

**Bonneville Power Administration Power Administration  
Fish and Wildlife Program FY99 Proposal  
Section 1. General administrative information**

**Nez Perce Tribal Hatchery**

**Bonneville project number, if an ongoing project** 8335000

**Business name of agency, institution or organization requesting funding**  
Nez Perce Tribe

**Business acronym (if appropriate)** NPT

**Proposal contact person or principal investigator:**

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**Subcontractors.**

<b>Organization</b>	<b>Mailing Address</b>	<b>City, ST Zip</b>	<b>Contact Name</b>
Sampsel Consulting Services	P.O. Box 1249	Ocean Park, WA 98640	Roy Sampsel
Valley Helicopter	P. O. Box 54	Clarkston, WA 99403	Jim Pope
TBD - Electrophoretic sampling			
TBD - Construction			

**NPPC Program Measure Number(s) which this project addresses.**

7.4.M, 7.4.M.1, 7.4.M.2, 7.5.B.1, 7.3.B.2

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

0682 - Endangered Species Act Section 7 Consultation. Biological Opinion. Nez Perce Tribal Hatchery 1998 - 2002 Hatchery Operations.

**Other planning document references.**

Wy Kan Ush Me Wa Kush Wit (Nez Perce Tribe et al 1995); Clearwater Subbasin Plan (NPT and IDFG 1990); Anadromous Fish Management Plan for 1992 - 1996 (Idaho Department of Fish and Game 1992)

**Subbasin.**

Clearwater

**Short description.**

Design, construct and implement the Nez Perce Tribal Hatchery supplementation program to assist in recovery and restoration of spring/summer, and fall chinook in the Clearwater Subbasin.

**Section 2. Key words**

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish	X	Construction		Watershed
	Resident fish	*	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.**

Stock identification, life history, predation, hatchery-wild interactions, ecological interactions, NATUREs, acclimated releases, environmental monitoring, ESA.

**Section 3. Relationships to other Bonneville projects**

Project #	Project title/description	Nature of relationship
8909802	Salmon Supplementation Studies in Idaho Rivers - NPT	NPTH to provide supplementation fish for studies.
9403400	Assessing Summer/Fall Chinook Restoration in the Snake River Basin	NPTH fall chinook production areas defined by this study.

**Section 4. Objectives, tasks and schedules**

Obj	Task

<b>1,2,3</b>	<b>Objective</b>	<b>a,b,c</b>	<b>Task</b>
1	Planning/Coordination	a	Coordinate supplementation planning internally and with State, Tribal and Federal co-managers.
		b	Participate in consultation with NMFS to address Section 7 terms and conditions for NPTH and to acquire Section 10 permits as necessary. Participate on production coordination committees required by NMFS to meet the Recovery Plan for salmon and address the listing of Snake River steelhead.
		c	Participate as necessary in the CBFWA Five Year Implementation Plan Steering Committee, NPPC Fish and Wildlife Program amendment process, and other budget processes.
2	Implementation	a	Assist BPA with completing elements of the Final Design of NPTH Central Incubation and Rearing Facilities and associated satellite facilities
		b	Assist BPA and construction contractors with directing the construction of NPTH Central Incubation and Rearing Facilities and associated satellite facilities
		c	Monitor, review, and comment on USFS and other agency activities in streams and watersheds where NPTH supplementation has been planned and take appropriate actions to protect watersheds crucial to this project.
		d	Coordinate cultural resource protection prior to and during construction of hatchery and satellite facilities with NPT Cultural Resources Department and BPA.

		e	Coordinate resource protection prior to and during construction of hatchery and satellite facilities with NPT Fisheries Law Enforcement and BPA
3	Operations and Maintenance	a	Acquire broodstock through available forums to insure broodstock availability at project start-up for each salmon species
		b	Continue to provide personnel and materials to rear and release juvenile and adult salmon slated for NPTH production at existing state and federal hatcheries until NPTH can be constructed; e.g., Clearwater, Dworshak, and Kooskia hatcheries.
4	Monitoring and Evaluation	a	Implement a baseline genetic sampling program that is compatible with ongoing monitoring programs. Collect fish samples from Meadow Creek and Lolo Creek for electrophoretic analysis. Other types of genetic sampling techniques will be considered if they are appropriate. Any special collection permits will be submitted as described in Task 1.b
		b	Monitor anadromous and resident fish species composition through snorkel count and/or electrofishing in index areas.
		c	Operate four outmigrant traps; two in Lolo Creek, one in Newsome Creek, and one in Meadow Creek to monitor outmigration of resident fish, coho, steelhead and natural and outplanted chinook. Fish captured will be sub-sampled to collect data on length, weight and origin (hatchery or natural). Determine trap efficiency through mark and recapture of known numbers of juvenile chinook and

			steelhead.
		d	Install and monitor four temporary weirs to enumerate chinook adult returns at Lolo Creek, Eldorado Creek, Newsome Creek, and Meadow Creek.
		e	PIT tag approximately 4,000 parr trapped in Lolo Creek, Newsome Creek and Meadow Creek traps in late summer, fall and spring to evaluate recovery rates of release groups at Lower Granite and further downstream dams. Estimate overwinter and spring survival rates for tagged fish and arrival timing at downstream dams. Monitor adult detections as the tagged fish return.
		f	Prior to release from the hatchery, mark (CWT and/or Ad clip as necessary) spring chinook parr (depending on 1998 returns) and smolts intended for release into treatment streams (smolts - 1999: Lolo Creek, Newsome Creek, Mill Creek, Boulder Creek, Warm Springs Creek, and Meadow Creek) to determine return rate for outplanted fish. Also PIT tag a subsample of up to 4,000 fish prior to outplant. Estimate parr to smolt survival for parr releases, and post-release survival rates for smolt releases. Determine arrival timing at downstream dams. Monitor adult detections as the tagged fish return.
		g	Conduct multiple salmon redd count surveys in spawning areas to determine relative abundance and spawner distribution. Collect biological information from salmon carcasses to determine sex, stage of spawning, age composition of the spawning

			population, and origin (CWT=s).
		h	Radio tag adult fish destined for return to NPTH treatment streams. As adult fish are detected and trapped by Lower Granite interrogation facility or at the weirs, radio tag and track fish to determine movement pattern and length of time prior to spawning.
		I	Monitor interactions between resident salmonids and juvenile chinook salmon and other species of concern where applicable, by outmigrant traps and snorkel surveys.
5	Technology Transfer	a	Participate in the twice annual meetings of the Idaho Salmon Supplementation studies to coordinate NPTH efforts in monitoring baseline conditions and supplementation streams.
		b	Refine production goals in response to new information from M&E baseline data analysis and literature searches.
		c	Compile, analyze and present results of the year=s M&E studies. Compare to similar work (Idaho Supplementation Studies, Stream Inventories, Habitat Evaluation Program) proceeding in the basin.
		d	Prepare and provide quarterly reports stating accomplished activities for project.
		e	Present reports on project activities and findings at annual BPA/CBFWA Project Review ans as requested, to other parties.

**Objective schedules and costs**

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	01/1999	12/1999	6%
2	01/1999	12/1999	6%

3	01/1999	12/1999	75%
4	01/1999	12/1999	7%
5	01/1999	12/1999	6%

**Schedule constraints.**

Length of NPPC 3 step review process, availability of salmon for supplementation in 1999, ability of construction contractors to implement final design plans.

**Completion date.**

Supplementation under this project is planned for at least 4 full salmon generations or 20 years. A decision will be made on or before 2020 whether it is necessary for supplementation to continue under this project.

**Section 5. Budget**

Item	Note	FY99
Personnel	Suppl. 411,938 + M&E 301,454	713,392
Fringe benefits	Suppl. 79,935 + M&E 64,982	144,917
Supplies, materials, non-expendable property	Suppl. 182,900 + M&E 138,720	321,620
Operations & maintenance	Suppl. 92,000 + M&E 61,380	153,380
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	Suppl. 5,950,000 + M&E 50,000	6,000,000
PIT tags	# of tags: 10,000	29,000
Travel	Suppl. 13,000 + M&E 22,914	35,914
Indirect costs	Suppl. 227,694 + M&E 172,119	399,813
Subcontracts	Suppl. 90,000 + M&E 30,000	120,000
Other		
<b>TOTAL</b>	Suppl. 1,097,467 + M&E 820,569 + Capital Construction = 6,000,000	7,918,036

**Outyear costs**

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	8,000,000	6,000,000	4,200,000	2,200,000
O&M as % of total	25%	33%	52%	100%

**Section 6. Abstract**

This project utilizes hatchery supplementation for restoration and recovery of Snake River Basin salmon stocks. Nez Perce Tribal Hatchery (NPTH) is intended to rear and

release fall and spring chinook salmon into rivers and streams with the express purpose of increasing the numbers of fish spawning, incubating and living in the natural environment. It will use the modern technology that hatcheries offer (e.g. incubators, disease control) to overcome the mortality typically occurring in rivers and streams after eggs are laid in the gravel. Moreover, it will also utilize innovative NATUREs techniques to rear fish that are more like wild fish than those typically reared in hatcheries. Project management, direction, and overall outcome will be dependent upon implementation of the comprehensive Monitoring Evaluation Plan (Steward 1996).

Goals and objectives of NPTH, and an indication of expected outcome and time frame, are described in the NPTH Final EIS (BPA et al 1997). These are to:

1. Protect, mitigate and enhance Columbia River Basin Anadromous fish resources;
2. Develop, increase, and reintroduce natural spawning populations of salmon within the Clearwater River Subbasin;
3. Provide long-term harvest opportunities for Tribal and non-tribal anglers within four salmon generations following project completion;
4. Sustain long-term fitness and genetic integrity of targeted fish populations;
5. Keep ecological and genetic impacts to non-targeted fish populations within acceptable limits; and
6. Promote Nez Perce Tribal management of Nez Perce Tribal Hatchery facilities and production areas within Nez Perce Treaty lands.

The Northwest Power Planning Council (NPPC) recognized the opportunity to mitigate impacts to salmon runs in the Clearwater River Subbasin and developed specific measures for implementation of NPTH in its 1982, 1987, and 1994 Fish and Wildlife Programs (FWP). In addition, in 1996, NPTH was included as one of the fifteen high-priority supplementation projects for recovery of Snake River spring and fall chinook salmon.

## **Section 7. Project description**

### **a. Technical and/or scientific background.**

Nez Perce Tribal Hatchery Program is a complex and detailed project that has been in the planning stages for many years and a volume of work has been completed for it. Among them are: the Master Plan (Larson and Mobrand 1992) and its supplement (Johnson et al 1995), the genetic risk assessments (Cramer and Neeley 1992, Cramer 1995), archeological surveys of NPTH sites (Lyon 1995), a predesign plan (Montgomery Watson 1994), Monitoring and Evaluation Plan (Steward 1996) the environmental impact statements (BPA et al 1996, BPA et al 1997), Biological Assessment (Powers 1997), Biological Opinion (Stelle 1997), Record of Decision (Robertson 1997), the response to questions for the three-step process review of the Nez Perce Tribal Hatchery (NPT 1997) and the NPPC A independent scientific review of that response (Pacific Northwest

National Laboratory Ecology Group 1997). In addition, studies evaluating the mainstem Clearwater River as a habitat for fall chinook, and its suitability for supplementation have been conducted by the Nez Perce Tribe in an ongoing BPA funded project (Arnsberg et al 1992, Arnsberg and Statler 1995, Connor 1989, and Connor et al 1990).

The volume of documents created for NPTH clearly define the overall problem and describe the development of NPTH as a solution. They bring forth the background history, scientific literature review, locations of the project, relationship to the FWP as well as other fish plans and projects affecting the Clearwater River Subbasin, such as: the proposed recovery plan, hatchery cumulative effects EIS, Idaho Department of Fish and Game Anadromous Fish Management Plan, Columbia River Fish Management Plan, PACFISH, Return to the River, and the Tribal Recovery Plan.

This volume of work was generated largely at the request of the NPPC and the ISRP and funded, proposed, co-authored and authorized by BPA. **They are the description of NPTH, and they are NPPC and BPA documents.** They must be reviewed by BPA, CBFWA and NPPC (or ISRP) if the program is to be reviewed adequately.

NPTH mitigates for in-place, in-kind losses caused by development of the hydroelectric system in the Pacific Northwest.

For the most part, NPTH has been shepherded through its developmental process by the same key personnel. They include employees of the Nez Perce Tribe Department of Fisheries Resources Management (Program Manager Silas Whitman, Production Director Ed Larson, Hatchery Manager Grant Walker and M&E Biologist/Production Coordinator David Johnson), a number of consultants (Steve Cramer - genetic risk assessments, Cleve Steward - M&E plan, Roy Sampsel - interagency coordination, and the engineering company Montgomery Watson), BPA assistance in fish and wildlife program administration (Bob Austin and Bob Lohn) and environmental assessment (Leslie Kelleher and Kathleen Concannon), and NPPC staff (Harry Wagner, John Marsh and Nora Berwick). It is anticipated that many of these same individuals will continue to play a role as NPTH progresses through its Final Design phase in 1998 and into the construction anticipated in 1999 and also in the development and operation of other tribal supplementation programs; Northeast Oregon Hatchery, Fall Chinook Acclimation facilities and Johnson Creek Supplementation program. Of course the Tribal staff involvement will likely be the mainstay of these programs.

The most significant work related to NPTH are the completion of the Final EIS (BPA et al 1997) and Record of Decision to construct NPTH (Robertson 1997), and response to step two of the NPPC three-step process review (NPT 1997 and Pacific Northwest National Laboratory Ecology Group 1997). These items were completed during, and as a result of, controversy on hatchery programs generated by listing of Snake River salmon and steelhead as endangered, the Return to the River analysis (Independent Scientific Group 1996), and implementation of the Gorton Amendment. It is highly significant that NPTH has undergone such scrutiny during these controversial times and remains a viable

alternative to aid in recovery and restoration of salmon populations.

**b. Proposal objectives.**

Again, the proposal objectives and monitoring and evaluation goals are clearly stated in the BPA documents (described Section 7.a. of this form) that were developed to address NPPC concerns as well as environmental law. Nevertheless, a brief summary is presented herein.

Table 2-1 (pg 2-3) of the NPTH Final EIS (BPA et al 1997) presents the release goals, and species for each satellite or Central Incubation and Rearing Facilities (CIRF) location, as well as the size, water use and fish culture components for NPTH. In summary, 2,800,000 fall chinook, and 768,000 spring chinook will be reared by NPTH. Fall chinook will be released as age 0+ smolts, while spring chinook will either be direct released as parr into three wilderness streams or acclimated at three satellite sites for release as fall release pre-smolts.

Much of Chapter 2 of the Final EIS (BPA et al 1997) describes hatchery operations. Issues addressed include disease management, egg take and incubation, rearing techniques, release techniques, adult collection and broodstock source and management. Principal to the NPTH program is implementation of innovative rearing techniques that have not been used as standard methods by conventional hatchery programs. Incubation and rearing water temperatures, rearing containers, rearing densities, release strategies and broodstock management will all be designed to produce a fish that is better adapted to the natural environment. NATURE=s type rearing designs promoted by NMFS (1995a) will be incorporated into NPTH CIRFs and the supporting satellite sites. These include the use of substrate, subsurface feeding, exposure to natural food, velocity alteration to enhance swimming ability, instream cover, exposure to predators and low density rearing.

Table 2-2 (pg. 2-38) of the NPTH Final EIS (BPA et al 1997) presents the expected adult returns from NPTH. Results are presented by species, location and number used for broodstock, natural production and harvest in 20 years. In summary, 1,452 spring chinook are predicted to return; of these, 646 would be used for brood, 471 for natural production and 335 for harvest. For fall chinook 4,100 adults are expected to return; of these 1,904 would be used for brood, 1,136 for natural production and 1,060 for harvest. Harvest rates for both spring and fall chinook are dependent upon utilization of returning adults according to the Awild:hatchery= spawning protocol. Ultimately, return rates will depend on an improvement passage conditions through the Columbia and Snake River reservoirs. Assumptions utilized in modeling returns and the spawning protocols are described in the Final EIS (BPA et al 1997).

**c. Rationale and significance to Regional Programs.**

The NPTH project relates to the following FWP (NPPC 1994) objectives and measures. First of all, measures under 7.4M all relate specifically to development and construction of NPTH. Measure 7.5.B.1 calls for measures to address supplementation of Snake River fall chinook, which NPTH proposes. Measure 7.3.B.2 calls for implementing the high priority supplementation projects, and NPTH is one of the 15 high priority supplementation projects.

Section 2.1 states that, A...the Council system goal is a healthy Columbia Basin...To implement this goal, the program will deal with the Columbia Basin as a system; will protect, mitigate and enhance fish and wildlife...≡ Section 2.2A supports native species in native habitats. It states AThe program preference is to support and rebuild native species in native habitats, where feasible. This means that remaining fish and wildlife habitat should be protected and restored to promote production of native species, especially habitat that supports weak populations of fish and wildlife.≡

Program measure 4.1 addresses doubling salmon and steelhead runs without loss of biological diversity. It is illustrated in this section that ABoth the potential biological value of weak stocks and the requirements of the Endangered Species Act suggest that the path to doubling must begin with weak populations.≡ In addition, it states Athis weak stock priority includes populations listed under the Endangered Species Act, but is not limited to these populations.≡

Program measure 7.4C.1, A...recognizes that immediate actions may be required for emergency cases, such as badly damaged populations with decreasing escapements.≡ Unprecedented efforts will be needed to prevent species extinction and preserve fish for the future. Fish and Wildlife Program measure 7.4F also states, A...as weak stocks or populations of salmon and steelhead are identified and assessed, supplementation will be one option to consider to help rebuild these stocks.≡ Artificial propagation programs are one measure to attempt to enhance populations and increase natural production in Snake River tributaries. The NMFS draft recovery plan states that Acaptive broodstock and supplementation programs should be initiated and/or continued for populations identified as being at imminent risk of extinction, facing severe inbreeding depression, or facing demographic risks.≡

This project relates to a number of measures in the Snake River Recovery Plan (NMFS 1995a). Measure 4.1.d says to ADevelop planning, implementation and implement management plans for Snake River fall chinook salmon gene bank and conservation programs≡. NPTH will be supplementing listed fall chinook salmon in the Clearwater River. Measures under 4.4 (Improving survival of Columbia River Basin anadromous salmonids by improving quality of fish released from hatcheries) are all addressed by rearing techniques proposed for NPTH. Ecological interaction studies described in Measure 4.5.c. are a focus of NPTH M&E Plan (Steward 1996). And finally, the genetic risk assessments developed for NPTH have researched the origin of the Clearwater runs and identified appropriate stocks to use for supplementation by NPTH (Measure 4.7.d).

Wy Kan Ush Me Wa Kush Wit: Volume I: 5BB14-22; Volume II: 2-118-127 (Nez Perce Tribe et al 1995) recommends AImplement supplementation projects that have met the screening criteria of RASP (1992) and Cuenca et al (1993)≡, which includes NPTH. It also recommends, AEstablish additional programs for each of the subbasin tributary systems to monitor adult escapement and resulting smolt production, and to evaluate (by measuring the number of adults returning) the ability of managers to meet goals set by the Columbia River Management Plan.≡ NPTH M&E protocol will do so. And finally, production goals are also addressed in the Tribal Recovery Plan.

The Clearwater River Subbasin Plan (NPT and IDFG 1990) also recommends completion of NPTH in its efforts to restore natural spawning populations. Recommendations for spring, summer and fall chinook salmon all depend on implementation of NPTH.

#### **d. Project history**

The NPTH program has been in the making since 1982 when the NPPC authorized design and construction plans for fish production facilities on the Nez Perce Indian Reservation. It was listed in the Council=s 1987 FWP as Action Item 703 (g)(2) and in the NPPC 1994 FWP as item 7.4M.

To date, major results are completion of planning, facility and environmental analysis documents needed to meet NPPC, BPA, and legal concerns regarding the evolving science on supplementation issues and its effects on the environment and threatened and endangered salmon populations. The documents are described in section 7.a. of this form.

Adaptive management has already been critical to the development of NPTH. As each document was completed, some amount of revision was required on the original plans. The Supplement to the Master Plan (Johnson et al 1995) intended to capture major changes to the original Master Plan by Larson and Moberg (1992) prior to development of the AProposed action≡ in the Draft EIS (BPA et al 1996). In addition, further review by independent state, tribal, and federal resource scientists, universities, county and local governments, private interest groups and the interested public in general was expressly solicited during the NEPA process. As evidenced by differences between the Draft and Final EIS, the program was revised to respond to these comments also.

This planning process has been costly and has resulted in the dollar amounts shown in the spreadsheet attached with the form.

#### **e. Methods.**

The Final EIS for NPTH (BPA et al 1997) describes the NPTH program. The Monitoring and Evaluation Plan (Steward 1996) presents 224 pages of description and rationale for the methods used to assess effects of NPTH supplementation efforts on its goals of restoring and enhancing naturally spawning populations of salmon. Again, these are BPA

and NPPC documents, they must be reviewed by BPA and NPPC (or the ISRP) in order to put the details of the NPTH program in perspective.

The Final EIS (BPA et al 1997) clearly states that AThe success of the NPTH, other upriver hatchery or natural runs of salmon, whether the salmon are listed or not, depends on salmon recovery efforts (including the Snake River Recovery Plan, the Tribal Restoration Plan and the Fish and Wildlife Program of the Northwest Power Planning Council≡ (pg. 1-14). This statement is made as a follow-up to discussion on the need to improve smolt-to-adult return rates such that there is at least a stable, non-declining salmon returns. Improvements in smolt-to-adult returns will naturally focus on those aspects of the environment that humans control, such as harvest rates, and upstream and downstream passage over dams.

**f. Facilities and equipment.**

The Final EIS for NPTH (BPA et al 1997) presents an overview of facilities, sites and equipment used for this program. Exact detail of the facility needs will not be available until the Final Design is completed in 1998. A NATUREs Design Team, consisting of technical personnel of fishery management agencies, will assist in designing the components of incubating, rearing and holding facilities for NPTH and will work with the Final Design engineers to integrate their ideas into construction. Facility and equipment needs will be based on the outcome of this coordinated effort.

**g. References.**

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Nez Perce Tribe, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Indian Reservation, and the Confederation of Tribes and Bands of the Yakama Indian Nation. (Nez Perce Tribe et al) 1995. Anadromous fish restoration plan: Wy-Kan-Ush-Mi-Wa-Kish-Wit: spirit of the salmon. Volumes I and II. Columbia River Inter-Tribal Fish Commission. Portland, Oregon.

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## **Section 8. Relationships to other projects**

Nez Perce Tribal Hatchery is closely allied, dependent upon and provides support to other Nez Perce Tribal fisheries program projects. These include dependency on implementation of watershed improvement projects in Lolo Creek, Eldorado falls, Squaw and Papoose Creek and McComas Meadows. These systems are either scheduled as Atreatment≅ or Acontrol≅ streams for NPTH or the Salmon Supplementation Studies in Idaho Rivers projects, or will be used as production areas when carrying capacity of

supplementation streams are limited (see Appendix F of BPA et al 1997). Nez Perce Tribal Fish and Wildlife Law Enforcement program (BPA project number 92024) will be critical to safeguarding not only fisheries personnel working in remote locations, but also the facilities and their fish, and will prevent illegal harvest of returning salmon in the mainstem rivers and tributaries. Other NPT supplementation projects (Johnson Creek, NEOH, Fall Chinook Acclimation) will benefit by knowledge gained while implementing NPTH. The M&E Plan for NPTH (Steward 1996) will also form the basis for much of the monitoring and evaluation to occur with these supplementation projects.

In general, NPTH is dependent on the progress of other hatchery programs in the basin. These effects will be related to implementing the production cap required by NMFS (1995b). Acquisition of fall chinook broodstock will rely on Lyon=s Ferry, and Rapid River stock will be used as a start up for spring chinook supplementation. In addition, technology transfer and basinwide coordination of hatchery production efforts will make revisions to annual programs.

Importantly, NPTH is dependent upon salmon recovery efforts undertaken in the Columbia River Basin. None of the hatchery or wild stocks stand alone in this aspect. All stocks have declined to dangerously low levels. The gamut of programs designed to address the critical issues of fish passage, especially, will ultimately decide the fate of salmon in the Snake River.

## **Section 9. Key personnel**

### **Roy Edward Larson, Director of Production (0.5 FTE)**

Nez Perce Tribe Department Fisheries Resource Management

#### **EDUCATION**

M.S. in Veterinary Science, University of Idaho, 1972

B.S. in Agriculture, University of Idaho, 1970

#### **PUBLICATIONS**

Larson, R.E. and Mobrand, L. 1992. Nez Perce Tribal Hatchery Master Plan and appendices. Bonneville Power Administration. Project No. 83-350. Contract No. DE-AI79BP36809.

Larson R.E. and Jose, J.R. 1988. A report of the 1987 - 88 mid-winter supply survey for the Nez Perce Tribe=s low capital low technology anadromous salmonid hatchery project: 83-350 BPA agreement No. DE-AI79BP36809.

Klontz, G.W., Chacko, A.J. and R.E. Larson. 1979. Epidemiology of respiratory diseases in juvenile spring chinook salmon. University of Idaho, Fisheries Resources, College of FWR Sciences Bulletin.

Larson, R. E. 1977. Kelp meal as a diet supplement for salmonids. Proceedings of 38<sup>th</sup>

Northwest Fish Culture Conference, p. 28.

Dulin, M.P., Huddleston, T., Larson, R.E. and Klontz G.W. 1976. Enteric Redmouth Disease. University of Idaho, Fisheries Resources, College of FWR Sciences Bulletin.

#### TECHNICAL EXPERIENCE

Production Director - Nez Perce Tribe Lapwai, ID Oct 1990 - Present. Nez Perce Tribal Hatchery, North East Oregon Hatchery, Johnson Creek Supplementation Project, Fall Chinook Acclimation Facilities, Sturgeon Research, Early Action Watershed Projects.

Production Biologist - Nez Perce Tribe Lapwai, ID Sept 1987 - Sept 1990. Nez Perce Tribal Hatchery, Imnaha Master Plan, Subbasin Planning

Licensed General Contractor - Private Business, Sitka AK Oct 1984 - Sept 1987

Hatchery Manager - Northern Southeast Regional Aquaculture Association, Sitka AK, Sept 1980 - Oct 1984. Medvedjie Central Incubation and Rearing Facility for spring chinook, chum and coho salmon.

Project Leader - Northern Southeast Regional Aquaculture Association, Juneau AK, Apr 1980 - Sept 1980. Salmon Creek Central Incubation and Rearing Facility for pink, chum and coho salmon.

Research Technician I - University of Idaho Fish Disease Lab, Moscow ID Jul 1976 - Apr 1980. Fish health management and fish disease diagnostics

Duties: Provide direction, supervision and management of NPT Fisheries Production program. Co-author Nez Perce Tribal Hatchery Master Plan and Imnaha Master Plan. Responsible for integrating production needs into the multi-species recovery and restoration program of the Nez Perce Tribe. Write proposals for funding. Coordinate project development, production and ESA issues with State, Tribal and Federal agencies. Contract supervision on NPT Fisheries Production projects.

Skills: Twenty two years of experience managing fish culture, fish health, multiple species and innovative supplementation techniques to restore and recover weak or endangered species. Eleven years experience developing the Nez Perce Tribe anadromous and resident fish production programs and coordinating tribal production activities under the Northwest Power Planning Act. Fifteen years experience developing and overseeing contracts for various funding agencies. Twenty two years of experience supervising technical and professional fisheries staff.

#### **Grant W. Walker, Hatchery Manager (1 FTE)**

Nez Perce Tribe Department Fisheries Resource Management

## EDUCATION

Intensive Aquaculture Training, Clearwater Marine, Ltd. Isle of Mann, U.K., 1987.  
B.A. in Biological Science, University of New Orleans, LA, 1981.

## TECHNICAL EXPERIENCE

Nez Perce Tribal Hatchery Manager - Nez Perce Tribe Lapwai, ID. Apr 1990 - Present.  
Nez Perce Tribal Hatchery, North East Oregon Hatchery, Johnson Creek Supplementation Project, Fall Chinook Acclimation Facilities.

Hatchery Manager - Ocean Products Inc., East Machias, ME. Apr 1988 - Sept 1989.  
Gardner Lake Hatchery, Atlantic salmon.

General Manager - Kentrout Ltd., Timau, Kenya, East Africa. 1982 - 1988. Hatchery management, consultant on aquaculture programs.

Buyer/Restorer/Salesman - The Mariner, Inc. New Orleans, LA. 1981 - 1982. Marine antiques, marketing and promotion.

Supervisor - X-ray and Laboratory - Medical Center of Calico Rock, AR. 1974 - 1977.

Duties: Provide direction, supervision and management for NPTH Final Design and Construction and hatchery operation. Responsible for integrating tribal production needs into the NPTH design. Project coordinator for the NATURE=s Design Team. Provide tribal supervision and administration for contracts let under the NPTH program. Responsible for quarterly and annual reports for NPTH. Coordinate project development, production and ESA issues with State, Tribal and Federal agencies.

Skills: Fifteen years of experience managing fish culture, fish health, using limited resources in highly diverse geographic and cultural settings. Seven years experience working specifically on development of the Nez Perce Tribal Hatchery program. Fifteen years experience developing and overseeing contracts for various funding agencies. Fifteen years of experience supervising technical and professional fisheries staff.

## **Sherman C. Sprague, Monitoring and Evaluation Biologist (1 FTE)**

Nez Perce Tribe Department Fisheries Resource Management

## EDUCATION

B.S. in Wildlife Resources with Biology Minor, University of Idaho, 1992

## PUBLICATIONS

Sprague, S. and D.B. Johnson. 1995. Results of Meadow Creek Fish Trapping, 1994. Project report submitted to Nez Perce Tribal Executive Committee, Lapwai, ID.

Sprague, S. and D.B. Johnson. 1997. Results of Meadow Creek Fish Trapping For the

1995 Migratory Year. Project report submitted to Nez Perce Tribal Executive Committee, Lapwai, ID.

Johnson, D.B. and S. Sprague. 1996. Preliminary monitoring and evaluation results for coho salmon outplanted in the Clearwater River subbasin, Idaho, 1995. Nez Perce Tribe Department of Fisheries Resources Management, Lapwai, Idaho.

#### TECHNICAL EXPERIENCE

Project Leader, Nez Perce Tribe, Orofino, ID, Aug. 1997 - Present. Nez Perce Tribal Hatchery, Monitoring and Evaluation Project.

Associate M & E Biologist, Nez Perce Tribe, Orofino, ID, April 1994 - Aug. 1997. Nez Perce Tribal Hatchery, Monitoring and Evaluation Project.

Wildlife Technician, University of Idaho, Moscow, ID, Feb. 1994 - April 1994. Mountain Quail Study

Fisheries Technician, Idaho Dept. of Fish and Game, Eagle/Salmon, ID, March 1993 - Feb. 1994. Idaho Supplementation Studies

Fisheries Technician, Idaho Dept. of Fish and Game, Eagle, ID, Summer 1992. Parr-Density Monitoring and Evaluation Project

Biological Aide, Idaho Dept. of Fish and Game, Eagle, ID, Summer 1991 and 1990. Parr-Density Monitoring and Evaluation Project

Duties: M&E project implementation, management and coordination, budget preparation and management, contract and subcontract preparation and management, report writing, personnel supervision, tribal representation in meetings with IDFG, NMFS, BPA, NPPC, CBFWA, and private consultants, data analysis, computer modeling, public speaking and presentations, and proposal development.

Skills: Seven years experience in field data collection and database analysis for anadromous fishes in the Snake River Basin. Responsible for teaching: fish handling and identification, screw trap and adult weirs operation, snorkeling, stream survey methodology, fish marking (PIT tagging, CWT, fin clips), redd survey methods, and proper data collection techniques to Fisheries Aides and Fisheries Technicians. Participated in NPTH M&E program from its inception. In addition, familiar with electrofishing, seining, hook and line, transect stream survey methodology, life history research, diet analysis, GPS, boat operation and maintenance, radio telemetry, spawning adult salmonids, fish culture activities, and outplanting salmonids (eyed eggs, parr, smolts, adults).

**David B. Johnson, Production Coordinator (0.5 FTE)**

## Nez Perce Tribe Department Fisheries Resource Management

### EDUCATION

M.S. in Biology, Northern Arizona University, 1982

B.S. in Biology, Northern Arizona University, 1979

### PUBLICATIONS

Johnson, D.B. and S. Sprague. 1996. Preliminary monitoring and evaluation results for coho salmon outplanted in the Clearwater River subbasin, Idaho, 1995. Nez Perce Tribe Department of Fisheries Resources Management, Lapwai, Idaho.

Johnson, D.B., R.E. Larson and C. Steward. 1995. Supplement to the Nez Perce Tribal Hatchery master plan. Department of Fisheries Resources Management, Nez Perce Tribe, Lapwai, Idaho.

Johnson, D.B. 1990. Indian Tribes of the Northern Region: A brief history, description of hunting and fishing treaty rights and fish and wildlife management programs. U.S.D.A. Forest Service, Northern Region Office, Missoula, Montana.

Murphy, P.K. and D.B. Johnson. 1990. Nez Perce Tribal review of the Clearwater River Lower Snake River Compensation Plan. Department of Fisheries Resources Management, Nez Perce Tribe, Lapwai, Idaho.

Johnson, D.B. 1987. Preliminary assessment and selected reference information for the proposed Zuni Pueblo warmwater fish hatchery. Report submitted to the Zuni Agency.

### TECHNICAL EXPERIENCE

Production Coordinator - Nez Perce Tribe Lapwai, ID Oct 1997 - Present. Nez Perce Tribal Hatchery, North East Oregon Hatchery, Johnson Creek Supplementation Project

Senior Monitoring and Evaluation Biologist - Nez Perce Tribe, Lapwai ID Oct 1993 - Oct 1997. Nez Perce Tribal Hatchery

District Fish Biologist - North Fork Ranger District, Clearwater National Forest, Orofino, ID. May 90 - Oct 1993. Staff leader for fish, wildlife and watershed programs.

Assistant to Fisheries Program Manager - US Forest Service, Northern Region, Regional Office, Missoula, MT. Jan 1989 - May 1990. Snake River Basin Adjudication, technology transfer.

Area Fisheries Biologist - Bureau of Indian Affairs, Albuquerque Area Office, Albuquerque NM. Mar 1987 - Dec 1988. Technical assistance in fisheries to 14 Indian Tribes.

Fisheries Biologist - Nez Perce Tribe, Lapwai, ID. May 1984 - Mar 1987. Stream

surveys, steelhead ecology, production planning.

Duties: Assist in developing departmental direction, project and budget development and coordination, contract and subcontract review, report writing, NEPA document preparation, personnel supervision, tribal representation in meetings with interagency quorums, and private consultants, public speaking and presentations.

Skills: Fifteen years of experience conducting field work, and providing management direction on fisheries and watershed projects. Responsible for providing and coordinating analysis of effects, including hatchery production, on aquatic habitat and biota sufficient to meet NEPA and ESA requirements. Responsible for overseeing development and completion of NPTH M&E Plan. Eleven years of experience working in the Snake River basin, specifically in the Clearwater Subbasin, on issues related to hatchery and natural production, interagency coordination, ESA, and Nez Perce Tribal fishing rights.

## **Section 10. Information/technology transfer**

Technical information will be distributed through quarterly and annual progress reports to BPA, submittal of findings to scientific journals, LSRCP program review workshops, CBFWA Project Review Workshops, Section 10 Permit Reports, Biological Assessments, Biological Opinions, NEPA documents, Brood Year Production Reports, Final Design Reports, and Construction Memorandums. Project cooperators meet regularly to exchange information and discuss project adaptations.