Bonneville Power Administration
Fish and Wildlife Program FY99 Proposal Form

Section 1. General administrative information

ANNUAL FISH MARKING-MISSING HATCHERY PROD'N GROUPS

Bonneville project number, if an ongoing project 8906500

Business name of agency, institution or organization requesting funding
U.S. Fish and Wildlife Service

Business acronym (if appropriate) USFWS

Proposal contact person or principal investigator:

Name	Walt Ambrogetti
Mailing Address	9317 Highway 99, Suite I
City, ST Zip	Vancouver, Wa 98665
Phone	360/696/7605
Fax	360/696/7968
Email address	Walt_Ambrogetti@mail.fws.gov

Subcontractors. List one subcontractor per row; to add more rows, press Alt-Insert from within this table

Organization	Mailing Address	City, ST Zip	Contact Name
PSMFC	845 S.E. 82nd Dr. Suite100	Gladstone, Or 97027	Pam Kahut
Fish Passage Center	2501 SW First Ave Suite 230	Portland, Or. 97201	Michelle DeHart
CT of Umatilla IR	P.O. Box 638	Pendleton, 0r. 97801	Gary James
Yakama IN	P.O. Box 151	Toppenish, Wa 98948	Tom Scribner
Clatsop EDC	250 36th St.	Astoria, Or 97103	Jim Hill
WDFW	600 Capitol Way N.	Olympia, Wa 98501	Howard Fuss
ODFW	28655 Hwy 34	Corvallis, Or 97333	Mark Lewis

NPPC Program Measure Number(s) which this project addresses.
7.2D.1, 7.2D.3, 7.2D.4, 7.4I (Umatilla Production), 8.4c.2, 8.4D.1

NMFS Biological Opinion Number(s) which this project addresses.

Other planning document references.

If the project type is "Watershed" (see Section 2), reference any demonstrable support from affected agencies, tribes, local watershed groups, and public and/or private landowners, and cite available documentation. 2.1.d.5

Subbasin.

Columbia River Basin and tributaries, from Wells WDFW Hatchery downstream. Snake River Basin and tributaries, from Dworshak National Fish Hatchery downstream.

Short description.

The USFWS will mark various groups of fish for BPA funded projects using mobile fish marking trailers at federal and state hatcheries in the Columbia River basin. In order to meet objectives, a minimum of one marked group of fish for each production release is necessary for evaluation. All fish released from the various facilities along with mark/unmarked ratios are reported to the Pacific States Marine Fisheries Commission (PSMFC). All fish recovered in various fisheries or at the hatchery are sampled to recover coded-wire tags. The various purposes of evaluation include: to estimate the survival of each release group, to estimate the contribution of each release group to ocean and in-river fisheries, to estimate straying rate of hatchery fish, to estimate smolt migration speed, to evaluate hatchery practices, and individual broodstocks.

The USFWS will continue rearing of spring chinook at the Little White Salmon/Willard National Fish Hatchery Complex for release into the Umatilla River as a joint project with the Confederated Tribe of the Umatilla Indian Reservation.

The USFWS will also conduct all the fish health exams necessary to meet fish disease requirements necessary for these fish to be planted in the Umatilla River.

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish		Construction		Watershed

	Resident fish		O & M		Biodiversity/genetics
	Wildlife	X	Production		Population dynamics
	Oceans/estuaries		Research		Ecosystems
	Climate	+	Monitoring/eval.		Flow/survival
	Other		Resource mgmt		Fish disease
			Planning/admin.	X	Supplementation
			Enforcement		Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords-

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
8300600	Operation & Maint of BPA Fish Marking Trailers	8906500 was combined with this project in 1995
8401400	PSMFC/Fish Passage Center Smolt Monitoring Program	sponsor
9101400	Umatilla Hatchery Satellite Project	sponsor
9506300	Yakima River Basin Evaluation	sponsor
	Clatsop Economic Develop Council	sponsor
8906600	WDFW Missing Production Groups	Complementary Project
8906900	ODFW Missing Production Groups	Complementary Project

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2, 3	Objective	Task a,b,c	Task
1	Mark & Release at least one group of smolts from those Federal Hatcheries not currently doing so and mark the fish for the other projects within this contract.	a	Coordinate the marking with all appropriate entities, provide routine supervision of marking areas at each tagging site, and a quality-control plan
2	Recover and decode tags and estimate survival of tagged groups, and evaluate the results	a	Collect snouts from adult returns to hatcheries
3	Prepare an annual written report which will evaluate the survival and contribution of all	a	Retrieve coded wire tag recoveries from PSMFC database.

	representative groups of fish for all federal fish hatcheries in the Columbia River Basin.		
4	Raise Spring chinook salmon at the Little White Salmon/Willard NFH Complex for the Umatilla Program	a	Begin rearing brood year 1998 spring chinook salmon
5	Conduct all fish Health exams necessary to meet the fish disease requirements necessary for these fish to be planted in the Umatilla River	a	Collect all samples and do required lab work and tests. (See Section 7 for more Details on this table.)

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	01/1999	12/1999	65%
2	01/1999	12/1999	2%
3	01/1999	12/1999	4%
4	01/1999	12/1999	22%
5	01/1999	12/1999	7%

Schedule constraints.

NA

Completion date.

Ongoing.

Section 5. Budget

FY99 budget by line item

Item	Note	FY99
Personnel		$129,298
Fringe benefits		$50,282
Supplies, materials, non-expendable property		$69,405
Operations & maintenance		$54,932
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		
PIT tags	# of tags:25,500	$73,950
Travel		$21,593

Indirect costs		$102,535
Subcontracts		
Other		
TOTAL		$501,995

Outyear costs

Outyear costs	**FY2000**	**FY01**	**FY02**	**FY03**
Total budget	$552,195	$607,414	$668,155	734,970
O&M as % of total	11%	11%	11%	11%

Section 6. Abstract

Over 26.3 million juvenile salmonids have been marked by USFWS for evaluation in the Columbia River basin as a result of this project The various purposes of evaluation include: to estimate the survival of each release group, to estimate the contribution of each release group to ocean and in-river fisheries, to estimate straying rate of hatchery fish, to estimate smolt migration speed, to evaluate hatchery practices, and individual broodstocks.

Under this 1999 proposal the USFWS will continue to mark fish for evaluation studies and also continue to rear spring chinook salmon for release for the Umatilla Fisheries Program. The USFWS will also conduct all the fish health exams necessary to meet fish disease requirements for these fish to be planted in the Umatilla River.

Section 7. Project description

a. Technical and/or scientific background

PREVIOUS WORK HISTORY:
In 1989 the USFWS received a BPA contract, "Annual Fish Marking -Missing Hatchery Production Groups" (8906500), to begin annually fish marking/coded-wire tagging production releases of anadromous salmonids at federal hatcheries which were not currently being marked. This project was combined with the ongoing project "Operation and Maintenance of BPA Fish Marking Trailer" (8300600). The (830060) number was dropped after the combining of the projects in 1995. The "Operation and Maintenance of BPA Fish Marking Trailer" Project began in 1983. Under 8300600, the USFWS received funding for 12 years to mark fish for several BPA funded projects such as the Yakima Reprograming study, Youngs Bay- Clatsop County Salmon Rearing Program, Fish Passage Center study, and several other Tribal , State, and Federal Programs. During that time period, fish marking assistance or equipment was not available to many groups

needing to mark fish.

Starting in 1996, the U.S. Fish & Wildlife Service (Service) Little White Salmon/Willard National Fish Hatchery Complex began raising upriver bright fall chinook salmon for the Umatilla Fisheries Program. This program expanded in 1997 to include the rearing of spring chinook salmon. The spring chinook program will continue in 1998 and beyond, however, the upriver bright fall chinook program will be transferred to the the Oregon Department of Fish and Wildlife (ODFW) Bonneville Hatchery after 1998. Both of these programs were originally completed by ODFW, but a reduction in Mitchell Act funding at the Bonneville facility caused ODFW to change their production priorities and the Umatilla fish program was deleted. The U.S. Fish & Wildlife Service agreed to take over this program for the tribe and the ongoing Bonneville Power Administration funding for this project was shifted to the Service. This project was added to our existing Missing Group Contract in 1996. The 1998 fund request for the Little White Salmon/Willard National Fish Hatchery Complex has been adjusted to reflect reduced production due to the transfer of the upriver bright fall chinook program back to ODFW.

PROPOSED WORK IN 1999

The "1999 Annual Fish Marking-Missing Hatchery Production Groups Proposal" is for the USFWS to continue marking fish for ongoing evaluation studies to evaluate survival, contribution and hatchery goals. The USFWS will continue rearing of spring chinook salmon at the Little White Salmon National Fish Hatchery Complex for release into the Umatilla River as a joint project with the Confederated Tribes of the Umatilla Indian Reservation.

The USFWS will also conduct all the fish health examinations necessary to meet fish disease requirements for these fish to be released in the Umatilla River.

The information collected through well established standard procedures for coded-wire tagging of juvenile salmonids will provide a long term database on hatchery fish survival, ocean catch distribution and contribution rates, and Columbia River harvest and return rates. This information is critical for reviewing and auditing performance of artificial propagation (e.g. Integrated Hatchery Operations Team audits), identifying potential interactions such as straying with critical stocks (e.g. Section 7 consultations), managing harvest in the Columbia River basin and in ocean fisheries under the Pacific Fishery Management Council and Pacific Salmon Commission, and for assessing whether fish health, genetics, environmental trends, or other factors have altered the overall performance of artificially propagated stocks over time.

This project complements other marking programs including the Pacific Salmon Commission indicator stock marking, and Mitchell Act, Corps of Engineers, and U.S. Fish and Wildlife Service stock assessment activities. The data collected is accessible to a wide variety of users through the PSMFC database.

The project addresses a number of goals and objectives of the 1994 Columbia River Basin Fish and Wildlife Program including development and demonstration of improved

husbandry practices and fish health at hatcheries (7.2D.1, 7.2D.3, 7.2D.4), marking salmon from hatcheries with high stray rates (8.4C.2), and developing expanded marking programs required for ocean and inriver fisheries where Columbia River weak stocks are caught (8.4D.1). The fish reared for release in the Umatilla River address production objectives under 7.4I.

Reports and Papers:
"Annual Coded Wire Tag Program:Missing Production Groups" Annual Reports 1989,1990,1991,1992,1993,1994,1995,1996,1997.
"Operation and Maintenance of BPA Fish Marking Trailer" Annual Reports, 1984,1985,1986,1987,1988,1989,1990,1991,1992,1993,1994,1995.
Project Presentations were given at the 1992 and 1997 BPA Projects Review Meetings.
Smolt monitoring and adult production reports provide the mechanism for feedback to managers concerning future decisions.

b. Proposal objectives

SCHEDULE (89-065)

1.	Coordinate, plan, and supervise.	All Year.
2.	Mark yearling fish for release in spring.	By September 1, 1999.
3.	Mark underyearling fish.	At least 30 days prior to release.
4.	Bio-sample and recover snouts of marked fish.	At time of spawning.
5.	Recover coded-wire tags and decode.	By January 1, 2000.
6.	Read scales for age analysis.	By January 1, 2000.
7.	Input all bio-data into database.	By January 1, 2000
8.	Analyze all bio-data on representative groups spawned.	By January 1, 2000
9.	Prepare written annual marking and budget report.	By January 1, 2000.
10.	Provide written annual analysis report.	By March 1, 2000.
11.	Rear Umatilla fish.	All Year
12.	Conduct fish health exams on Umatilla fish.	All Year

Activity	Schedule
Activity 1	Coded-wire tag 50k coho salmon at Eagle Creek NFH in January 1999

	to be released in 1999.
Activity 2	Coded-wire tag 50k spring chinook salmon at Little White Salmon NFH in March 1999 to be released in 1999.
Activity 3	PIT tag 1.5k steelhead at Dworshak NFH in February 1999 to be released in 1999.
Activity 4	PIT tag 7.5k spring chinook salmon at Leavenworth NFH in March 1999 to be released in 1999.
Activity 5	PIT tag 6.0k summer chinook salmon at Wells SFH in May 1999 to be released in 1999.
Activity 6	PIT tag 3.0k upriver bright chinook salmon at Priest Rapids SFH in May 1999 to be released in 1999.
Activity 7	PIT tag 7.5k spring chinook salmon at Winthrop NFH in January 1999 to be released in 1999.
Activity 8	Coded-wire tag 100k spring chinook salmon at Carson NFH in May 1999 to be released in 2000.
Activity 9	Coded-wire tag 50k coho salmon at Willard NFH in August 1999 to be released in 2000.
Activity 10	Coded-wire tag 120k spring chinook salmon at Entiat NFH in May 1999 to be released in 2000.
Activity 11	Coded-wire tag 200k spring chinook salmon at Entiat NFH in May 1999 to be released in 1999.
Activity 12	Coded-wire tag 50k coho salmon at Eagle Creek NFH in July 1999 to be released in 2000.
Activity 13	Coded-wire tag 50k coho salmon at Eagle Creek NFH (CEDC) in July 1999 to be released in 2000.
Activity 14	Coded-wire tag and ventral clip 20k spring chinook salmon at Carson NFH (Umatilla) in May 1999 to be released in 2000.
Activity 15	Coded-wire tag and ventral clip 40k spring chinook salmon at Little White Salmon NFH (Umatilla) in May 1999 to be released in 2000.
Activity 16	Fin clip, LV, 600k upriver bright chinook salmon at Little White Salmon NFH in March 1999 to be released in 1999.
Activity 17	Fin clip, RV, 600k upriver bright chinook salmon at Little White Salmon NFH in March 1999 to be released in 1999.
Activity 18	Bio-sample returning adults at various hatcheries associated with BPA

	Missing Production Groups.
Activity 19	Prepare annual marking and budget report associated with BPA Missing Production Groups.
Activity 20	Prepare annual analysis report associated with BPA Missing Production Groups, and other U.S. Fish and Wildlife Service hatchery programs in the Columbia River.
Activity 21	Raise fish for Umatilla Project.
Activity 22	Complete all fish health work on fish for Umatilla Project.

c. Rationale and significance to Regional Programs

This Missing Hatchery Production Groups Project is a multi-agency project with joint cooperation between ODFW, WDFW, and the USFWS. The coordination and regulation of the region wide tagging and tag recovery effort is handled through PSMFC. This cooperative project allows all the Tribes and agencies in the Columbia River basin to have a comprehensive and long term information on survival and contribution of individual hatchery production groups in the basin. Region wide consistency in the tagging programs, data collection and data sharing are important tools that support a variety of critical management activities in the basin.

d. Project history

"1999 Annual Fish Marking-Missing Hatchery Production Groups Proposal"
Project Number #8906500

Over 26.3 million juvenile salmonids have been marked by the USFWS in the past as a result of this contract for evaluation in the Columbia River basin. The Service proposes to mark 1,955,000 fish in 1999. The various purposes of evaluation include: to estimate the survival of each release group, to estimate the contribution of each release group to ocean and in-river fisheries, to estimate straying rate of hatchery fish, to estimate smolt migration speed, to evaluate hatchery practices, and individual broodstocks.

Historic Obligations*
1990 $170,614*
1991 $271,410*
1992 $294,786*

1993 $406,790*
1994 $360,855*
1995 $502,700*
1996 $205,965
1997 $362,913
1998 $407,942
*Totals shown for historic funding are for both project 8300600 and 890065 combined. Funding has fluctuated over the years due to variations in the fish marking programs.

1999 Objectives and Tasks

Objective 1: **Tag and release at least one group of smolts from those Federal and anadromous fish hatcheries not currently doing so in the Columbia River Basin.**

Task 1.1 Coordinate the marking with all appropriate entities, provide routine supervision of marking areas at each tagging site, and provide a quality-control plan.

Task 1.2 Apply coded wire tags, PIT tag, and remove the adipose or other designated fins of smolts in species, numbers, and locations annually approved by Bonneville Power Administration (BPA) and listed in Table 1. All procedures shall conform to those set forth in "Procedures for Coded Wire Tagging of Pacific Salmonids, 1987," or most recent edition (Pacific States Marine Fisheries Commission).

Task 1.3 Report the number and species marked and released each year at each location in the annual report.

Objective 2: **Recover and decode tags and estimate survival of tagged groups, and evaluate the results.**

Task 2.1 Collect snouts from adult returns to hatcheries.

Task 2.2 Recover tags from snouts in Task 2.1 and decode tags.

Task 2.3 Read scales.

Task 2.4 Input data into database.

Task 2.5 Using the above data and the data provided from fish recovered in the commercial fisheries, estimate survival and 95 percent confidence limits therein for each tagged group. When two or more tagged groups are released from a site in a given year, test the null hypothesis that survival was not significantly different at the 95 percent confidence level.

Task 2.6 Analyze the results and recommend improvements in hatchery practices in the annual report.

Objective 3: Prepare an annual written report which will evaluate the survival and contribution of all representative groups of fish for all federal fish hatcheries in the Columbia River Basin.

Task 3.1 Retrieve coded wire tag recoveries from PSMFC database.

Task 3.2 Analyze contribution and survival data for each representative group of fish.

Task 3.3 Prepare an annual report in summarized and narrative format for each representative group of production fish released at each of the following 14 hatcheries:

Willard-Coho Salmon
Entiat-Spring Chinook Salmon
Eagle Creek-Coho Salmon
Little White-Spring Chinook Salmon, URB Fall Chinook Salmon
Winthrop-Spring Chinook Salmon
Carson-Spring Chinook Salmon
Kooskia-Spring Chinook Salmon
Spring Creek-Fall Chinook Salmon
Warm Springs-Spring Chinook Salmon
Leavenworth-Spring Chinook and Steelhead Trout
Dworshak-Spring Chinook Salmon and Steelhead Trout
Wells-Summer Chinook Salmon
Priest Rapids-URB Fall Chinook Salmon
Route Butte-Spring Chinook Salmon

Objective 4: The U.S. Fish and Wildlife Service Little White Salmon/Willard National Fish Hatchery Complex will raise upriver bright fall chinook and spring chinook salmon for the Umatilla Fisheries Program.

Task 4.1 Begin rearing brood year 1998 spring chinook (SCS) salmon.

Objective 5: The U.S. Fish and Wildlife Service Lower Columbia River Fish Health Center at Underwood, Washington will conduct all fish health exams necessary to meet the fish disease requirements necessary for these fish to be planted in the Umatilla River.

Task 5.1 Collect all samples and do required lab work and tests. Monthly health exams and one or two diagnostic exams on the Umatilla fish will be conducted consisting of parasite, bacterial and viral exams for

pathogens of importance to salmonids including an Enzyme Linked Immunosorbent Assay (ELISA) used to initially segregate fish as to high, low or negative Bacterial Kidney Disease levels. This will be followed by a first exam for virus on the fry.

e. Methods-

The Missing Production Groups Report primarily addresses the problem of assessing releases of fish from production facilities. The release information is collected with the USFWS Columbia River (information) System-CRiS. Information prior to the Columbia River basin wide implementation of Cris, and from USFWS hatcheries in Idaho, is obtained from the Interagency StreamNet database (formerly the Coordinated Information System).

Recovery information is obtained from the PSMFC Regional Mark Information Center coded-wire tag database. Tag lists are created for each release year, and reports are generated using the PSMFC TSI format. These reports are downloaded in ASCII format. A series of dBASE V programs transforms these ASCII files into a single dbf file.

A stock Assessment Reference Document is prepared for each hatchery, brood year, and species that had coded-wire tags. Because many fish were released without representative coded-wire tags before the Missing Production Groups program began, a single Production Expansion Factor (PEF) - the total number of fish released divided by the total number of tagged fish released) is calculated for each hatchery, brood year, and species. This PEF is used to expand recovery information for unmarked fish released, and to determine a general picture of the overall contribution and survival rates for each facility.

Total survival and contribution by fishery graphs are prepared with a combination of dBASE programs and spreadsheets. A brief description of the estimated survival and contribution for each species raised and released at national fish hatcheries is calculated. Graphs for each hatchery and species are prepared, and summaries of release and recovery information are also included in the Annual Reports.

f. Facilities and equipment-

The USFWS uses mobile fish marking trailers which were purchased by BPA to mark the fish at hatcheries on the Columbia River and its tributaries. The most modern fish marking machines and techniques are used to mark the fish, the same as used by the ODFW and WDFW.

g. References.

Section 8. Relationships to other projects

The "Annual Fish Marking-Missing Hatchery Production Groups" project has the following sponsors or non-financial supporters: PSMFC, Fish Passage Center, Yakima Indian Nation, Confederated Tribes of the Umatilla Indian Reservation, WDFW, ODFW, Clatsop Economic Development Council, NMFS and the Army COE. The BPA COTR is Tom Morse.

In addition to marking the Missing Production Groups at the USFWS Hatcheries in the Columbia Basin the USFWS will also mark fish for PSMFC/Fish Passage Center (Project # 8401400 Smolt Monitoring Program-multiple agencies). In support of this project, fish will be PIT tagged at Dworshak, Leavenworth, Wells, Priest Rapids, and Winthrop hatcheries.

Fish will be marked for the Confederated Tribes of Umatilla Indian Reservation (Project #9101400 Umatilla Hatchery Satellite Program). Starting in 1996 the USFWS began rearing and marking upriver bright fall chinook and spring chinook salmon in support of this project. The USFWS also conducts all fish health exams necessary to meet fish disease monitoring requirements necessary for these fish to be transferred to the Umatilla River.

Section 9. Key personnel

PERSONNEL FOR THE LOWER COLUMBIA RIVER FISHERIES PROGRAM OFFICE (1/23/98)

AMBROGETTI, WALTER J.

CURRENT TITLE: Deputy Project Leader
Supervisory Fishery Management Biologist
Lower Columbia River Fisheries Program Office

B.S. Fish and Wildlife Management, Oregon State University, 1968

Mr. Ambrogetti joined the USFWS in 1970 and has worked in the field of fish marking for the last 25 years.

OLHAUSEN, STEVEN K.

CURRENT TITLE: Fishery Management Biologist
Lower Columbia River Fisheries Program Office

B.S. Fish and Wildlife Management, Oregon State University, 1973

Mr. Olhausen joined the USFWS in 1975 and has worked in the field of fish marking for the last 14 years.

WILLS, DAVID A.

CURRENT TITLE: Fishery Management Biologist
Lower Columbia River Fisheries Program Office

B.S. Wildlife Management, Humboldt State University, 1976
B.S. Fisheries Biology, Humboldt State University, 1978

Post Graduate studies: Humboldt State University and Uppsalla University, Sweden, 1982-1985.

Mr. Wills joined the USFWS in 1987. He has six years PIT tagging experience and is the current PIT Tag Steering Committee Chairperson.

WALCH, KEN

CURRENT TITLE: Fishery Management Biologist
Lower Columbia River Fisheries Program Office

B.S. Wildlife Management, University of Montana, 1964

Mr. Walch joined the USFWS in 1983 and has worked in the field of fish marking for 15 years.

MAGNESON, DAN

CURRENT TITLE: Fishery Management Biologist
Lower Columbia River Fisheries Program Office

A.S. Wildlife Management, North Dakota State University, 1982
B.S. Fisheries and Wildlife Biology, Iowa State University, 1984

Mr. Magneson joined the USFWS in 1992 and has worked in the field of fish marking for 4 years.

FULLER, CHUCK

CURRENT TITLE: Biological Fisheries Technician
Lower Columbia River Fisheries Program Office

Mr. Fuller joined the USFWS in 1981 and has worked in the field of fish marking for the last 5 years.

KEMPER, PAT

CURRENT TITLE: Biological Fisheries Technician
Lower Columbia River Fisheries Program Office

Mr. Kemper joined the USFWS in 1991 and has worked in the field of fish marking for the last 7 years.

MINOR, CAROLYN

CURRENT TITLE: Fisheries Program Assistant

Mrs. Minor joined the USFWS in 1983 and has worked in an administrative capacity for the agency on fish marking for the last 15 years.

PASTOR, STEPHEN

CURRENT TITLE: Fishery Management Biologist
Columbia River Fisheries Program Office

B.S. Biology, Pennsylvania State University, 1972

Mr. Pastor joined the USFWS in 1974 and has worked in the field of fish marking/hatchery data base for the last 12 years.

PERSONNEL FOR THE LITTLE WHITE SALMON/WILLARD NFH COMPLEX (1/23/98)

PAPPAS, MICHAEL

CURRENT TITLE: Fish Culturist 5

B.S. Biology, Central Missouri State University, 1975

Mr. Pappas joined the USFWS in 1983 and has worked in hatchery production since that time.

PERSONNEL FOR THE LOWER COLUMBIA RIVER FISH HEALTH CENTER (1/23/98)

GUTENBERGER, SUSAN K.

CURRENT TITLE: Supervisory Microbiologist/Project Leader
Lower Columbia River Fish Health Center

Ph.D. Microbiology, Oregon State University, 1993
M.S. Veterinary Science, University of Idaho, 1983
B.S. Microbiology and Zoology, University of Idaho, 1976

Dr. Gutenberger joined the USFWS in 1997 as the project leader at the Lower Columbia River Fish Health Center and has worked in the field of fish health from 1987 until the present time.

KERR, THERESA A.

CURRENT TITLE: Biological Science Technician, (Micro)
Lower Columbia River Fish Health Center

Undergraduate work Biology, Columbia Gorge Community College

Ms. Kerr has worked in the field of fish health, USFWS, from 1985 until the present time.

LEIGHTON, JACKIE A.

CURRENT TITLE: Fishery Program Assistant
Lower Columbia River Fish Health Center

Ms. Leighton has worked for the Federal Government from 1987 until the present time, and in an administrative capacity for agencies relating to fish health and fishery research since 1994.

LUJAN, KENNETH M.

CURRENT TITLE: Fishery Biologist
Lower Columbia River Fish Health Center

M.S. Life Science, New Mexico Highlands University, 1996

B.S. Biology, New Mexico Highlands University, 1993

Mr. Lujan has worked in the field of fish health, USFWS, from 1996, until the present time.

PELTON, ERIC H.

CURRENT TITLE: Fishery Biologist
Lower Columbia River Fish Health Center

Post graduate work Limnology, University of Utah
B.S. Zoology and Limnology, Weber State University, 1967

Mr. Pelton, a certified fish pathologist, began as a hatchery biologist and has worked in the field of fish health for the USFWS from 1977 until the present time.

PETERS SWIHART, MARY H.

CURRENT TITLE: Microbiologist
Lower Columbia River Fish Health Center

M.S. Biochemistry, Purdue University, 1989
M.S. Exercise Physiology, Purdue University, 1985
B.S. Psychology / Chemistry, Hope College, 1983

Ms. Peters Swihart has worked in the field of fish health, USFWS, from 1994, until the present time, and in fish culture and fisheries extension, USGS, for two years.

FTE'S FOR THIS PROJECT

Objective 1 - Marking

		M.D.
Ambrogetti	GS-12	10
Olhausen	GS-11	32
Wills	GS-11	18
Walch	GS-11	30
Magneson	GS-09	38
Fuller	GS-07	59
Kemper	GS-07	59
Minor	GS-07	14
	TOTAL	260

Objective 2 - Bio-sampling

		M.D.
Olhausen	GS-11	2

Walch	GS-11	5
Wills	GS-11	4
Olson	GS-11	5
Fuller	GS-07	10
Kemper	GS-07	10 ‘
	TOTAL	36

Objective 3 - Annual Report

		M.D.
Olhausen	GS-11	18
Pastor	GS-11	34
	TOTAL	52

Objective 4-Fish Rearing

Pappas	WG-05	260
	TOTAL	260

Objective 5- Fish Health

		MD
Gutenberger	GS-12	5
Kerr	GS-07	25
Leighton	GS-06	5
Lujan	GS-09	5
Pelton	GS-11	5
Peters Swihart	GS-11	20
Temporary Help	GS-07	30
	TOTAL	95

Section 10. Information/technology transfer

Reports and Papers:
“Annual Coded Wire Tag Program:Missing Production Groups” Annual Reports 1989,1990,1991,1992,1993,1994,1995,1996,1997.
“Operation and Maintenance of BPA Fish Marking Trailer” Annual Reports, 1984,1985,1986,1987,1988,1989,1990,1991,1992,1993,1994,1995.
Project Presentations were given at the 1992 and 1997 BPA Projects Review Meetings.
Smolt monitoring and adult production reports provide the mechanism for feedback to managers concerning future decisions.