Bonneville Power Administration

Section 1. General administrative information

HOOD RIVER PRODUCTION PROGRAM - OAK SPRINGS, POWERDALE AND PARKDALE O&M

Bonneville project number, if an ongoing project 9301900

Business name of agency, institution or organization requesting funding
CONFEDERATED TRIBES OF THE WARM SPRINGS RESERVATION OF OREGON AND OREGON DEPARTMENT OF FISH AND WILDLIFE

Business acronym (if appropriate) CTWSRO and ODFW

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

Organization	Mailing Address	City, ST Zip	Contact Name
NA			

NPPC Program Measure Number(s) which this project addresses.
7.4L.2

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

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.
Wy Kan Ush Me Wa Kush Wit, the Anadromous Fish Restoration Plan: page 25 - 26; in U.S. Forest Service East Fork Hood River and Middle Fork Hood River Watershed Analyses, page 3-15, paragraph 4; and U.S. Forest Service, West Fork Watershed Analysis, page 6-7, Botany, Fisheries and Wildlife paragraph.

Subbasin.
Hood River

Short description.
Restore depressed populations of summer and winter steelhead and re-establish a self-sustaining spring chinook salmon population in the Hood River subbasin. Broodstock will be collected at the Powerdale Facility. Broodstock will be held and spawned at the Parkdale Facility. Eggs will be transferred to Oak Springs Hatchery (summer and winter steelhead) and Round Butte Hatchery (spring chinook) for incubation and rearing.

Section 2. Key words

2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish		Construction		Watershed
	Resident fish	X	O & M		Biodiversity/genetics
	Wildlife		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

3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship

8805303	HRPP (CTWSRO) - M&E	Monitoring and evaluating project implementation
8805304	HRPP (ODFW) - M&E	Monitoring and evaluating project implementation
8902900	HRPP (ODFW) - Pelton Ladder/Hatchery	Spring chinook rearing for Hood River release
9500700	HRPP (PGE) - O&M	Operation and maintenance of Pelton Ladder rearing cells

Section 4. Objectives, tasks and schedules

4. Objectives, tasks and schedules

Objectives and tasks

and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Operate and maintain Powerdale Fish Facility	a	Enumerate and collect biological data on adult salmonids returning to Powerdale Dam
		b	Collect 30 wild summer steelhead for broodstock
		c	Collect 75 wild winter steelhead for broodstock
		d	Collect 110 spring chinook for broodstock
		e	Transport adult salmonids
2	Operate and maintain Parkdale Facility	a	Hold and spawn 30 wild summer steelhead
		b	Hold and spawn 75 wild winter steelhead
		c	Hold and spawn 110 spring chinook
		d	Transfer spring chinook eggs to Round Butte Hatchery

		e	Acclimate 60,000 winter steelhead smolts.
		f	Assist with acclimation of 125,000 spring chinook smolts.
		g	Assist with acclimation of 30,000 summer steelhead smolts.
		h	Purchase necessary equipment to operate fish facilities
3	Operate and maintain Oak Springs Incubation and rearing for Hood River production	a	Incubate, rear, and fin mark 30,000 summer steelhead smolts at Oak Springs Hatchery.
		b	Incubate, rear, and fin mark 60,000 winter steelhead smolts at Oak Springs Hatchery.
		c	Transport smolts to Hood River acclimation sites

Objective schedules and costs

schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	10/1998	9/1999	
2	10/1998	9/1999	
3	10/1998	9/1999	
			TOTAL 0.00%

Schedule constraints.

NONE

Completion date.

ON GOING

Section 5. Budget

5. Budget

FY99 budget by line item

budget by line item

Item	Note	FY99
Personnel		$162,441
Fringe benefits		$45,977
Supplies, materials, non-expendable property		$55,615
Operations & maintenance		$26,466
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	backhoe/front end loader, utility vehicle	$20,000
PIT tags	# of tags:	
Travel		$3,550
Indirect costs		$133,018
Subcontracts		$20,500
Other		
TOTAL		$467,567

Outyear costs

costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	$398,000	$411,000	$430,000	$445,000
O&M as % of total	100%	100%	100%	100%

Section 6. Abstract

6. Abstract

The goal of HRPP is to restore summer and winter steelhead trout populations and reestablish spring chinook using supplementation techniques in the Hood River subbasin in accordance with the Hood River Production Master Plan of July, 1991. Project objectives include a phased-in level of production that will eventually produce 150,000

summer steelhead, 85,000 winter steelhead and 250,000 spring chinook smolts. Supplementation of steelhead utilizes hatchery reared smolts derived from wild stocks of the respective races. Reintroduction of spring chinook will be achieved through use of Deschutes stock which are from an adjacent subbasin and likely to be best suited to habitat conditions found in the Hood River subbasin. The techniques of supplementation will allow increased spawner escapement and distribution of adults which should result in increased numbers of naturally produced juveniles to emigrate from the system. Ongoing and planned habitat restoration activities will result in improved egg to smolt survival. Cooperation with other entities has resulted in improved upstream and downstream fish passage. Some of the stock recovery/restoration measures implemented in this project include: restricting passage of out-of-basin and excess hatchery adults at Powerdale Dam (Rm 4), use of Hood River broodstock, matrix spawning, acclimation and volitional releases.

The ultimate measure of project success will be the achievement of adult return goals found in the Hood River Master Plan. ODFW and CTWS M&E projects on Hood River have gathered five years of baseline information and will be used to evaluate project implementation.

Section 7. Project description

7. Project descriptiont

a. Technical and/or scientific background.

The Hood River subbasin is home to four species of anadromous salmonids: chinook salmon, coho salmon, steelhead, and sea run cutthroat trout. Indigenous spring chinook salmon were extirpated during the late 1960's. The naturally spawning spring chinook currently present in the subbasin are the progeny of Deschutes stock released into the subbasin beginning in 1993. The historical Hood subbasin hatchery steelhead program utilized out-of-basin stocks for many years. Recently the indigenous stocks of summer and winter steelhead have been determined by ODFW to be at a moderate to high risk of extinction and NMFS has included these steelhead stocks in the ESA designation of a "Threatened" species.

The HRPP is a fish supplementation project in the lower Columbia River funded by BPA and jointly implemented by CTWSRO and ODFW. The primary goals of the HRPP are to (1) re-establish naturally sustaining runs of spring chinook salmon in Hood River, (2) rebuild naturally sustaining runs of summer and winter steelhead in Hood River, (3) maintain genetic characteristics of the various Hood River populations, and (4) contribute to tribal and non-tribal fisheries, ocean fisheries, and the Northwest Power Planning Council's (NPPC) goal of doubling salmon runs in the Columbia Basin (O'Toole, P. 1991a).

The NPPC, in accepting the HRPP Master Plan, recommended adopting a three-phased approach which included the collection of baseline information, project implementation and facilities construction, and follow-up monitoring and evaluation (NPPC, 1992). Comprehensive collection of data began in the Hood River subbasin in 1991, including information on the life history and production of anadromous salmonid stocks and habitat availability and inadequacy (CTWS and ODFW 1997). In 1996, The HRPP Environmental Impact Statement was completed cooperatively by BPA, CTWSRO, and ODFW. A record of decision was completed on October 10, 1996 by BPA administrator Randy Hardy, which supports the NPPC goals.

In Section 7 of the 1994 version of the Columbia River Basin Fish and Wildlife Program, the NPPC recommended that implementation of production and habitat be fully coordinated (NPPC, 1994). The Tribes, in Volume II of the Spirit of the Salmon Plan, support the NPPC in the need for a combination of supplementation and habitat restoration project. "Restoration of the anadromous fish populations in the Hood River subbasin will need to incorporate a combination of improved natural fish production and supplementation with cultured fish. Improved natural production could occur through improvements in the screening of irrigation diversions, habitat restoration and passage restoration (CRITFC, 1996)."

The project implementation has included a major switch in the hatchery steelhead broodstock used for Hood River releases, from out of basin stocks (Big Creek and Skamania stocks) to the Hood River indigenous stocks. Collection of wild Hood River stock winter steelhead began in 1992 with an angler catch program. The following year wild Hood River winter steelhead were selected from throughout the entire run at the Powerdale fish ladder and were subsequently matrix spawned to maximize potential genetic diversity. Out-of basin origin winter steelhead have not been passed upstream from Powerdale Dam since 1993, in order to protect the genetic integrity of the wild Hood River spawners. In addition ODFW has implemented the Oregon Wild Fish Management Policy, which states that Hood River stock hatchery winter steelhead can comprise no more than 50% of the total spawner population. Hood River wild summer steelhead were first collected for broodstock during the 1997-98 run. Hatchery origin (Skamania stock) summer steelhead are now prevented from migrating upstream beyond Powerdale Dam. The first release of Hood River stock summer steelhead smolts is planned for the spring of 1999. Winter steelhead smolts released into the Hood River subbasin have been acclimated since 1996. All future releases of winter and summer steelhead are scheduled for volitional release from subbasin acclimation facilities in order to increase smolt to adult survival and minimize potential adverse impacts associated with competition with wild resident and anadromous fish.. ODFW implemented a mandatory wild steelhead release angling regulations within the subbasin beginning in 1992 to maximize protection of the depressed wild stocks during the subbasin sport fishery.

The HRPP project includes a number of physical facilities that have been recently developed or are currently in the development process (CTWS, 1997). HRPP project

implementation has included the recent completion of the Powerdale Dam Fish Facility, which is a state of the art fish trapping and sorting facility. This facility allows project personnel to efficiently trap, sort, and/or transport all the adult salmonids arriving at Powerdale Dam. The project also includes the Parkdale Fish Facility, which is currently under construction. This facility, scheduled for completion before the end of FY 98, will provide adult broodstock holding and spawing facilities as well as juvenile acclimation ponds. The project also will also include new egg incubation, early rearing, and smolt rearing facilities at Oak Springs Fish Hatchery. Construction of these facilities will begin in March 1998. Other important physical facilities associated with the HRPP project include three fish rearing cells in the PGE Pelton Fish Ladder, steelhead acclimation ponds on the East Fork Hood River (provided at no charge by the East Fork Irrigation District, and temporary fish acclimation ponds located on Longview Fibre Company property on the West Fork Hood River.

Deschutes stock spring chinook were first released into the Hood River subbasin in 1993. In 1997 the spring chinook broodstock for the HRPP were collected from adults returning to the Powerdale Fish Facility. Hatchery spring chinook smolts destined for the Hood River subbasin are being reared in cells within the modified Pelton fish ladder. This strategy has demonstrated consistently higher smolt to adult survival than conventional rearing methods that are used at other hatcheries in the Columbia River basin. Spring chinook smolts have been volitionally released into the subbasin from acclimation facilities since 1996. All future releases are also scheduled for pre-release acclimation to improve smolt to adult survival and reduce intra and inter-specific competition.

To date, the project has completed and assimilated subbasin biological and physical habitat surveys showing that the available Hood River subbasin anadromous habitat is underseeded and also has identified areas in need of habitat restoration. The project has planned and undertaken some stream habitat restoration projects. One project identified in the approved Hood River Master Plan called for the screening of a major irrigation diversion (129 cfs) on the East Fork Hood River. This diversion was screened by the East Fork Irrigation District in 1997. Other habitat projects are being proposed by CTWS for 1998 and 1999 under the “Watershed” catagory.

b. Proposal objectives.

1). Collect, spawn, incubate and rear wild Hood River stock summer steelhead to produce 30,000 smolts for release in the subbasin, while maintaining the genetic integrity of the stock.
2). Achieve a 5% smolt to adult survival rate for an adult return to the subbasin of 1,500 hatchery reared Hood River stock summer steelhead.
3). Collect, spawn, incubate and rear Hood River stock winter steelhead to produce 60,000 smolts for release in the subbasin, while maintaining the genetic integrity of the stock.

4). Achieve a 5% smolt to adult survival rate for an adult return to the subbasin of 3,000 hatchery reared Hood River stock winter steelhead.
5). Collect, spawn, incubate and rear spring chinook salmon (Deschutes stock) returning to Hood River to produce 125,000 smolts for release in the subbasin, while maintaining the genetic integrity of the stock.
6). Achieve a 1% smolt to adult survival rate for an adult return to the subbasin of 1,250 hatchery reared spring chinook.
7). Supplement wild production of summer and winter steelhead stocks with Hood River stock hatchery steelhead consistent with ODFW's Wild Fish Management Policy.
8). Bolster natural spring chinook production by passing all Deschutes stock spring chinook in excess of HRPP broodstock needs above Powerdale Dam.

c. Rationale and significance to Regional Programs.

The NPPC under the Columbia River Basin Fish and Wildlife Program has approved a number of projects in the state of Oregon, Washington, and Idaho that are similar to HRPP. Several of these projects have been successfully implemented, including combinations of supplementation and habitat projects within the Umatilla and Yakima subbasins, involving state and tribal entities (CBFWA, 1997).

The O&M for this supplementation project is designed to restore depressed summer and winter steelhead stocks in the Hood River subbasin through the use of native Hood River stock smolt releases.The project also is designed to re-establish a self-sustaining spring chinook salmon population using a stock that is best adapted to the Hood River habitat conditions. It is believed that supplementation is the best alternative for restoring the extremely depressed steelhead stocks. Use of hatchery stocks in the subbasin should help to jump start the remnant naturally reproducing populations and take advantage of the subbasin's underseeded habitat.

The HRPP is consistent with several areas of Section 7.0 of the the NPPC's Fish and Wildlife Program. Specifically, the project is consistent with sections 7.0A, 7.4L.1 ,and 7.4L.2, with a combination of supplementation (HRPP, ongoing projects) and habitat restoration activities, with the ultimate goal of significantly increasing natural fish production and survival. This goal will be achieved through a number of activities within the subbasin besides supplementation including: cooperative habitat restoration measures with private and public land managers, watershed restoration activities coordinated through the Hood River Watershed Council, and improvements in adult fish passage, juvenile fish protection (i.e. screening), water quality and quantity to be achieved by working cooperatively with individuals, PacifiCorp and local agencies. We believe these habitat improvements will increase the likelihood that the HRPP supplementation activities will be successful in achieving project goals.

The companion HRPP M&E Project is assessing the affects of supplementation.

d. Project history

- summary of major results achieved - past costs (see attached spreadsheet)

The HRPP Project 9301900 has evolved from a capital construction and O&M project in FY 98 into solely an O&M project in FY 99.

HRPP reports and technical papers include the following:

CTWSRO and ODFW, Cooperators. 1997. Annual Progress Report. Hood River and Pelton Ladder evaluation studies. Annual Progress Report of the Confederated Tribes of Warm Springs Reservation of Oregon and Oregon Department of Fish and Wildlife (Projects 89-053-03 and 89-053-04) to Bonneville Power Administration, Portland, Oregon.

CTWSRO and ODFW, Cooperators. 1996. Annual Progress Report. Hood River and Pelton Ladder evaluation studies. Annual Progress Report of the Confederated Tribes of Warm Springs Reservation of Oregon and Oregon Department of Fish and Wildlife (Projects 89-053-03 and 89-053-04) to Bonneville Power Administration, Portland, Oregon.

CTWSRO and ODFW, Cooperators. 1995. Annual Progress Report. Hood River and Pelton Ladder evaluation studies. Annual Progress Report of the Confederated Tribes of Warm Springs Reservation of Oregon and Oregon Department of Fish and Wildlife (Projects 89-053-03 and 89-053-04) to Bonneville Power Administration, Portland, Oregon.

Bonneville Power Administration. 1996. Final Environmental Impact Statement. Bonneville Power Administration (Contract DOE/EIS-0241). Portland, Oregon.

O'Toole, P., and Oregon Department of Fish and Wildlife. 1991. Hood River Production Master Plan. Final report of the Confederated Tribes of the Warm Springs Reservation of Oregon and the Oregon Department of Fish and Wildlife (Project 88-053, Contract DE-B179-89BP00631) to Bonneville Power Administration, Portland, Oregon.

Smith, M., and Confederated Tribes of the Warm Springs Reservation of Oregon. 1991. Pelton Ladder Master Plan. Final report of the Oregon Department of Fish and Wildlife and the Confederated Tribes of the Warm Springs Reservation of Oregon (Project 89-029, Contract DE-BI79-89BP01930) to Bonneville Power Administration, Portland, Oregon.

ODFW and CTWSRO (Oregon Department of Fish and Wildlife and Confederated Tribes of the Warm Springs Reservation of Oregon). September, 1990. Hood River Subbasin Salmon and Steelhead Production Plan.

Jennings, M.D. and M. Lambert. 1996. Acclimating salmonids in the wilds near Hood River, Oregon. Proceedings of the 47th Annual Northwest Fish Culture Conference. CTWSRO.

Implementation of the O&M portion of the HRPP has resulted in some significant resource management improvements, including a major switch in the hatchery steelhead broodstock used for Hood River releases, from out of basin stocks (Big Creek and Skamania stocks) to the Hood River indigenous stocks. In 1993 wild Hood River winter steelhead were selected from throughout the entire run at the Powerdale fish ladder and were subsequently matrix spawned to maximize potential genetic diversity. Out-of basin origin winter steelhead have not been passed upstream from Powerdale Dam since 1993, in order to protect the genetic integrity of the wild Hood River spawners (CTWS, 1997). In addition ODFW has implemented the Oregon Wild Fish Management Policy, which states that Hood River stock hatchery winter steelhead can comprise no more than 50% of the total spawner population. Hood River wild summer steelhead were first collected for broodstock during the 1997-98 run. Hatchery origin (Skamania stock) summer steelhead are now prevented from migrating upstream beyond Powerdale Dam. Winter steelhead smolts released into the Hood River subbasin have been acclimated since 1996 (Jennings, 1996). ODFW implemented a mandatory wild steelhead release angling regulations within the subbasin beginning in 1992 to maximize protection of the depressed wild stocks during the subbasin sport fishery.

The HRPP project includes a number of physical facilities that have been recently developed or are currently in the development process. HRPP project implementation has included the recent completion of the Powerdale Dam Fish Facility, which is a state of the art fish trapping and sorting facility. This facility allows project personnel to efficiently trap, sort, and/or transport all the adult salmonids arriving at Powerdale Dam. The project also includes the Parkdale Fish Facility, which is currently under construction. This facility, scheduled for completion before the end of FY 98, will provide adult broodstock holding and spawing facilities as well as juvenile acclimation ponds. The project also will also include new egg incubation, early rearing, and smolt rearing facilities at Oak Springs Fish Hatchery. Construction of these facilities will begin in March 1998. Other important physical facilities associated with the HRPP project include three fish rearing cells in the PGE Pelton Fish Ladder, steelhead acclimation ponds on the East Fork Hood River (provided at no charge by the East Fork Irrigation District, and temporary fish acclimation ponds located on Longview Fibre Company property on the West Fork Hood River.

Deschutes stock spring chinook were first released into the Hood River subbasin in 1993. In 1997 the spring chinook broodstock for the HRPP were collected from adults returning to the Powerdale Fish Facility. Hatchery spring chinook smolts destined for the Hood River subbasin are being reared in cells within the modified Pelton fish ladder. This strategy has demonstrated consistently higher smolt to adult survival than conventional rearing methods that are used at other hatcheries in the Columbia River basin. Spring

chinook smolts have been volitionally released into the subbasin from acclimation facilities since 1996.

To date, the project has completed and assimilated subbasin biological and physical habitat surveys showing that the available Hood River subbasin anadromous habitat is underseeded and also has identified areas in need of habitat restoration. The project has planned and undertaken some stream habitat restoration projects. One project identified in the approved Hood River Master Plan called for the screening of a major irrigation diversion (129 cfs) on the East Fork Hood River. This diversion was screened by the East Fork Irrigation District in 1997.

The HRPP has released approximately 125,000 spring chinook salmon smolts and 40,000 to 60,000 Hood River stock winter steelhead smolts into the subbsain annually since 1993. These releases have been acclimated prior to liberation since 1996.

By FY 98 the capital construction phase of HRPP project included the completion of the Powerdale Dam Fish Facility, which is a state of the art fish trapping and sorting facility. This facility allows project personnel to efficiently trap, sort, and/or transport all the adult salmonids arriving at Powerdale Dam. The project also includes the Parkdale Fish Facility, which is currently under construction. This facility, scheduled for completion before the end of FY 98, will provide adult broodstock holding and spawing facilities as well as juvenile acclimation ponds. The project also will also include new egg incubation, early rearing, and smolt rearing facilities at Oak Springs Fish Hatchery. Construction of these facilities will begin in March 1998. Other important physical facilities associated with the HRPP project include three fish rearing cells in the PGE Pelton Fish Ladder, steelhead acclimation ponds on the East Fork Hood River (provided at no charge by the East Fork Irrigation District, and temporary fish acclimation ponds located on Longview Fibre Company property on the West Fork Hood River.

The ongoing HRPP M&E project provides the data feedback needed to modify project actions when appropriate or necessary. For example: to restore the depressed wild steelhead populations, management actions have been implemented to maximize the protection of the wild component of the two steelhead stocks by implementation of wild release angling regulations. Blockage of access of out of basin stray steelhead and excess Hood River hatchery stock from the subbasin upstream of Powerdale Dam should insure protection of genetic integrety of the wild population. Further, matrix spawning of Hood River broodstock selected from throughout the run has been implemented to maintain natural genetic variability. Results from trapping winter steelhead outmigrants has shown a significant in-river survival advantage for acclimated and volitionally released hatchery smolts. This technique should result in better smolt to adult survival and minimize interaction with wild anadromous and resident juveniles.

The decision to use of Deschutes stock spring chinook was based on habitat similarities in the neighboring subbasin. In 1997, broodstock was taken from the first Deschutes

returns to Hood River and should ultimately result in progeny that are better adapted to the Hood subbasin.

FY 98 was the first year of the HRPP Powerdale, Parkdale, and Oak Springs O&M budget and consisted of a total of $277,000. Funding for previous fiscal years was spent entirely on capital construction of HRPP facilities.

e. Methods.

The Powerdale Fish Facility is in continuous operation at Powerdale Dam (RM 4). This facility gives project personnel the opportunity to enumerate and gather specific biological data from each adult salmonid reaching the dam. Implementation of the Oregon Wild Fish Management Policy ensures that hatchery origin Hood River summer and winter steelhead will comprise no more than 50% of the respective spawning population. Steelhead adults that are not passed upstream at Powerdale Dam are recycled to the river mouth in order to increase sport harvest opportunity. Steelhead broodstock are collected from throughout the respective steelhead and spring chinook runs, in order to maintain natural genetic diversity. Matrix spawning is utilized for steelhead egg takes in order to maintain natural genetic variablity. Spring chinook broodstock collected at the Powerdale Facility in 1997 were transported to Round Butte Fish Hatchery for holding and spawning.

The Parkdale Fish Facility will be used to hold steelhead and spring chinook broodstock until spawning. The steelhead broodstock will be spawned, utilizing the matrix spawning technique, and eggs will be transferred to isolation incubation facilities at Oak Springs Fish Hatchery. A portion of the winter steelhead and spring chinook smolts reared for release into the subbasin will be acclimated at the Parkdale Facility prior to their volitional release, the remainder will be distributed to other acclimation sites. Steelhead that fail to volitionally migrate from subbasin acclimation facilities are transported and released near the mouth of the river. Spring chinook will be spawned at this facility and the eggs will be transferred to Round Butte Fish Hatchery for incubation and rearing.

The Oak Springs Hatchery facilities associated with the HRPP include the isolation incubation and early rearing equipment, and four new raceway ponds for the two Hood River steelhead stocks. Hood River steelhead fingerling are differentially fin-marked during their rearing in hatchery raceway ponds. The steelhead are reared at low density in order to produce a better quality smolt . Fingerling are not graded, however they are seperated into groups of large and small individuals and fed different diets. The ponds of smaller fish is held several additional weeks so their eventual size at release more closely corresponds with the size of fish in the large group. Smolts are transferred to Hood River acclimation facilities.

The ongoing HRPP M&E Project has gathered five years of baseline biological data that will be used to evaluate this supplementation project.

Refer to the ODFW - M&E Project number 8805304 and CTWSRO - M&E Project number 8805303 for project M&E details.

f. Facilities and equipment.

The Powerdale Fish Facility is a new facility that includes a fish trapping and sorting ponds, a mechanical fish lift, truck loading equipment, fish recovery and bypass structures. The facility is comprised of two buildings. One building houses the fish sorting, loading, and water pumping equipment, including electronic controls. The second building provides restroom facilities, as well as equipment storage, and space for the primary air compressor used to operate key trap components. A small utility building is also present on site to house the air compressor used to clean the facility water intake structure. This facility also includes a perimeter security fence and a one mile long single lane access road. The major equipment necessary to operate the facility was acquired during FY 97 and FY 98.

The Parkdale Facility is being completed in FY98 and will include two adult holding ponds, two acclimation ponds, a fish trap/weir, spawning, incubation and cold storage building, office and two bedroom bunkhouse building, shop and garage, and two single family residences. Most of the equipment necessary to operate the facility will be purchased in FY 99. Major capital expenditures will include a tractor,snow blower, tools, office and bunkhouse furnishings and appliances (computer and communication equipment).

The Oak Springs Hatchery facilities associated with the HRPP will include incubation trays with isolation capabilities with sufficient capacity to accomodate upto 250,000 steelhead eggs. Early rearing troughs and circular ponds will be included to handle the Hood River steelhead production. The facility will also include associated equipment to adequately treat the effluent from the isolation incubation and early rearing equipment. A new water supply will be developed to provide the water needed for the four new raceway rearing ponds needed for the final rearing of Hood River steelhead to smolt stage. Most of the equipment needed to operate this hatchery addition will be provided as part of the facility construction. The remaining equipment will be purchased during FY 99.

g. References.

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DOE and BPA (U.S. Department of Energy and Bonneville Power Administration). July 1996. Hood River fisheries project. Final Environmental Impact Statement (DOE/EIS-0241). Bonneville Power Administration, Portland, Oregon.

Jennings, M.D., and M. Lambert. Acclimating salmonids in the wilds near Hood River, Oregon. January, 1996. Proceedings of the 47th Annual Northwest Fish Culture Conference. Victoria, British Columbia, V8V 1X4, Canada. pages 38-44.

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NPPC. 1994. Columbia River Basin Fish and Wildlife Program. Adopted November 15, 1982. Amended December 14, 1994. Northwest Power Planning Council, Portland, OR.

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ODFW and CTWS (Oregon Department of Fish and Wildlife and Confederated Tribes of the Warm Springs Reservation of Oregon). September, 1990. Hood River Subbasin Salmon and Steelhead Production Plan. Cited: pages 27-30.

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USDA Forest Service, Mt Hood National Forest. 1996. East Fork Hood River and Middle Fork Hood River Watershed Analysis. Mt. Hood-Parkdale, Oregon. Cited: chapters 4 and 5.

USDA Forest Service, Mt Hood National Forest. 1996. West Fork of Hood River Watershed Analysis. Mt. Hood-Parkdale, Oregon. Cited: chapters 6 and 7.

USDA Forest Service, Mt Hood National Forest. 1996. Tony Creek Stream Survey. Mt. Hood-Parkdale, Oregon.

Section 8. Relationships to other projects

8. Relationships to other projects

The HRPP is composed of five separate contracts designed to increase production of wild summer and winter steelhead and to re-establish spring chinook within the Hood River subbasin. The five separate contracts, approved by the NPPC and funded by BPA, primarily provide funding for three broad categories of activities. These include engineering, implementation, and monitoring and evaluation studies. Funding for the engineering component of the HRPP provides for the design and construction of facilities at Powerdale Dam, Parkdale, and Oak Springs Hatchery that are needed to implement the HRPP. Funding for implementation provides for broodstock collection, holding, fish transport, spawning, rearing, marking, and tagging. Funding for monitoring and evaluation studies provide for the evaluation of the HRPP and any interaction the hatchery program may be having on wild fish populations.

In section 7 of the 1994 version of the Columbia River Basin Fish and Wildlife Program, the NPPC reiterated its determination that implementation of production and habitat activities be fully coordinated (NPPC, 1994). In 1996, an Environmental Impact Statement was completed for the HRPP cooperatively by BPA, CTWSRO, and ODFW. A record of decision was completed October 10, 1996 by Randy Hardy (BPA Administrator); and supports NPPC goals. The decision was to proceed with Alternative 1, because it best met the needs and purposes stated in the Final EIS and has the best potential for re-establishing or rebuilding and sustaining populations of anadromous salmonids in the Hood River subbasin with a combination of supplementation, habitat improvement, and a monitoring and evaluation program (DOE and BPA, 1996).

There are a number of other, non-BPA funded, programs in the subbasin that have direct positive impacts on the success of the HRPP. For example, the East Fork Irrigation District (EFID) has implemented new fish screening on their 130 cfs diversion from the East Fork Hood River. In the process of installing this new fish screen EFID constructed concrete sediment retention ponds. One of these ponds has been used for steelhead smolt acclimation. EFID is working with HRPP personnel to determine the most efficient type of fish screen to install at their second major diversion. The Middle Fork Irrigation District (MFID) has provided a temporary adult holding facility adjacent to the Parkdale site. In addition MFID has cooperated in the construction of the Parkdale facility, including the water supply tap into their powerhouse tailrace. MFID, in cooperation with

the US Forest Service, has recently installed an upstream migrant fish trap at the base of Clear Branch Dam (Middle Fork Hood River). The Farmers Irrigation District (FID) has implemented instream habitat restoration on a major West Fork tributary. FID has been actively upgrading district fish screens and implementing water conservation measures. The Mount Hood National Forest has had an active stream habitat restoration program throughout the subbasin. Their work has included the placement of instream structures and large wood in each of the main Hood River tributaries with a goal of restoring instream habitat diversity. The Hood River Watershed Group is taking an active role in activities that will improve the overall condition of the Hood River watershed and streams. They recently provided their unqualified endorsement of a proposal that will allow the placement of salmon and steelhead carcasses in the Hood River streams to enhance primary stream productivity. PacifiCorp has provided the land needed for development of the Powerdale Fish Facility. They are currently undergoing FERC relicensing of Powerdale Hydroelectric Project which should result in major improvements to downstream migrant screening, instream minimum flows, overall water quality and development of an SOP for Powerdale Dam. Earlier they made improvements to the adult fish ladder.

Section 9. Key personnel

9. Key personnel

MICK JENNINGS
3430 W 10th Street
The Dalles, OR 97058

EDUCATION

B.S. in Fisheries Science 1965
Dept. of Fisheries and Wildlife
Oregon State University, Corvallis, OR

PROFESSIONAL EXPERIENCE

CONFEDERATED TRIBES OF THE WARM SPRINGS RESERVATION OF OREGON
The Dalles, Oregon. March, 1995 to present. Salaried-40+hrs/week.
Job Title: **Program Coordinator, Hood River Production Program**
Duties: This position oversees the Tribal portion of the Hood River Production Program (HRPP), a Bonneville Power Administration funded program which is to restore anadromous fish runs in Hood River. Duties include oversight of project administration, engineering, construction, monitoring and evaluation of Hood River research, habitat evaluation and fish culture. This position updates Tribal Fish and Wildlife Committee, Tribal Council, Northwest Power Planning Council and others on progress of HRPP. This position budgets and administers a $500,000 monitoring and evaluation contract of

Hood River research and supervises a staff of five full-time and three seasonal employees in an office in The Dalles, Oregon.

OREGON DEPARTMENT OF FISH AND WILDLIFE
Portland, Oregon. April, 1990 to February, 1995. Salaried 40+hrs/week.
Job Title: **Steelhead Program Leader**
Duties: This position directs, guides and assists the regions in the Department to implement a Statewide Steelhead Management program. Major duties consist of providing programmatic direction by coordinating the implementation of the policies, objectives and guidelines contained in the Statewide Steelhead Plan; preparing quarterly program progress reports, annual Steelhead Report, and other special reports and news releases; preparing and monitoring biennial budget; directing the research necessary to implement the Steelhead Plan; directing staff involved in collection and analysis of fisheries data; coordination of projects affecting steelhead resources; and providing guidance to Department personnel responsible for implementing the Steelhead Plan on state-of-the-art steelhead management techniques.

OREGON DEPARTMENT OF FISH AND WILDLIFE
Roseburg-Grants Pass, Oregon
Job Title: **District Fish Biologist**, June, 1982 to March, 1990. Salaried-40+hrs/week.
Assistant District Fish Biologist, November, 1966 to May, 1982. 40hrs/week
Duties: Management biologist responsible developing, planning, supervising, analyzing and completing various fish management programs in the district. Approximately 60 percent of activities involved habitat protection and restoration. A considerable amount of the habitat restoration activities involved adult and juvenile fish passage issues. Improvements to artificial fish passage barriers that I assisted in design and personally worked on included Little Butte Dam, Fielder Dam, Waters Creek Dam, Savage Rapids Dam, Kane Creek culvert, and Wimer Dam. I was continually evaluating fish passage at the approximately 100 small dams in the Rogue Basin. Also, a major part of my duties was spent supervising the fish screens program in the upper Rogue where over 150 rotary screens were in operation. Coordinated stream habitat restoration projects with the five USFS ranger districts that I worked with were routinely reviewed and evaluated for fishery resource benefits.

PUBLICATIONS/JOB COMPLETIONS

Steelhead Plan, Oregon Department of Fish and Wildlife, Wade M., et al. 1995. This is a comprehensive plan for production and management of Oregon's anadromous steelhead. I was the primary person responsible for its development and completion, including setting up and overseeing technical and public advisory committees, incorporating comments and developing support of co-managers and the public, and finally adoption by the Fish and Wildlife Commission. This process took about 18 months.

Jennings, M., Hooton, B., Jacobs S., Kostow, K., McPherson, B., Nickelson T., Smith, A., Weeks, H. 1995. Biennial report on the status of wild fish in Oregon. Oregon Department of Fish and Wildlife. Portland, Oregon. 217 p.

Jennings, M. D., M. Lambert. Acclimating salmonids in the wilds near Hood River, Oregon. January, 1996. Proceedings of the 47th annual Fish Culture Conference. Victoria, British Columbia, V8V 1X4, Canada. pages 38-44.

Jennings, M., Lambert, M. B., O'Toole, P. 1995. Hood River and Pelton Ladder evaluation studies. Annual Progress Report (Project 89-053-03) of the Confederated Tribes of the Warm Springs Reservation of Oregon. In cooperation with Oregon Department of Fish and Wildlife. Report B, pages 173-285 to Bonneville Power Administration, Portland. Oregon.

Jennings, M., Lambert, M.B., McCanna J. 1996. Hood River and Pelton Ladder evaluation studies. Annual Progress Report (Project 89-053-03) of the Confederated Tribes of the Warm Springs Reservation of Oregon. In cooperation with Oregon Department of Fish and Wildlife. Report B, pages 163-257 to Bonneville Power Administration, Portland, Oregon.

JIM NEWTON
3701 West 13th Street
The Dalles, Oregon 97058

EDUCATION

B.S. in Wildlife Management 1970
Dept. of Fisheries and Wildlife
Oregon State University, Corvallis, OR.

PROFESSIONAL EXPERIENCE

OREGON DEPARTMENT OF FISH AND WILDLIFE
The Dalles, Oregon, May 1981 to present. Salaried monthly - 40+ hours/week.
Job Title: **District Fish Biologist, Mid-Columbia District**.
Duties: This position is responsible for all fishery management activities within the 5,000 square mile Mid-Columbia Fish District. Specific duties include the overseeing of that portion of the Hood River Production Project dealing with the Powerdale Fish Facility operation and maintenance, project coordination with the CTWS and managers of the Round Butte and Oak Springs fish hatcheries. These duties include oversight for the Powerdale Fish Facility operation and maintenance, fish trapping, broodstock collection and transportation, and broodstock spawning. This position budgets and administers a $150,000 operation and maintenance contract for the Powerdale Fish Facility and supervises four full time and three seasonal positions in the Mid-Columbia District Office.

OREGON DEPARTMENT OF FISH AND WILDLIFE

Portland, Oregon. September 1979 to May 1981. Salaried monthly - 40+ hours/week.
Job Title: **Habitat Conservation Division Staff Biologist**.
Duties: This position coordinated the review and comments on State Clearinghouse notices of proposed federally funded projects throughout the state. The review and comments on proposed oil, gas, and geothermal energy exploration projects was also coordinated with department field biologists. This position worked with Portland and appropriate field staff to review and comment on county land use plans being developed and amended throughout the state to insure that the state's fish and wildlife resources were adequately addressed and protected.

OREGON DEPARTMENT OF FISH AND WILDLIFE
The Dalles, Oregon. September 1971 to September 1979. Salaried monthly - 40+ hours/week. Job Title: **Assistant District Fish Biologist**.
Duties: This position assisted the district fish biologist with all phases of fishery management within the Mid-Columbia Fish District. Specific duties included: working with research personnel conducting fishery research on the lower Deschutes River; stream habitat restoration planning and implementation; environmental investigations (i.e. Corps, DSL, Forest Practices, etc); angler use and harvest sampling programs; fish population inventory; and regular and special report preparation.

PUBLICATIONS/JOB COMPLETIONS

Mid-Columbia Fish District Annual Report - 1996, ODFW (unpublished). This is a concise reporting of all fishery management activities occurring within the Mid-Columbia Fish District during calendar year 1996. I was the person responsible for the preparation and completion of this report and distribution within the ODFW. This is an ongoing process that has been greatly facilitated by the preparation of detailed monthly reports. This report provides a concise summary of much of the district's institutional knowledge. 83 p.

Lower Deschutes River Resident Trout Population Inventory Report, ODFW. Newton, James and Leslie Nelson, 1997. This is a report on annual Deschutes River redband trout population inventory in two representative reaches of the lower Deschutes River. I was the person responsible for the initiation and completion of the field inventory, data analysis, and report preparation and completion. This project was completed in cooperation with the CTWS. 32 p.

Annual Progress Report - Lower Deschutes River, Oregon, Fish Population Studies (federal aide report for Sport Fish Restoration funding). Newton, James and Steven Pribyl, 1996. This is a comprehensive summary of lower Deschutes River anadromous fish studies, including harvest and population and spawner escapement estimates. I am the person responsible for the annual inventory program and completion of annual data analysis and progress report completion. This is an ongoing program that provides

important biological data that is used as a valuable tool for fish management strategies. 37 p.

Lower Deschutes River Management Plan and Environmental Impact Statement. BLM, et al. 1993. This is a comprehensive plan for recreational use of the lower 100 miles of the Deschutes River. The plan also contains specific management goals and objectives for natural resource management. I was one of the people comprising the technical team that drafted much of the plan dealing with natural resource management within the river corridor. I provided much of the technical support for the fish and wildlife resources covered by this plan. Development of the plan included considerable coordination with other state, federal, and local government agencies, as well as the CTWS, and various river user groups. This plan took more than four years to complete. 160 p.

RANDALL J. ROBART
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Maupin, Oregon 97037

EDUCATION

A.S. Fisheries Technology 1977
Mt. Hood Community College
Gresham, Oregon

PROFESSIONAL EXPERIENCE

OREGON DEPARTMENT OF FISH AND WILDLIFE
Oak Springs Fish Hatchery, Maupin Oregon. February 1987 to present. Salaried 40+ hrs/week
Job Title: **Fish and Wildlife Manager 2**
Duties: This position manages all aspects of Oak Springs Fish Hatchery, including: fish propagation, facility maintenance, staff development, planning, and monitoring and evaluation. This position is responsible for rearing three stocks of catchable and fingerling-sized rainbow trout, one stock of hatchery summer steelhead, one stock of wild summer steelhead, and two stocks of wild winter steelhead, as well as maintaining two hatchery rainbow brood stocks. This position closely coordinates fish culture activities with four ODFW administrative regions, ODFW headquarters staff, seven other ODFW hatcheries, and seven ODFW fish districts. This position also closely coordinates with HRPP personnel in all aspects of the Hood River stock summer and winter steelhead production.

OREGON DEPARTMENT OF FISH AND WILDLIFE
Round Butte Fish Hatchery, Madras, Oregon. October 1984 to February 1987. Salaried 40+ hrs/week
Job Title: **Fish and Wildlife Manager 1**
Duties: This position managed all aspects of fish culture at Round Butte Fish Hatchery, including: fish propagation, facility maintenance, staff development, planning, and

monitoring and evaluation. This position is responsible for rearing one stock of hatchery summer steelhead and one stock of hatchery spring chinook. Facility management included the operation of an adult trapping facility located at the Pelton Regulation Dam on the Deschutes River. This position closely coordinates fish culture activities with one ODFW administrative region, ODFW headquarters staff, one ODFW fish district, Portland General Electric Company staff, and CTWSRO.

EXPERTISE

Described above

PUBLICATIONS / JOB COMPLETIONS

There are no relevant publications. Job completions are adequately described above.

JAMES W. GIDLEY
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EDUCATION

A.S. in Fisheries Technology
Mt. Hood Community College
Gresham, Oregon

PROFESSIONAL EXPERIENCE

OREGON DEPARTMENT OF FISH AND WILDLIFE
Cascade Locks, Oregon. April 1982 to present. Salaried 40 hrs/wk
Job Title: **Assistant Hatchery Manager**
Duties: This position assists with the planning and supervision of hatchery operations, including: adult broodstock collection, spawning, incubation, rearing, and liberation of smolts. This position is responsible for maintaining daily, monthly and annual facility reports, as well as maintaining hatchery equipment and grounds.

OREGON DEPARTMENT OF FISH AND WILDLIFE
Nehalem, Oregon. April 1979 to April 1982. Salaried 40 hrs/wk
Job Title: **Fish and Wildlife Technician 1**
Duties: This position assisted with the collection of adult broodstock, which was sorted by lot, species, sex, and maturity. This position assisted with all phases of the fish culture program, equipment and grounds maintenance, and record keeping.

OREGON DEPARTMENT OF FISH AND WILDLIFE
Butte Falls, Oregon. August 1976 to April 1979. Salaried 40 hrs/wk
Job Title: **Fish and Wildlife Technician**
Duties: This position assisted with various fish culture activities, including fish feeding, collection of mortalities, and record keeping. The position also assisted with the collection of adult broodstock at remote sites, fish spawning, and the transfer of eggs. This position also was responsible for driving and maintaining the fish liberation truck.

PUBLICATIONS / JOB COMPLETIONS

There are no relevant publications. Job completions are adequately described above.

Section 10. Information/technology transfer

10. Information/technology transfer

Project planning, implementation, and continued monitoring of the project will be summarized within the HRPP Annual Report to BPA (Projects 8905303 and 890304). Project findings and other information will be presented to the public and outside agency staff and NPPC through oral presentations and local newspaper reports.