Plans</b>	<p>2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho, and White Sturgeon</p> <p>2000 NMFS FCRPS Biological Opinion - December 21, 2000</p> <p>Columbia River Basin Fish and Wildlife Program (NPPC 2000)</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p>	
<b>Keyword</b>	Tribal	
<b>Need Number</b>	N-002	
<b>Partners</b>	Bonneville Power Administration (\$66733)	

## Accomplishments

Number of marking and tagging targets met, as prescribed by Recovery plans	1
Number of post-stocking survival tasks met, as prescribed by Recovery plans for hatchery propagated listed species. (PART)	1
Number of other Recovery Plan tasks implemented for T&E populations	2
number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)	2
Number of other Fishery Management Plan tasks implemented for populations of management concern.	1
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	2

As part of a Bonneville Power Administration funded research program to study the effects of coho re-introductions into the Yakima River Basin, the Yakama Indian Nation is conducting the evaluations of its coho release programs. The Service is assisting with these evaluation efforts by conducting the marking programs for the Tribe.

13310-A-194 - [Marking Program for Umatilla River Tribal Spring Chinook Restoration Program](#)

<b>Facility</b>	Columbia River Fisheries Program Office	<p><b>Accomplishment Summary</b></p> <p>Marked and/or tagged 229,470 spring chinook for the Umatilla Tribe.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Marking, tagging and evaluation of hatchery stocks is critical to west coast fisheries management and wild stock protection and recovery.</p> <p><b>The problem:</b></p> <p>The Umatilla Tribe currently does not have the staff, marking equipment, and expertise to conduct all of their necessary fish marking programs. The FWS works in partnership with the Tribe to complete selected marking projects for the Tribe's fishery restoration projects.</p> <p><b>The objective:</b></p> <p>In FY 2006, Columbia River Fisheries Program Office staff again assisted the Umatilla Tribe by conducting spring Chinook marking programs for tribal restoration efforts in the Umatilla River.</p> <p><b>The method:</b></p> <p>In FY 2006, the Service marked 40,063 spring Chinook with an adipose, left ventral clip and coded-wire-tag. In addition, 189,407 spring Chinook were adipose fin clipped for the Umatilla Tribal restoration program.</p> <p><b>Further description:</b></p> <p>In 1997 the U.S. Fish and Wildlife Service began rearing and marking spring Chinook at</p>
<b>Expended</b>	\$0	
<b>Objective</b>	Provide technical assistance to Tribes.	
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )	
<b>Primary Benefited Population</b>	Not specified	
<b>Plans</b>	<p>Little White NFH Spring Chinook Salmon Hatchery and Genetic Management Plan</p> <p>2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho, and White Sturgeon</p> <p>2000 NMFS FCRPS Biological Opinion - December 21, 2000</p> <p>Columbia River Basin Fish and Wildlife Program (NPPC 2000)</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p>	
<b>Keyword</b>	Tribal	
<b>Need Number</b>	N-002	

<b>Partners</b>	Bonneville Power Administration (\$18458)	<p>Little White Salmon NFH for the Confederated Tribes of the Umatilla Indian Reservation as part of a cooperative tribal restoration program for the Umatilla River. Fish from the Little White Salmon NFH are a critical component of the Umatilla River Basin monitoring and evaluation effort that is conducted by the Tribe and funded by the Bonneville Power Administration. The Umatilla Tribe is conducting the monitoring and assessment aspects of the tagging and release program. The cooperative marking program conducted by the Service provides assistance to the Umatilla Tribe for their Umatilla River restoration program.</p>
<b>Accomplishments</b>		
Number of marking and tagging targets met, as prescribed by Recovery plans	2	
Number of post-stocking survival tasks met, as prescribed by Recovery plans for hatchery propagated listed species. (PART)	1	
Number of other Recovery Plan tasks implemented for T&E populations	2	
number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)	1	
Number of other Fishery Management Plan tasks implemented for populations of management concern.	1	
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	2	

**13310-A-205 - [Marking Program for Umatilla Tribal Walla Walla River Spring Chinook Restoration Program](#)**

<b>Facility</b>	Columbia River Fisheries Program Office	<p><b>Accomplishment Summary</b></p> <p>Marked and tagged 50,102 spring Chinook for the Umatilla Tribe's spring Chinook restoration program in the Walla Walla River.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Marking, tagging and evaluation of hatchery stocks is critical to west coast fisheries management and wild stock protection and recovery.</p> <p><b>The problem:</b></p> <p>The Umatilla Tribe currently does not have the staff, marking equipment, and expertise to conduct all of their necessary fish marking programs. The FWS works in partnership with the Tribe to complete selected marking projects for the Tribe's fishery restoration projects.</p> <p><b>The objective:</b></p> <p>In FY 2006, Columbia River Fisheries Program Office staff again assisted the Umatilla Tribe by conducting spring Chinook marking programs for tribal restoration efforts in the Walla Walla River.</p> <p><b>The method:</b></p> <p>A total of 50,102 spring Chinook from Little White Salmon/Willard NFH Complex were marked and tagged under this cooperative marking program in FY 2005.</p> <p><b>Further description:</b></p> <p>Spring Chinook were extirpated from the Walla</p>
<b>Expended</b>	\$0	
<b>Objective</b>	Provide technical assistance to Tribes.	
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )	
<b>Primary Benefited Population</b>	Not specified	
<b>Plans</b>	<p>2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho, and White Sturgeon</p> <p>2000 NMFS FCRPS Biological Opinion - December 21, 2000</p> <p>Columbia River Basin Fish and Wildlife Program (NPPC 2000)</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p>	
<b>Keyword</b>	Monitoring and Assessment	
<b>Need Number</b>	N-002	
<b>Partners</b>	Umatilla Tribe (\$8003)	

## Accomplishments

Number of marking and tagging targets met, as prescribed by Recovery plans	1
Number of post-stocking survival tasks met, as prescribed by Recovery plans for hatchery propagated listed species. (PART)	1
Number of other Recovery Plan tasks implemented for T&E populations	2
number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)	1
Number of other Fishery Management Plan tasks implemented for populations of management concern.	1
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	1

Walla River early in the 1900s due to high irrigation demand and poor water management practices. Spring Chinook were reintroduced into the system late in the 1900s by the Umatilla Tribe after some success in changing water management polices that leaves more water for in-stream use. Starting in FY 2005, at the request of the Umatilla Tribe, the U.S. Fish and Wildlife Service entered into an agreement with the Tribe to ad-clip and coded wire tag approximately 50,000 spring Chinook for the Walla Walla River tribal restoration program. Fish from either Carson NFH or Little White Salmon NFH were to be marked on an annual basis to assist the Umatilla Tribe with their monitoring and evaluation program of this tribal restoration project. A total of approximately 200,000 spring Chinook that accompany the ADCWT 50,000 fish for the program are also adipose clipped by the Service under an alternate funding source (i.e., Mitchell Act). Carson stock spring Chinook, a non-native stock, are being used for the initial restoration efforts and NOAA Fisheries has required 100% marking of the Walla Walla River destined hatchery fish to evaluate and guard against straying into the Snake River Basin.

14220-A-005 - [Coho salmon production in the Clearwater River, ID](#)

<b>Facility</b>	Dworshak National Fish Hatchery
<b>Expended</b>	\$11193
<b>Objective</b>	Provide technical assistance to Tribes.
<b>Primary Benefited Species</b>	Coho salmon or silver salmon ( <a href="#">Oncorhynchus kisutch</a> )
<b>Primary Benefited Population</b>	<a href="#">Clearwater River Coho</a>
<b>Plans</b>	The Service's Native American Policy Cooperative Agreement between United States Fish and Wildlife Service and Nez Perce Tribe for fish production services.
<b>Keyword</b>	Tribal
<b>Need Number</b>	N-002
<b>Partners</b>	

**Accomplishments**

Number of other Fishery Management Plan tasks implemented for populations of management concern.	2
--	---

**Accomplishment Summary**

Coho are raised at Dworshak in a cooperative agreement with the Nez Perce Tribe. In FY2006, there were approximately 190,000 BY04 presmolts of Clearwater River stock raised at Dworshak. There were also 160,000 BY05 fingerlings of Clearwater River stock and 120,000 of Eagle Creek stock (Oregon) reared at Dworshak.

**Description**

**The importance to the Resource:**

The Nez Perce Tribe, through testimony of elders and review of historical literature, have identified streams that historically supported populations of coho salmon, (Clearwater River Coho Salmon Master Plan, First Stage Draft, February 1999). This includes several streams in the Clearwater River Basin.

**The problem:**

Coho salmon were not found in the Clearwater River in recent history.

**The objective:**

In a cooperative agreement with the Nez Perce Tribe, staff at Dworshak NFH are assisting in the rearing of coho salmon in the Clearwater Basin.

**The method:**

Coho trapped in the Clearwater River basin were spawned at Dworshak NFH. Personnel from Dworshak assisted the tribe in spawning and incubation of coho eggs, along with other fish culture activities. Dworshak staff provides technical expertise on feeding, cleaning, handling, transport and sampling of the coho.

13220-A-008 - [Coho Salmon Propagation Program](#)

<b>Facility</b>	Entiat National Fish Hatchery	<p><b>Accomplishment Summary</b></p> <p>Held 1,406 adult Coho salmon in the adult holding ponds (669 females and 737 males). Pre-spawn mortality was 4.8 percent. Collected 1,821,729 brood year 2005 Coho salmon eggs from 653 females and fertilized by 666 males. Shipped 789,390 green eggs and milt to Yakama Nations for incubation at their Peshastin Incubation Facility. Shipped 875,705 eyed eggs to Willard National Fish Hatchery and Cascade Fish Hatchery (ODFW) for further incubation and rearing.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Assisting the Yakama Nation with the reintroduction of Coho to the mid-Columbia River basin is important because it supports reintroduction of a functionally extirpated salmonid species and meets tribal trust responsibilities.</p> <p><b>The problem:</b></p> <p>Indigenous natural Coho salmon were decimated in the early 1900s and no longer occupy the mid-Columbia river basins. Reasons for decline include the construction and operation of mainstem Columbia River hydropower projects, habitat degradation, release locations, harvest management, and hatchery practices.</p> <p><b>The objective:</b></p> <p>The objective is to assist, primarily, the Yakama Nation and other partners in re-establishing naturally spawning Coho populations in mid-Columbia tributaries to biologically sustainable levels which provide significant harvest in most years.</p>			
<b>Expended</b>	\$0				
<b>Objective</b>	Provide technical assistance to Tribes.				
<b>Primary Benefited Species</b>	Coho salmon or silver salmon ( <a href="#">Oncorhynchus kisutch</a> )				
<b>Primary Benefited Population</b>	<a href="#">Wenatchee River Coho</a>				
<b>Plans</b>	The Service's Native American Policy 2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho, and White Sturgeon				
<b>Keyword</b>	Tribal				
<b>Need Number</b>	N-002				
<b>Partners</b>	Bonneville Power Administration (\$50000) Washington Department of Fish and Wildlife Yakama Nation				
<p><b>Accomplishments</b></p> <table border="1"> <tr> <td>Number of Fishery Management Plan production tasks implemented (PART)</td> <td>2</td> </tr> <tr> <td>Number of other Fishery Management Plan tasks implemented for populations of management concern.</td> <td>2</td> </tr> </table>			Number of Fishery Management Plan production tasks implemented (PART)	2	Number of other Fishery Management Plan tasks implemented for populations of management concern.
Number of Fishery Management Plan production tasks implemented (PART)	2				
Number of other Fishery Management Plan tasks implemented for populations of management concern.	2				

**The *method*:**

Assist the Yakama Nation with the mid-Columbia Coho reintroduction feasibility project by providing facilities, resources, manpower and technical expertise. This includes providing space and water to hold adults, spawning adults, incubating eggs and shipping eyed eggs to other facilities for rearing.

**Further description:**

The Coho reintroduction program is led by the Yakama Nation and funded by Bonneville Power Administration. Benefits include restoration and rebuilding Coho salmon to the Wenatchee River and Methow River basins.

The Entiat River is a tributary to the Columbia River in Washington State. The Entiat National Fish Hatchery is located on the Entiat River. Fish released must pass eight downstream dams to reach the Pacific Ocean. The Entiat National Fish Hatchery is one of three hatcheries in the Leavenworth National Fish Hatchery Complex. The Complex was authorized by the Grand Coulee Fish Maintenance Project, April 3, 1937, and reauthorized by the Mitchell Act, May 11, 1938. Currently, the Complex is funded through a reimbursable agreement (sub activity-1932) with the Bureau of Reclamation as mitigation for Grand Coulee Dam. Other guiding authorities include by the US v. Oregon and the US Canada Treaty.

13225-A-035 - [Coho Salmon Propagation Program](#)

<b>Facility</b>	Leavenworth National Fish Hatchery	<p><b>Accomplishment Summary</b></p> <p>Leavenworth National Fish Hatchery allowed the Yakama Nation to trap returning adult Coho salmon in the adult holding pond and at structure 5. Also Leavenworth National Fish Hatchery provided space, water and technical expertise to assist the Yakama Nation in the acclimation and eventual release of 769,164 Coho salmon into Icicle Creek.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Assisting the Yakama Nation with the reintroduction of Coho to the mid-Columbia River basin is important because it supports recovery of a functionally extirpated salmonid species and meets tribal trust responsibilities.</p> <p><b>The problem:</b></p> <p>Indigenous natural Coho salmon were decimated in the early 1900s and no longer occupy the mid-Columbia river basins. Reasons for decline include the construction and operation of mainstem Columbia River hydropower projects, habitat degradation, release locations, harvest management, and hatchery practices.</p> <p><b>The objective:</b></p> <p>The objective is to assist, primarily, the Yakama Nation and other partners in re-establishing naturally spawning Coho populations in mid-Columbia tributaries to biologically sustainable levels which provide significant harvest in most years.</p> <p><b>The method:</b></p> <p>The objective is to assist, primarily, the</p>			
<b>Expended</b>	\$0				
<b>Objective</b>	Provide technical assistance to Tribes.				
<b>Primary Benefited Species</b>	Coho salmon or silver salmon ( <a href="#">Oncorhynchus kisutch</a> )				
<b>Primary Benefited Population</b>	<a href="#">Wenatchee River Coho</a>				
<b>Plans</b>	<p>2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho, and White Sturgeon</p> <p>The Service's Native American Policy</p>				
<b>Keyword</b>	Tribal				
<b>Need Number</b>	N-002				
<b>Partners</b>	<p>Bonneville Power Admin. (\$40000)</p> <p>Washington Department of Fish and Wildlife</p> <p>Yakama Nation</p>				
<p><b>Accomplishments</b></p> <table border="1"> <tr> <td>Number of Fishery Management Plan production tasks implemented (PART)</td> <td>2</td> </tr> <tr> <td>number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)</td> <td>3</td> </tr> </table>			Number of Fishery Management Plan production tasks implemented (PART)	2	number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)
Number of Fishery Management Plan production tasks implemented (PART)	2				
number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)	3				

<p>Number of other Fishery Management Plan tasks implemented for populations of management concern.</p>	<p>2</p>	<p>Yakama Nation and other partners in re-establishing naturally spawning Coho populations in mid-Columbia tributaries to biologically sustainable levels which provide significant harvest in most years.</p> <p><b>Further description:</b></p> <p>The Coho reintroduction program is led by the Yakama Nation and funded by Bonneville Power Administration. Benefits include restoration and rebuilding Coho salmon to the Wenatchee River and Methow River basins. The Leavenworth National Fish Hatchery is located on the Icicle Creek. The Leavenworth National Fish Hatchery is one of three hatcheries in the Leavenworth National Fish Hatchery Complex. The Complex was authorized by the Grand Coulee Fish Maintenance Project, April 3, 1937, and reauthorized by the Mitchell Act, May 11, 1938. Currently, the Complex is funded through a reimbursable agreement (sub activity-1932) with the Bureau of Reclamation as mitigation for Grand Coulee Dam. Other guiding authorities include by the US v. Oregon and the US Canada Treaty.</p>
---	----------	--

13231-A-006 - [Fish Health Inspections and Certifications](#)

<b>Facility</b>	Lower Columbia River Fish Health Center	<b>Accomplishment Summary</b>  Twenty-eight stocks of salmon and other fish used to fulfill mitigation and restoration plans in the Columbia River Basin were monitored for health, inspected for disease, and certified as fit and healthy for release.
<b>Expended</b>	\$338629	
<b>Objective</b>	Meet the Service's responsibilities for mitigating fisheries.	
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )	
<b>Primary Benefited Population</b>	<a href="#">White Salmon River fall run (tule) Chinook</a>	
<b>Plans</b>	<p>U.S. Fish and Wildlife Service National Aquatic Animal Health Policy</p> <p>Carson NFH Spring Chinook Salmon Hatchery and Genetic Management Plan</p> <p>Spring Creek NFH Hatchery and Genetic Management Plan</p> <p>Little White NFH Spring Chinook Salmon Hatchery and Genetic Management Plan</p> <p>Little White NFH Upriver Bright Fall Chinook Salmon Hatchery and Genetics Management Plan</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>Warm Springs Hatchery and Genetic Management Plan (draft)</p> <p>Eagle Creek NFH Coho Salmon Hatchery and Genetic Management Plan</p>	<b>Description</b>
		<b>The importance to the Resource:</b>
		The fish at 6 National Fish Hatcheries and Abernathy Fish Technical Ctr. are regularly examined throughout their life cycle to ensure that healthy fish, meeting the requirements of National, State, and Tribal Fish Health Policies, are produced and released in the lower Columbia River Basin.
		<b>The problem:</b>
		Disease outbreaks reduce viability and survival of hatchery fish. The fish from these hatcheries are critical to help overcome the impaired habitat and obstruction from dams, and to allow harvest in the Columbia River Basin and ocean fisheries; unhealthy fish do not survive.
		<b>The objective:</b>
		Regular exams at each hatchery provides information necessary to manipulate the environmental/cultural conditions to maintain healthy fish and to avoid losses due to disease. We also provide technical and certification/diagnostic services to tribal, federal, state, and private biologists to improve health and conserve fish resources in the NW.
		<b>The method:</b>
		The Lower Columbia River Fish Health Ctr. uses veterinary technology to monitor health

	Eagle Creek NFH Winter Steelhead Hatchery and Genetic Management Plan	
<b>Keyword</b>	Fish Health	
<b>Need Number</b>	N-002	
<b>Partners</b>	National Oceanic and Atmospheric Administration, Fisheries	
<b>Accomplishments</b>		
Number of post-stocking survival tasks met, as prescribed by Recovery plans for hatchery propagated listed species. (PART)	6	
Number of other Recovery Plan tasks implemented for T&E populations	9	
Number of Fishery Management Plan production tasks implemented (PART)	1	
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	1	
Number of applied aquatic scientific and technologic tools shared with partners.	1	
Number of techniques and culture technology tools developed.	1	
Number of applied science and technology tasks implemented as prescribed by Fishery Management Plans. (PART)	2	
		and prevent disease in 5 salmon species, lamprey, steelhead and sturgeon. In FY2006, we conducted 220 exams on over 7000 fish at the hatcheries to monitor, inspect and certify the health of 16,500 adult fish and over 35 million juveniles.
		<b>Further description:</b>
		The fish at 6 National Fish Hatcheries and Abernathy Fish Technical Ctr. are regularly examined throughout their life cycle to ensure that healthy fish, meeting the requirements of National, State, and Tribal Fish Health Policies, are produced and released. The fish from these hatcheries are critical to help overcome the impaired habitat and obstruction from dams, and to allow harvest in the Columbia River Basin and ocean fisheries; unhealthy fish do not survive. The Lower Columbia River Fish Health Ctr. uses veterinary technology to monitor health and prevent disease in 5 salmon species, lamprey, steelhead and sturgeon. Regular exams at each hatchery provides information necessary to manipulate the environmental/cultural conditions to maintain healthy fish and to avoid losses due to disease. In FY2006, we conducted 220 exams on over 7000 fish at the hatcheries to monitor, inspect and certify the health of 16,500 adult fish and over 35 million juveniles. We also provided technical assistance for tribal, federal, and state biologists and certification/diagnostic services to private aquaculture facilities, all to conserve aquatic resources through improved fish health. Mitchell Act funding from NOAA helps support this work.

13231-A-007 - [National Wild Fish Health Survey](#)

<b>Facility</b>	Lower Columbia River Fish Health Center	<p><b>Accomplishment Summary</b></p> <p>Surveyed over 1500 wild fish from 21 watersheds in WA, OR, ID and the Columbia River to evaluate disease and to prevent spread of aquatic pathogens for improved aquatic ecosystem management.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Initiated by Congress in 1997 because wild fish populations were being decimated by disease, the National Wild Fish Survey gathers health information for wild fish to ascertain the extent of disease problems and ways to manage disease in the wild.</p> <p><b>The problem:</b></p> <p>Disease disables and kills wild fish. A limited knowledge of disease sources and their environmental inducers inhibits better management of habitat problems for wild fish.</p> <p><b>The objective:</b></p> <p>The 9 National Fish Health Ctrs undertook this project to survey the health of wild fish and to make this information available to federal, state, and tribal fishery managers. Information is used to improve fisheries management and monitor specific populations. The national database (<a href="http://wildfishsurvey@fws.gov">http://wildfishsurvey@fws.gov</a>) is available for public use.</p> <p><b>The method:</b></p> <p>In FY06, the Lower Columbia River FHC examined over 1500 wild fish from 21 watersheds in WA, OR, ID and the Columbia River. We tested for 13 pathogens (virus, bacteria, parasites) using state-of-the-art</p>
<b>Expended</b>	\$64977	
<b>Objective</b>	Facilitate management of aquatic habitats on national and regional scales.	
<b>Primary Benefited Species</b>	Rainbow trout ( <a href="#">Oncorhynchus mykiss</a> )	
<b>Primary Benefited Population</b>	<a href="#">Wind River summer run steelhead</a>	
<b>Plans</b>	<p>National Wild Fish Health Survey</p> <p>U.S. Fish and Wildlife Service National Aquatic Animal Health Policy</p> <p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>2000 NMFS FCRPS Biological Opinion - December 21, 2000</p> <p>Yakima Subbasin Plan</p>	
<b>Keyword</b>	Fish Health	
<b>Need Number</b>	N-002	
<b>Partners</b>	<p>Confederated Tribes of The Warm Springs</p> <p>Oregon Department of Fish and Wildlife</p> <p>U.S. Geological Survey</p>	

(\$5000)  
 Washington  
 Department of Fish and  
 Wildlife  
 Yakama Indian Nation  
 (\$900)

technology to confirm presence/absence of disease in freshwater and seagoing fish.

**Further description:**

The National Wild Fish Health Survey was initiated by Congress in 1997 because wild fish populations were being decimated by disease and there was little information available on the extent of the problem and ways to manage disease in the wild. The 9 National Fish Health Ctrs undertook this project to survey the health of wild fish and to make this information available to federal, state, and tribal fishery managers. This year, the Lower Columbia River Fish Health Ctr, in cooperation with the Yakama Nation, extensively sampled over 10 fish species in Drano Lake, a popular fishing lake that also serves as nursery habitat for Chinook salmon, a resting area for salmonid adults migrating up the Columbia River and the inlet/outlet for the Little White Salmon Hatchery fish. In anticipation of Condit Dam removal, fish in the White Salmon River were sampled for future health comparisons. Information from the wild fish health surveys are used by state/federal agencies for Ecosystem Diagnosis models for improving aquatic resource management and by the various cooperators for monitoring specific populations of fish. The national database, a repository of all survey information, is available for managerial and public use.

**Accomplishments**

Number of population assessments completed	21
Number of post-stocking survival tasks met, as prescribed by Recovery plans for hatchery propagated listed species. (PART)	1
Number of other Recovery Plan tasks implemented for T&E populations	1
Number of post stocking survival tasks met as prescribed by Fishery Management Plans, for hatchery propagated depleted species (PART)	1
Number of other Fishery Management Plan tasks implemented for populations of management concern.	1
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	3
Number of applied aquatic scientific and technologic tools shared with partners.	1
Number of techniques and culture technology tools developed.	1
Number of applied science and technology tasks implemented as prescribed by Recovery Plans. (PART)	1
Number of applied science and technology tasks implemented as prescribed by Fishery Management Plans. (PART)	2

**13231-A-009 - [Umatilla Tribal Salmon Supplementation: Fish Health Monitoring and Certification](#)**

<b>Facility</b>	Lower Columbia River Fish Health Center	<p><b>Accomplishment Summary</b></p> <p>Certified health of 395,000 salmon destined for the supplementation and restoration programs in the Umatilla Basin for the Confederated Tribes of the Umatilla Indian Reservation.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Water management issues and over-harvesting decimated populations of salmon in the Umatilla Basin of Eastern Oregon. The Confederated Tribes of Umatilla undertook a supplementation program to reestablish the salmon runs by using stocks from the Columbia River National Fish Hatcheries.</p> <p><b>The problem:</b></p> <p>Because this program involves inter-basin transfers of fish, health officials of Washington, Oregon and US Fish &amp; Wildlife Service require that all fish be certified in order to establish healthy, viable stocks able to survive and return to the Umatilla Basin.</p> <p><b>The objective:</b></p> <p>By originally using fish from the Lower Columbia River Hatcheries and mitigating for irrigation, the Umatilla Tribe re-established a run of salmon to the desert. Lacking space to rear all returnees, additional supplementation was achieved by rearing eggs from the successful Umatilla R. returns at the Little White Salmon NFH.</p> <p><b>The method:</b></p> <p>The Umatilla stock of spring Chinook are reared at the Little White Salmon NFH. Fish</p>
<b>Expended</b>	\$12135	
<b>Objective</b>	Provide fish for Tribal resource management.	
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )	
<b>Primary Benefited Population</b>	<a href="#">Umatilla River Spring Chinook</a>	
<b>Plans</b>	<p>U.S. Fish and Wildlife Service National Aquatic Animal Health Policy</p> <p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>Little White NFH Spring Chinook Salmon Hatchery and Genetic Management Plan</p> <p>A Research Plan for the Fishery Resources of the Wind River Indian Reservation</p> <p>2000 NMFS FCRPS Biological Opinion - December 21, 2000</p>	
<b>Keyword</b>	Fish Health	
<b>Need Number</b>	N-002	

<p><b>Partners</b></p>	<p>Bonneville Power Administration Confederated Tribes of the Umatilla Indian Reservation Oregon Department of Fish and Wildlife</p>	<p>health personnel regularly examine the fish using clinical and veterinary technology. Healthy juvenile salmon are returned to the Umatilla Basin for acclimation prior to their outmigration to the ocean.</p>
<p><b>Accomplishments</b></p>		<p><b>Further description:</b></p>
<p>Number of post-stocking survival tasks met, as prescribed by Recovery plans for hatchery propagated listed species. (PART)</p>	<p>1</p>	<p>Water management issues and over-harvesting decimated populations of salmon in the Umatilla Basin of Eastern Oregon. The Confederated Tribes of Umatilla undertook a supplementation program to reestablish the salmon runs by using stocks from the Columbia River National Fish Hatcheries. In addition, another important fish of the Umatilla tribe's heritage, Pacific lamprey, are also being restored to the basin. Because this program involves inter-basin transfers of fish, health officials of Washington, Oregon and US Fish &amp; Wildlife Service require that all fish be certified in order to establish healthy, viable stocks able to survive and return to the Umatilla Basin. In FY2006, the Lower Columbia River Fish Health Ctr. regularly examined the health of fish destined for the Umatilla Supplementation Program through the use of clinical and veterinary technology. This information was shared with the Oregon Dept. Fish &amp; Wildlife Pathology Unit and Umatilla Tribe personnel. In addition, the Fish Health Ctr. talks yearly with tribal and state agency personnel to provide input on the Umatilla Hatchery and Basin Annual Operation Plan. The Umatilla program uses fish reared at the Little White Salmon National Hatchery. Funded by BPA.</p>
<p>Number of Fishery Management Plan production tasks implemented (PART)</p>	<p>1</p>	
<p>Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation</p>	<p>2</p>	
<p>Number of applied science and technology tasks implemented as prescribed by Fishery Management Plans. (PART)</p>	<p>2</p>	

13231-A-010 - [Yakama Indian Nation Fish Health Program](#)

<b>Facility</b>	Lower Columbia River Fish Health Center
<b>Expended</b>	\$71142
<b>Objective</b>	Provide technical assistance to Tribes.
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )
<b>Primary Benefited Population</b>	<a href="#">Yakima River Summer/Fall-Run Chinook Salmon</a>
<b>Plans</b>	U.S. Fish and Wildlife Service National Aquatic Animal Health Policy Yakima Subbasin Plan 1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin. Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)
<b>Keyword</b>	Fish Health
<b>Need Number</b>	N-002
<b>Partners</b>	Yakama Indian Nation

**Accomplishments**

Number of post-stocking survival tasks met, as prescribed by Recovery plans for hatchery propagated listed species. (PART)	1
Number of other Recovery Plan tasks implemented for T&E populations	2

**Accomplishment Summary**

The Lower Columbia River Fish Health Ctr. inspected and certified the health of over 1 million salmon for the Yakama Indian Nation's supplementation programs at the Klickitat and Prosser Hatcheries.

**Description**

**The importance to the Resource:**

The Yakima/Klickitat Fisheries Project of the Yakama Nation seeks to rebuild and maintain populations of naturally spawning salmon to replace runs of fish made extinct by habitat changes, harvest, and hydropower.

**The problem:**

Habitat changes, harvest and hydropower have reduced runs of salmon to the Klickitat and Yakima Basins, reducing traditional fisheries and cultural activities of the Yakama Nation.

**The objective:**

As part of a large program that intends to improve salmon survival, the Lower Columbia Fish Health Ctr. (FHC) plays an integral role by helping minimize the transmission of pathogens to produce healthy coho, fall and spring Chinook salmon, and steelhead for release into the Yakima and Klickitat Basins.

**The method:**

The FHC uses up-to-date technology to examine the health of fish coming into and being released from the Yakiman and Klickitat Basins. Along with the Prosser Hatchery and its acclimation sites, the FHC recently took on the fish health care of the Klickitat Hatchery, a new acquisition for the Yakama Nation.

Number of Fishery Management Plan production tasks implemented (PART)	2	<p><b>Further description:</b></p> <p>The FHC visits the Prosser Hatchery at least 20 times per year to monitor fish health and to ensure that proper nutrition and disease management are maintained. Beginning in July, the same protocols are being followed at the Yakama's latest acquisition, the Klickitat Hatchery. For the Lower Yakama supplementation efforts in FY06, we examined the health of 9 stocks of salmon at the Prosser and Klickitat Hatcheries and 2 stocks of salmon at 3 acclimation sites. The wild steelhead kelts are also examined for whirling disease when needed. The Lower Columbia FHC and the Olympia FHC (for Yakama's CleElum Program) sign an annual MOU with the Yakama Nation who funds these programs.</p>
Number of other Fishery Management Plan tasks implemented for populations of management concern.	3	
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	5	
Number of applied science and technology tasks implemented as prescribed by Fishery Management Plans. (PART)	1	

**13231-A-012 - [Ecological Interactions of Wild and Hatchery Fish in the Warm Springs and Deschutes River System](#)**

<b>Facility</b>	Lower Columbia River Fish Health Center	<p><b>Accomplishment Summary</b></p> <p>Measured health of wild Chinook salmon and other native fish from the Warm Springs River and Shitike Creek. Fish health testing shows that wild and hatchery salmon carry the same pathogens, an indication of their identical genetic origins, similar ocean destinations and food sources. Additional field sampling and testing of other native species is ongoing. DNA technology is used for disease detection and to prevent the spread of microbial aquatic nuisance species that cause disease.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>The Warm Springs National Hatchery annually releases 750,000 fish into the Deschutes River system which contains wild Chinook salmon, steelhead and endangered bull trout. It is important to ensure that both the wild and hatchery fish cohabit without adverse consequences, a goal of the Confederated Tribes of the Warm Springs.</p> <p><b>The problem:</b></p> <p>Interactions of wild and hatchery fish can result in disease transmission.</p> <p><b>The objective:</b></p> <p>To increase fish survival and to prevent disease transmission between hatchery and wild fish. While the common myth states that hatchery fish transmit disease to wild fish, the converse can be true and pathogens of native fish may be transmitted through the river water to the captive hatchery fish. This study examines both hatchery and wild fish</p>
<b>Expended</b>	\$9731	
<b>Objective</b>	Facilitate management of aquatic habitats on national and regional scales.	
<b>Primary Benefited Species</b>	Bull trout ( <a href="#">Salvelinus confluentus</a> )	
<b>Primary Benefited Population</b>	<a href="#">Lower Deschutes River core area Bull Trout</a>	
<b>Plans</b>	<p>U.S. Fish and Wildlife Service National Aquatic Animal Health Policy</p> <p>National Wild Fish Health Survey</p> <p>Warm Springs Hatchery and Genetic Management Plan (draft)</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>2000 NMFS FCRPS Biological Opinion - December 21, 2000</p> <p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p>	
<b>Keyword</b>	Fish Health	
<b>Need Number</b>	N-002	
<b>Partners</b>	Confederated Tribes of The Warm Springs	

U.S. Geological  
Survey, Columbia River  
Research Lab

## Accomplishments

Number of population assessments completed	2
Number of post-stocking survival tasks met, as prescribed by Recovery plans for hatchery propagated listed species. (PART)	1
Number of other Recovery Plan tasks implemented for T&E populations	3
Number of post stocking survival tasks met as prescribed by Fishery Management Plans, for hatchery propagated depleted species (PART)	1
Number of other Fishery Management Plan tasks implemented for populations of management concern.	1
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	2
Number of consultations conducted to support Tribal fish & wildlife conservation.	1
Number of techniques and culture technology tools developed.	1
Number of applied science and technology tasks implemented as prescribed by Recovery Plans. (PART)	1
Number of applied science and technology tasks implemented as prescribed by Fishery Management Plans. (PART)	3

### **The method:**

Since the inception of the hatchery, its fish have been subjected to intensive health exams and management by the Lower Columbia River Fish Health Ctr. To address issues of disease transmission between hatchery and wild fish in FY06, wild fish were examined for disease pathogens using DNA technology and standard methodology.

### **Further description:**

Interactions of wild and hatchery fish can result in disease transmission. The Warm Springs National Hatchery annually releases 750,000 fish into the Deschutes River system which contains wild Chinook salmon, steelhead and endangered bull trout. Since the inception of the hatchery, its fish have been subjected to intensive health exams and management by the Lower Columbia River Fish Health Ctr. This is to increase fish survival and to prevent disease transmission to the wild fish. Conversely, the pathogens of native fish can be transmitted through the river water to the captive hatchery fish. To address issues of disease transmission between hatchery and wild fish in FY06, wild fish were examined for disease pathogens. Clinical testing shows that wild and hatchery salmon carry the same pathogens, an indication of their identical genetic origins, similar ocean destinations and food sources. Additional field sampling and testing of other native species is ongoing. DNA technology is used for disease detection and to prevent the spread of microbial aquatic nuisance species that cause disease. This technology is also being tested to determine whether non-lethal sampling methods can be used to detect infections. FONS# 2000-003.

13231-A-016 - [DNA Technology to Improve Hatchery Practices and Reduce Disease](#)

<b>Facility</b>	Lower Columbia River Fish Health Center
<b>Expended</b>	\$30471
<b>Objective</b>	Utilize appropriate scientific and technologic tools in formulating and executing fishery management plans and policies.
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )
<b>Primary Benefited Population</b>	<a href="#">Wild Warm Springs River Spring Chinook</a>
<b>Plans</b>	U.S. Fish and Wildlife Service National Aquatic Animal Health Policy Warm Springs Hatchery and Genetic Management Plan (draft) National Wild Fish Health Survey Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)
<b>Keyword</b>	Fish Technology
<b>Need Number</b>	N-002
<b>Partners</b>	Confederated Tribes of The Warm Springs

**Accomplishments**

Number of other Recovery Plan tasks	4
-------------------------------------	---

**Accomplishment Summary**

New instrumentation allows rapid disease detection through analysis of DNA. This helps determine how to improve hatchery practices to reduce disease and save 1000's of fish.

**Description**

**The importance to the Resource:**

A new DNA technology called quantitative polymerase chain reaction (QPCR) can detect very low levels of disease in eggs, water and young fish. The QPCR instrumentation is used by the Lower Columbia River Fish Health Ctr. to help detect routes of disease, allowing hatcheries to improve or modify practices.

**The problem:**

Bacterial kidney disease kills thousands of salmon every year, resulting in expensive efforts to reduce this disease. The drug erythromycin is used to prevent this disease and improve survival but this has its risks and deducing where disease starts might reduce of this antibiotic.

**The objective:**

Track points of disease dissemination at the hatchery to ascertain how to best control disease so that antibiotic use can be reduced or eliminated.

**The method:**

The QPCR allows studies to determine routes of disease transmission. For instance, the Warm Springs NFH maintains the genetics and environmental integrity of the native wild salmon by identifying their fish with a tiny snout tag which may inadvertently cause localized

implemented for T&E populations		infections.
Number of techniques and culture technology tools developed.	1	<b>Further description:</b>
Number of applied science and technology tasks implemented as prescribed by Recovery Plans. (PART)	1	Bacterial kidney disease kills thousands of salmon every year, resulting in expensive efforts to reduce this disease. A new DNA technology called quantitative polymerase chain reaction (QPCR) can detect very low levels of disease in eggs, water and young fish, something not possible by the standard methodologies. The QPCR instrumentation is used by the Lower Columbia River Fish Health Ctr. to help detect routes of disease, allowing hatcheries to improve or modify practices. For instance, the Warms Springs NFH maintains the genetics and environmental integrity of the native wild salmon by identifying their fish with a tiny snout tag which may inadvertently cause localized infections. The QPCR will allow studies to determine whether this is a route of disease transmission. This is important as it could mean a reduction in use of erythromycin, a drug currently being used to prevent BKD which is a concern to the Confederated Tribes of the Warm Springs Reservation who help manage the hatchery. This is FONS project 13231-2002-008 funded by the Columbia Basin Salmon Initiative.
Number of applied science and technology tasks implemented as prescribed by Fishery Management Plans. (PART)	3	

13231-A-023 - [Supplementation of Chinook Salmon to the Walla Walla Basin](#)

<b>Facility</b>	Lower Columbia River Fish Health Center	<p><b>Accomplishment Summary</b></p> <p>The Lower Columbia River Fish Health Center performed disease inspection and certification of 500,000 Chinook salmon to ensure that healthy fish were delivered to the Confederated Tribes of the Umatilla for restoration efforts in the Walla Walla Basin.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>The Confederated Tribes of the Umatilla Indian Reservation plan to restore Chinook salmon that were originally depleted by environment changes into the Walla Walla Basin.</p> <p><b>The problem:</b></p> <p>Because this program involves inter-basin transfers of fish, health officials of Washington and the US Fish &amp; Wildlife Service require that all fish be certified in order to establish healthy, viable stocks able to survive and return to the Walla Walla Basin.</p> <p><b>The objective:</b></p> <p>The Little White Salmon National Fish Hatchery is cooperating with the Ringold Hatchery in providing salmon to establish a source of healthy spring Chinook for natural spawning augmentation by the Umatilla Tribe.</p> <p><b>The method:</b></p> <p>Using veterinary technology, the Lower Columbia River FHC conducted disease inspections of the adult salmon and health certifications of their progeny to ensure that the fish met the health goals of this restoration project.</p>
<b>Expended</b>	\$2000	
<b>Objective</b>	Provide fish for Tribal resource management.	
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )	
<b>Primary Benefited Population</b>	<a href="#">Umatilla River Spring Chinook</a>	
<b>Plans</b>	<p>Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)</p> <p>U.S. Fish and Wildlife Service National Aquatic Animal Health Policy</p> <p>1999 NMFS Biological Opinion on Artificial Propagation in the Columbia River Basin.</p> <p>2000 NMFS FCRPS Biological Opinion - December 21, 2000</p> <p>Little White NFH Spring Chinook Salmon Hatchery and Genetic Management Plan</p>	
<b>Keyword</b>	Fish Health	
<b>Need Number</b>	N-002	
<b>Partners</b>	Confederated Tribes of the Umatilla Indian Reservation	

**Accomplishments**

Recovery Plan production tasks implemented (PART)	1
Number of other Recovery Plan tasks implemented for T&E populations	4
Number of Fishery Management Plan production tasks implemented (PART)	1
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	1
Number of applied science and technology tasks implemented as prescribed by Fishery Management Plans. (PART)	1

**Further description:**

In last two years, this program was funded under 1937-xxxx with funds from BPA. In FY06, no funding from BPA

13231-A-027 - [Hatchery Review Team Participation by Lower Columbia River Fish Health Ctr](#)

<b>Facility</b>	Lower Columbia River Fish Health Center	<p><b>Accomplishment Summary</b></p> <p>Fish health expertise was contributed to the Hatchery Review Team's analysis and recommendations of Warm Springs National Fish Hatchery (NFH), the Leavenworth NFH Complex, and Eagle Creek NFH.</p> <p><b>Description</b></p> <p><b>The <i>importance</i> to the Resource:</b></p> <p>All USFWS National Fish Hatcheries in the Pacific NW are undergoing a scientific review of their effectiveness in managing fisheries, fulfilling mitigation needs, and to ensure that they meet the critical missions and enhance needs of states, tribes and federal agencies, now and into the future.</p> <p><b>The <i>problem</i>:</b></p> <p>Not all hatcheries are effectively achieving the best results needed.</p> <p><b>The <i>objective</i>:</b></p> <p>There is a need to thoroughly investigate and review the stocks being reared in NW hatcheries to ensure that they are producing the fish stocks best suited for their basins.</p> <p><b>The <i>method</i>:</b></p> <p>A team of experts from USFWS and NMFS gather information, inspect each hatchery and make recommendations for each hatchery. All information is supplied via the hatchery review team website.</p>
<b>Expended</b>	\$15678	
<b>Objective</b>	Develop and improve long-term partnerships with States, Tribes, other Federal agencies, non-governmental organizations, and other Service Programs to develop collaborative conservation strategies for aquatic resources.	
<b>Primary Benefited Species</b>	(0) Multiple Species	
<b>Primary Benefited Population</b>	Not specified	
<b>Plans</b>	Conservation of Columbia Basin Fish, Final Basinwide Salmon Recovery Strategy, 12/2000 (All H Paper)	
<b>Keyword</b>	Management	
<b>Need Number</b>	N-002	
<b>Partners</b>	<p>Confederated Tribes of The Warm Springs</p> <p>National Oceanic and Atmospheric Administration, Fisheries</p> <p>Oregon Department of Fish and Wildlife</p> <p>U. S. Forest Service</p> <p>Washington Department of Fish and Wildlife</p> <p>Yakama Indian Nation</p>	

**Accomplishments**

Number of other Recovery Plan tasks implemented for T&E populations	4
Number of applied science and technology tasks implemented as prescribed by Recovery Plans. (PART)	1

13240-A-009 - [Sooes River strain fall chinook salmon production for out planting.](#)

<b>Facility</b>	Makah National Fish Hatchery
<b>Expended</b>	\$214691
<b>Objective</b>	Provide fish for Tribal resource management.
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )
<b>Primary Benefited Population</b>	Not specified
<b>Plans</b>	Makah NFH Cooperative Agreement The Service's Native American Policy Vision Action Plan and the Hatchery Evaluation Action Plan
<b>Keyword</b>	Tribal
<b>Need Number</b>	N-002
<b>Partners</b>	Makah Indian Nation

**Accomplishments**

Number of Fishery Management Plan production tasks implemented (PART)	1
number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)	1
Number of other Fishery Management Plan tasks implemented for populations of management concern.	3

**Accomplishment Summary**

Restore run of native Fall Chinook salmon to the Sooes River. Returning adults benefit domestic and international ocean fisheries, tribal river fisheries and sport fishing for the general public.

**Description**

**The importance to the Resource:**

Returning adult Sooes river Fall Chinook salmon contribute to salmon returns region wide, supporting ocean commercial fisheries. In addition, Chinook salmon returning to the Sooes River support important tribal commercial and river subsistence fisheries on the Makah Reservation and a thriving sport fishery for non-tribal members.

**The problem:**

The hatchery 's Fall Chinook program was initiated in response to the low returns of adult salmon to the region by the early 70's, due primarily to overfishing, habitat degradation and poor ocean conditions.

**The objective:**

Yearly releases of young Sooes River strain Fall Chinook salmon on the Makah Indian Reservation help to rebuild the depleted run of this unique species to harvestable levels.

**The method:**

In FY2006, the hatchery released 2,149,898 young fall Chinook salmon at 3.13 inches in length into the lower Sooes River.

**Further description:**

	.
--	---

**13240-A-010 - [Coho salmon production for out planting into the Sooes river, Makah Indian Reservation.](#)**

<b>Facility</b>	Makah National Fish Hatchery	<p><b>Accomplishment Summary</b></p> <p>Restore depleted run of coho salmon to the Sooes River. Returning adult salmon contribute to international and domestic ocean fisheries, tribal river fisheries and sport fishing for the public.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Returning adult coho salmon contribute to restoring regional salmon returns, supporting ocean commercial fisheries. In addition, adult coho salmon returning to the Sooes river provide important river commercial and subsistence fisheries to tribal members on the Makah Indian Reservation and offer sport fishing opportunities to the general public</p> <p><b>The problem:</b></p> <p>The hatchery's coho salmon program was initiated in response to the low returns of adult salmon to the region by the early 70's, due primarily to overfishing, habitat degradation and poor ocean conditions.</p> <p><b>The objective:</b></p> <p>Yearly releases of young coho salmon within the Makah Indian Reservation help to rebuild depleted runs of this unique species to harvestable levels.</p> <p><b>The method:</b></p> <p>During FY2006, the hatchery released 181,394 yearling coho salmon at 5.2 inches into the lower Sooes River.</p> <p><b>Further description:</b></p>							
<b>Expended</b>	\$157108								
<b>Objective</b>	Provide fish for Tribal resource management.								
<b>Primary Benefited Species</b>	Coho salmon or silver salmon ( <a href="#">Oncorhynchus kisutch</a> )								
<b>Primary Benefited Population</b>	Not specified								
<b>Plans</b>	Makah NFH Cooperative Agreement The Service's Native American Policy Vision Action Plan and the Hatchery Evaluation Action Plan								
<b>Keyword</b>	Tribal								
<b>Need Number</b>	N-002								
<b>Partners</b>	Makah Indian Nation								
<b>Partners</b>	Makah Indian Nation								
<p><b>Accomplishments</b></p> <table border="1"> <tr> <td>Number of Fishery Management Plan production tasks implemented (PART)</td> <td>1</td> </tr> <tr> <td>number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)</td> <td>1</td> </tr> <tr> <td>Number of other Fishery Management Plan tasks implemented for populations of management concern.</td> <td>4</td> </tr> <tr> <td>Number of technical assistance requests</td> <td>5</td> </tr> </table>		Number of Fishery Management Plan production tasks implemented (PART)	1	number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)	1	Number of other Fishery Management Plan tasks implemented for populations of management concern.	4	Number of technical assistance requests	5
Number of Fishery Management Plan production tasks implemented (PART)	1								
number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)	1								
Number of other Fishery Management Plan tasks implemented for populations of management concern.	4								
Number of technical assistance requests	5								

fulfilled to support Tribal fish and wildlife conservation	.
--	---

**13240-A-011 - [Coho salmon production for transfer to the Waatch River, Makah Indian Reservation.](#)**

<b>Facility</b>	Makah National Fish Hatchery
<b>Expended</b>	\$7058
<b>Objective</b>	Provide fish for Tribal resource management.
<b>Primary Benefited Species</b>	Coho salmon or silver salmon ( <a href="#">Oncorhynchus kisutch</a> )
<b>Primary Benefited Population</b>	Not specified
<b>Plans</b>	Makah NFH Cooperative Agreement The Service's Native American Policy Vision Action Plan and the Hatchery Evaluation Action Plan
<b>Keyword</b>	Tribal
<b>Need Number</b>	N-002
<b>Partners</b>	Makah Indian Nation

**Accomplishments**

Number of Fishery Management Plan production tasks implemented (PART)	1
Number of other Fishery Management Plan tasks implemented for populations of management concern.	4

**Accomplishment Summary**

Rebuild depleted run of coho salmon to the Waatch River. Returning adult salmon contribute to international and domestic ocean fisheries, tribal river fisheries and sport fishing for the public.

**Description**

**The importance to the Resource:**

Returning adult coho salmon to the Waatch River contribute to international and domestic ocean commercial fisheries. In addition, adult returns support important tribal commercial and river subsistence fisheries on the Makah Reservation and offer quality sport fishing opportunities to the general public

**The problem:**

The hatchery's coho salmon program was initiated in response to the low returns of adult salmon to the region by the early 70's, due primarily to overfishing, habitat degradation and poor ocean conditions.

**The objective:**

Yearly releases of young coho salmon within the Makah Indian Reservation help to rebuild depleted runs of this unique species to harvestable levels.

**The method:**

During FY2006, the hatchery transferred 32,396 coho yearling at 5 inches to the Educkett Creek holding facility for later release into the Waatch River.

	<b>Further description:</b> .
--	----------------------------------

**13240-A-012 - [Winter steelhead trout production for transfer to the Waatch River, Makah Indian Reservation.](#)**

<b>Facility</b>	Makah National Fish Hatchery	<p><b>Accomplishment Summary</b></p> <p>Rebuild winter steelhead trout run in the Waatch River, increasing fishing opportunities on the Makah Indian Reservation for both tribal members and the general public.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Returning adult winter steelhead trout to the Waatch River provide quality fishing opportunities on the Makah Indian Reservation for tribal commercial and subsistence fisheries and sport fishing for the general public</p> <p><b>The problem:</b></p> <p>The hatchery's winter steelhead trout program was initiated in response to the low returns of adult trout to the region by the early 70's, due primarily to overfishing, habitat degradation and poor ocean conditions.</p> <p><b>The objective:</b></p> <p>Yearly releases of young winter steelhead trout within the Makah Indian Reservation help to rebuild depleted runs of this unique species to harvestable levels.</p> <p><b>The method:</b></p> <p>During FY2006 the hatchery transferred 25,913 steelhead trout yearling at 7.4 inches to the Educkett Creek holding facility for later release into the Waatch River.</p> <p><b>Further description:</b></p> <p>.</p>			
<b>Expended</b>	\$8000				
<b>Objective</b>	Provide fish for Tribal resource management.				
<b>Primary Benefited Species</b>	Rainbow trout ( <a href="#">Oncorhynchus mykiss</a> )				
<b>Primary Benefited Population</b>	Not specified				
<b>Plans</b>	Makah NFH Cooperative Agreement The Service's Native American Policy Vision Action Plan and the Hatchery Evaluation Action Plan				
<b>Keyword</b>	Tribal				
<b>Need Number</b>	N-002				
<b>Partners</b>	Makah Indian Nation				
<p><b>Accomplishments</b></p> <table border="1"> <tr> <td>Number of Fishery Management Plan production tasks implemented (PART)</td> <td>1</td> </tr> <tr> <td>Number of other Fishery Management Plan tasks implemented for populations of management concern.</td> <td>4</td> </tr> </table>			Number of Fishery Management Plan production tasks implemented (PART)	1	Number of other Fishery Management Plan tasks implemented for populations of management concern.
Number of Fishery Management Plan production tasks implemented (PART)	1				
Number of other Fishery Management Plan tasks implemented for populations of management concern.	4				

13240-A-013 - [Winter steelhead trout production for outplanting in the Sooes River](#)

<b>Facility</b>	Makah National Fish Hatchery	<p><b>Accomplishment Summary</b></p> <p>Rebuild winter steelhead trout run in the Sooes River, increasing fishing opportunities on the Makah Indian Reservation for both tribal members and the general public.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Returning adult winter steelhead trout to the Sooes River provide increased fishing opportunities on the Makah Indian Reservation for tribal commercial and subsistence fisheries and sport fishing for the general public.</p> <p><b>The problem:</b></p> <p>The hatchery's winter steelhead trout program was initiated in response to the low returns of adult steelhead trout to the region by the early 70's, due primarily to overfishing, habitat degradation and poor ocean conditions.</p> <p><b>The objective:</b></p> <p>Yearly releases of young winter steelhead trout within the Makah Indian Reservation help to rebuild depleted runs of this unique species to harvestable levels.</p> <p><b>The method:</b></p> <p>During FY2006, the hatchery released 143,320 steelhead trout yearling at 7.6 inches into the lower Sooes River.</p>					
<b>Expended</b>	\$157000						
<b>Objective</b>	Provide fish for Tribal resource management.						
<b>Primary Benefited Species</b>	Rainbow trout ( <a href="#">Oncorhynchus mykiss</a> )						
<b>Primary Benefited Population</b>	Not specified						
<b>Plans</b>	Makah NFH Cooperative Agreement The Service's Native American Policy Vision Action Plan and the Hatchery Evaluation Action Plan						
<b>Keyword</b>	Tribal						
<b>Need Number</b>	N-002						
<b>Partners</b>	Makah Indian Nation						
<p><b>Accomplishments</b></p> <table border="1"> <tr> <td>Number of Fishery Management Plan production tasks implemented (PART)</td> <td>1</td> </tr> <tr> <td>number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)</td> <td>1</td> </tr> <tr> <td>Number of other Fishery Management Plan tasks implemented for populations of management concern.</td> <td>4</td> </tr> </table>			Number of Fishery Management Plan production tasks implemented (PART)	1	number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)	1	Number of other Fishery Management Plan tasks implemented for populations of management concern.
Number of Fishery Management Plan production tasks implemented (PART)	1						
number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)	1						
Number of other Fishery Management Plan tasks implemented for populations of management concern.	4						

13240-A-014 - [Salmon and steelhead trout carcass distribution to the Makah Indian Tribe](#)

<b>Facility</b>	Makah National Fish Hatchery	<p><b>Accomplishment Summary</b></p> <p>Distribution of adult salmon and steelhead trout carcass to members of the Makah Indian Tribe.</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>Traditionally, adult salmon and steelhead trout provided much needed food through the winter months for Indian tribes in the Pacific Northwest. Adult salmon and steelhead trout carcasses distributed by the hatchery provides a source of food to Makah Tribal members and also non-members when fish numbers are abundant</p> <p><b>The problem:</b></p> <p>The Makah Hatchery was established about 1982 to increase adult salmon and steelhead trout returns to the region. By the early 1970's adult fish returns to the Makah Reservation had dwindled to literally dozens of adult fish returning to local rivers. The decline was due primarily to over fishing and habitat degradation.</p> <p><b>The objective:</b></p> <p>Through a Business lease agreement established between the Makah Tribe (Tribe) and the Makah National Fish Hatchery, the Hatchery is required to provide all spawned and excess adult fish to the Tribe at the time of adult fish return to the Hatchery.</p> <p><b>The method:</b></p> <p>During FY2006, the hatchery distributed approximately 1,000 adult Fall Chinook salmon, 1,500 adult coho salmon and 600 adult winter steelhead trout carcasses to</p>	
<b>Expended</b>	\$4000		
<b>Objective</b>	Provide fish for Tribal resource management.		
<b>Primary Benefited Species</b>	Chinook salmon or king salmon ( <a href="#">Oncorhynchus tshawytscha</a> )		
<b>Primary Benefited Population</b>	Not specified		
<b>Plans</b>	The Service's Native American Policy Vision Action Plan and the Hatchery Evaluation Action Plan		
<b>Keyword</b>	Tribal		
<b>Need Number</b>	N-002		
<b>Partners</b>			
<p><b>Accomplishments</b></p> <table border="1"> <tr> <td>Number of other Fishery Management Plan tasks implemented for populations of management concern.</td> <td>2</td> </tr> </table>			Number of other Fishery Management Plan tasks implemented for populations of management concern.
Number of other Fishery Management Plan tasks implemented for populations of management concern.	2		

	<p>members of the Makah Indian Tribe, with a portion going to non-tribal members.</p> <p><b>Further description:</b></p>
--	--

13240-A-015 - [Egg Incubation Isolation Unit for Lake Ozette Sockeye recovery.](#)

<b>Facility</b>	Makah National Fish Hatchery
<b>Expended</b>	\$7200
<b>Objective</b>	Provide technical assistance to Tribes.
<b>Primary Benefited Species</b>	Sockeye salmon ( <a href="#">Oncorhynchus nerka</a> )
<b>Primary Benefited Population</b>	<a href="#">Ozette Lake ESU</a>
<b>Plans</b>	The Service's Native American Policy Puget Sound and Coastal Washington Hatchery Reform Project Makah NFH Cooperative Agreement
<b>Keyword</b>	Tribal
<b>Need Number</b>	N-002
<b>Partners</b>	Makah Indian Nation

**Accomplishments**

Number of other Fishery Management Plan tasks implemented for populations of management concern.	4
Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	1

**Accomplishment Summary**

Assist the Makah Tribe with their Lake Ozette sockeye recovery efforts. The Makah NFH provides an isolation quarantine facility for egg incubation and thermal marking of egg otoliths.

**Description**

**The importance to the Resource:**

Lake Ozette sockeye salmon have provided food and spiritual sustenance to the Makah Indians since before the arrival of European settlers. Historically, adult returns numbered in the thousands.

**The problem:**

During the last few decades this stock has been reduced to a few hundred adults, due primarily to the loss of freshwater habitat, poor ocean conditions and over harvest. As a result, this stock has been listed as threatened under the Endangered Species Act.

**The objective:**

This project will contribute to the recovery of the Lake Ozette sockeye through propagation efforts conducted at the Makah National Fish Hatchery(Hatchery). Recovery will be accelerated by making available sufficient numbers of young fish to meet stocking requirements specified in the Lake Ozette Sockeye Hatchery and Genetic Management Plan.

**The method:**

In FY06, \$7,200 was used to fund yearly operational costs associated with the egg isolation building, \$2,500 of which the Makah Tribe purchased chlorine tablets. The Hatchery

	<p>successfully incubated 233,000 Lake Ozette sockeye eggs to the eyed stage ( 81 percent) and thermally marked the developing eggs for the Tribe's mark recovery program.</p>
--	--

**Further description:**

13295-A-017 - [Disease monitoring of adult coho for the Yakama Nation](#)

<b>Facility</b>	Olympia Fish Health Center	<p><b>Accomplishment Summary</b></p> <p>Adult coho salmon were scientifically tested to monitor and prevent the spread of diseases and losses to the Yakama coho enhancement project</p> <p><b>Description</b></p> <p><b>The importance to the Resource:</b></p> <p>The Yakama Indian Nation is trying to re-introduce extinct coho to the mid-Columbia River.</p> <p><b>The problem:</b></p> <p>Returning adult coho may have critical pathogens that will impact the survival of progeny. Eggs from the adults spawned are destined to other facilities and areas for further hatching and rearing. Eggs can't be moved to these facilities without proper testing and clearance to avoid undue pathogen transfers.</p> <p><b>The objective:</b></p> <p>Reduce the risk of transfer of critical pathogens to eggs and subsequent progeny at other facilities.</p> <p><b>The method:</b></p> <p>Test representative adults to determine the prevalence and magnitude of critical fish pathogens.</p> <p><b>Further description:</b></p> <p>797 adult coho salmon were sampled and tested for pathogens to assist the Yakama Nation and prevent the spread of diseases in the Columbia River Basin. Test information was used to determine the risk of transfer of</p>
<b>Expended</b>	\$54001	
<b>Objective</b>	Utilize appropriate scientific and technologic tools in formulating and executing fishery management plans and policies.	
<b>Primary Benefited Species</b>	Coho salmon or silver salmon ( <a href="#">Oncorhynchus kisutch</a> )	
<b>Primary Benefited Population</b>	Not specified	
<b>Plans</b>	U.S. Fish and Wildlife Service National Aquatic Animal Health Policy	
<b>Keyword</b>	Fish Health	
<b>Need Number</b>	N-002	
<b>Partners</b>	Bonneville Power Administration Yakama Indian Nation	

	<p>eggs from these adults to various rearing sites within the basin. Information was essential to obtain Co-manager and State permits and cooperation for restoration and enhancement projects by the Tribe.</p>
--	--

13295-A-018 - [Monitoring and Control of Diseases for Yakama Nation Juvenile Coho Salmon](#)

<b>Facility</b>	Olympia Fish Health Center
<b>Expended</b>	\$36858
<b>Objective</b>	Utilize appropriate scientific and technologic tools in formulating and executing fishery management plans and policies.
<b>Primary Benefited Species</b>	Coho salmon or silver salmon ( <a href="#">Oncorhynchus kisutch</a> )
<b>Primary Benefited Population</b>	Not specified
<b>Plans</b>	U.S. Fish and Wildlife Service National Aquatic Animal Health Policy
<b>Keyword</b>	Fish Health
<b>Need Number</b>	N-002
<b>Partners</b>	Bonneville Power Administration Yakama Indian Nation

**Accomplishments**

Number of technical assistance requests fulfilled to support Tribal fish and wildlife conservation	1
--	---

**Accomplishment Summary**

Juvenile coho were monitored and tested to prevent disease and losses during rearing for the Yakama Nation

**Description**

**The importance to the Resource:**

Restoration of mid-Columbia coho will add to fishery opportunities to Native Americans and the general public.

**The problem:**

Coho juveniles are reared at various hatcheries (Leavenworth NFH and Winthrop NFH) and are subject to transfers from other hatcheries outside of the Leavenworth Complex. Preventing the spread and amplification of pathogens and disease is critical to the survival and ultimate success of the project.

**The objective:**

Prevent and reduce the impact of pathogens and disease on fish reared at the various hatcheries within the Leavenworth National Fish Hatchery Complex.

**The method:**

Monitor and test representative juveniles for the presence and magnitude of critical pathogens and disease. Recommend treatments and prevent the transfer of high risk fish within the basin.

**Further description:**

Juvenile coho salmon are reared at the Leavenworth NFH complex for the Yakama Nation's project to restore coho to the upper

	<p>Columbia River basin. Fish health monitoring and testing of 244 fish sampled during the rearing period provided pathogen and disease information used for necessary risk assessment or treatments prior to transfers or releases of this population.</p>
--	---

13265-A-006 - [Production and Distribution of Coho salmon](#)

<b>Facility</b>	Winthrop National Fish Hatchery
<b>Expended</b>	\$0
<b>Objective</b>	Recognize and promote the Service's distinct obligations toward Tribes within the Fisheries Program.
<b>Primary Benefited Species</b>	Coho salmon or silver salmon ( <a href="#">Oncorhynchus kisutch</a> )
<b>Primary Benefited Population</b>	<a href="#">Methow River Coho</a>
<b>Plans</b>	The Service's Native American Policy 2005-2007 Interim Management Agreement for Upriver Chinook, Sockeye, Steelhead, Coho, and White Sturgeon
<b>Keyword</b>	Tribal
<b>Need Number</b>	N-002
<b>Partners</b>	Bonneville Power Administration (\$50000) Yakama Indian Nation

**Accomplishments**

Number of Fishery Management Plan production tasks implemented (PART)	2
number of marking and tagging targets met, as prescribed by Fishery management plans. (PART)	2
Number of other Fishery Management Plan	4

**Accomplishment Summary**

Reared and released 311,000 yearling Coho salmon into the Methow River (tributary to the Columbia River). Produced 310,000 Coho salmon eggs from 354 returning adult salmon for use in Coho salmon production and distribution at Winthrop NFH.

**Description**

**The importance to the Resource:**

Assisting the Yakama Nation with the reintroduction of Coho to the mid-Columbia River basin is important because it supports recovery of a functionally extirpated salmonid species and meets tribal trust responsibilities.

**The problem:**

Indigenous natural Coho salmon were decimated in the early 1900s and no longer occupy the mid-Columbia river basins. Reasons for decline include the construction and operation of mainstem Columbia River hydropower projects, habitat degradation, release locations, harvest management, and hatchery practices.

**The objective:**

The objective is to assist, primarily, the Yakama Nation and other partners in re-establishing naturally spawning Coho populations in mid-Columbia tributaries to biologically sustainable levels which provide significant harvest in most years.

**The method:**

Assist the Yakama Nation with the mid-Columbia Coho reintroduction feasibility project by providing facilities, resources, manpower

tasks implemented for populations of management concern.

and technical expertise.

**Further description:**

Coho salmon have been extirpated from the Mid-Columbia basin for almost half a century. The Yakama Nation, in cooperation with the Bonneville Power Administration, U.S. Fish and Wildlife Service, and additional state and federal agencies initiated a Coho salmon Reintroduction Feasibility Project in 1999. The Winthrop National Fish Hatchery plays an integral role in the reintroduction project. The U.S. Fish and Wildlife Service-Winthrop National Fish hatchery has a cooperative agreement with the Yakama Nation to rear and release 250,000 Coho salmon in specified areas of the Mid-Columbia Basin. Up to 250,000 additional Coho salmon may be transported in to Winthrop NFH for short term acclimation and release.