

**Bonneville Power Administration  
Fish and Wildlife Program FY99 Proposal Form**

**Section 1. General administrative information**

**Grande Ronde Supplementation - O&M/M&E -  
Nez Perce Tribe Lostine**

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**Bonneville project number, if an ongoing project** 9800702

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

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**Business acronym (if appropriate)** NPT

**Proposal contact person or principal investigator:**

Name	Becky Ashe
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**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
ODFW	107 20th St.	LaGrande, OR 97850	Jim Phelps
CTUIR	P.O. Box 638	Pendleton, OR 97801	Gary James

**NPPC Program Measure Number(s) which this project addresses.**  
Primary -7.4L & 7.4L.1, Secondary -7.2D.1, 7.2D.3, 7.3B, 7.4B 7.4D, 7.4F.

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

ESA Section 10 Permit No. 973 (1995) and Permit No. 1,011(1996), and Modification of Permit No. 1,011 (1997)

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**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.

Snake River Salmon Recovery Plan, Wy Kan Ush Me Wa Kush Wit, Grande Ronde Subbasin Plan, Northeast Oregon Salmon and Steelhead Draft Master Plan, Grande Ronde River (Bryson 1990), Northeast Oregon Hatchery (NEOH) Final Siting Report (Montgomery Watson 1995a), NEOH Conceptual Design Report (Montgomery Watson 1995b), Wallowa County - Nez Perce Tribe Salmon Recovery Plan (Wallowa County and NPT 1993), Genetic Risk Assessment of the Grande Ronde Master Plan (Neeley et al. 1994), Preliminary Environmental Assessment Grande Ronde Basin Endemic Spring Chinook Salmon Supplementation Program (BPA 1998).

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**Subbasin.**

Grande Ronde River

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**Short description.**

Operate an adult weir/trap facility and a juvenile acclimation/ release facility on the Lostine River to facilitate the Grande Ronde Basin Endemic Spring Chinook Supplementation Program. Project goals are to prevent extinction and promote recovery of ESA listed spring chinook populations.

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**Section 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.**

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

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

Project #	Project title/description	Nature of relationship
9801001	Grande Ronde Basin Captive broodstock	Production of fish to be released in facilities operated by this project

9604400	Grande Ronde Basin Captive broodstock capital construction	Production of fish to be released in facilities operated by this project
5520700	Grande Ronde Basin Captive broodstock M&E	Provides M&E on project.
5520600	Cryopreservation	Collects gametes for use in production program.
9202604	Early Life History	M&E, baseline data collection, juvenile outmigration
9800701	Grande Ronde Supplementation - CUTIR	Operation of other adult weir and juvenile release facilities on Grande Ronde River.

## Section 4. Objectives, tasks and schedules

### *Objectives and tasks*

<b>Obj 1,2,3</b>	<b>Objective</b>	<b>Task a,b,c</b>	<b>Task</b>
1	Project Planning and Coordination	a	Coordinate production planning and use of progeny derived from Lostine River broodstock
		b	Coordinate supplementation research and evaluation activities
		c	Assist in permitting processes for production and M&E
		d	Coordinate with private entities and co-managers to establish required structures to obtain objectives
		e	Coordinate with other co-managers to facilitate objective
		f	Complete a cooperative Fisheries Management Plan with NPT and ODFW for Lostine River
		g	With BPA assistance, consult with NMFS regarding this project to recovery planning for Grande Ronde
		h	Participate with ODFW & CTUIR in co-management of fishery resources
		i	Coordinate and facilitate use of collected biological data with all

			co-managers
2	Project Operation and Maintenance	a	Provide Lostine River indigneous broodstock source for use in conventional supplementation
		b	Install, operate, and maintain a portable weir/trap on the Lostine River for collection of broodstock
		c	Coordinate transport of adults to preferred site for conventional supplementation activities
		d	Participate with BPA, co-managers, and consultants in construction of required facilities on the Lostine River
		e	Develop a more permanent adult collection and holding facility on the Lostine River
		f	Develop a portable acclimation and release facility on the Lostine River
		g	Contract with Nez Perce Tribe Cultural Resources Department to provide required monitoring
3	Project Monitoring and Evaluation	a	Collect environmental baseline information (discharge, temperature,
		b	Monitor and evaluate operation of adult collection and holding facility for impacts upon resident and anadromous fish populations
		c	monitor adult returns for implementing conventional broodstock collection
		d	Collect and analyze baseline information on physical (size and marks), genetic, and life history (age, run timing characteristics of the Lostine River adult chinook
		e	Conduct intensive multiple spawning ground/carcass surveys to obtain natural spawning data (number or redds, locations, and biological data)
		f	Determine total escapement above

			weir and calculate the fish per redd ratio above weir
		g	Implement a baseline genetic sampling program (DNA) that integrates fish released and retained
		h	Collect ecological interaction data from incidentally captured steelhead and bull trout.
		i	Implement M&E of BY-97 spring chinook smolt production (emigration survival and characteristics; 5000 PIT tags, marking)
		z	Use 5000 PIT tags to monitor and evaluate BY-97, acclimated, smolts for downstream migration data
4	Technology Transfer	a	Prepare and provide quarterly reports stating accomplished activities for project
		b	Compile, analyze and present a annual report stating all activities for project
		c	Present reports on project activities and findings at Annual BPA/CBFWA Project Review and as requested to other parties

**Objective schedules and costs**

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	01/1999	12/1999	10%
2	01/1999	12/1999	30%
3	02/1999	10/1999	50%
4	01/1999	12/1999	10%

**Schedule constraints.**

Completion of NEPA, NPPC 3-step review process, Section 10 permit from NMFS, success of the captive broodstock element.

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**Completion date.**

Supplementation under this project is planned for 5 full salmon generations or 25 years. A decision will be made on or before 2024 whether it is necessary for supplementation to continue under this project.

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## Section 5. Budget

### *FY99 budget by line item*

<b>Item</b>	<b>Note</b>	<b>FY99</b>
Personnel	Suppl. 51,358 + M&E 65,069 +A 33,533	149,960.00
Fringe benefits	Suppl. 10,168 + M&E 16,096 +A 7,451	33,715.00
Supplies, materials, non-expendable property	Suppl. 4,000 + M&E 4,550 +A 4,000	12,550.00
Operations & maintenance	Suppl. 8,654.00 + M&E 11,604 +A 6,654	26,912.00
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	Suppl. 7,232 + M&E 20,420 +A5,830	33,482.00
PIT tags	# of tags: 5,000	14,500.00
Travel	Suppl. 10,396 + M&E 9,704 +A 7,524	27,624.00
Indirect costs	Suppl. 27,083 + M&E 33,125 +A 19,173	79,381.00
Subcontracts	Suppl. 0 + M&E 4,000	4,000.00
Other		
<b>TOTAL</b>		382,124.00

### *Outyear costs*

<b>Outyear costs</b>	<b>FY2000</b>	<b>FY01</b>	<b>FY02</b>	<b>FY03</b>
Total budget	439,000	483,000	531,000	584,000
O&M as % of total	85%	90%	100%	100%

## Section 6. Abstract

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The NPT, in coordination with ODFW, is responsible for operating supplementation facilities (adult collection and holding and juvenile acclimation and release) on the Lostine River to facilitate the Grande Ronde Basin Spring Chinook Supplementation Program. This is a cooperative project between NPT, ODFW, CTUIR, and USFWS that utilizes supplementation with conventional and captive brood production to prevent extinction of and begin rebuilding of ESA listed spring chinook. This project was identified by tribal, state and federal managers as one of the 15 high priority projects warranting immediate implementation.

The Lostine River was historically one of the most productive spawning and rearing areas for spring chinook salmon in the Grande Ronde basin. Redd counts for spring chinook in the Lostine River have declined from 893 in 1958 to 16 in 1994 and 11 in 1995. These fish are currently listed under the Endangered Species Act. In 1994, fisheries co-

managers implemented a captive broodstock program utilizing indigenous stock. In 1997, sufficient adult spring chinook salmon were available for collection and initiation of conventional supplementation. Supplementation under this project is planned for 5 full salmon generations or 25 years.

A monitoring and evaluation plan for this project is currently being prepared by ODFW, NPT, and CTUIR and will be completed by March, 1998. The plan will include life history information, baseline population assessment prior to supplementation, ecological interactions, genetics, fish health, adult returns, spawning ground surveys, juvenile releases, juvenile outmigration and survival. The plan will be used as an adaptive management tool and to gauge the effectiveness of the program relative to its purposes.

## **Section 7. Project description**

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

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The Grande Ronde River, tributary to the Snake River, is located in Northeast Oregon. Historically, the Grande Ronde River supported large runs of spring chinook salmon, but population declines in the basin have been similar to declines in the Snake River (ODFW 1996). Specifically, the upper Grande Ronde River, Catherine Creek, and the Lostine River were three of the most productive spawning and rearing areas in the Grande Ronde River subbasin. Redd counts in 1957 were 478 in the upper Grande Ronde River, 374 in Catherine Creek and 893 in the Lostine River. Redd counts in these streams in 1994 were 3 in the upper Grande Ronde, 11 in Catherine Creek and 16 in the Lostine River. Redd counts for these areas in 1997 were 19, 46, and 49 redds, respectively. Co-managers have determined this constitutes an emergency situation.

The FWP (7.4C.1) “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. FWP (7.4F) also states, “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 “captive 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.”

In 1994, fisheries co-managers, ODFW, NPT, and CTUIR implemented the Grande Ronde Basin Endemic Spring Chinook Supplementation Program by collecting indigenous juveniles from the Lostine River, Catherine Creek and the upper Grande Ronde River for a captive broodstock program. This program is addressed in ESA Section 10 Permit 973 (1995) and 1,011 (1996). In 1997, sufficient adult spring chinook salmon were available for collection and initiation of conventional supplementation under

a modification of Permit 1,011 (1997).

A summary of the supplementation program utilizing captive broodstock and conventional production follows:

1) Captive Broodstock Approach:

- Capture spring chinook salmon parr from the upper Grande Ronde River, Catherine Creek and Lostine River for rearing to adult broodstock;
- Rear parr to smolt size at Lookingglass SFH;
- Transfer smolts to Bonneville SFH near Cascade Locks, OR and Manchester Hatchery near Bremerton, WA.
- Transfer mature adults from Manchester to Bonneville SFH for spawning;
- Transfer eggs from Bonneville SFH to Lookingglass and/or Irrigon SFH where they will be incubated and reared to smolt size;
- Transfer smolts to acclimation and release facilities in their parents' native drainages. Final rearing and release will occur from these facilities.

2) Conventional Broodstock Approach:

- Collect wild adults from the upper Grande Ronde River, Catherine Creek, and Lostine River;
- Transfer adults to Lookingglass SFH for holding/spawning;
- Incubate and rear progeny to smolt size at Lookingglass SFH;
- Transfer smolts to an acclimation and release facilities in their parents' native drainages. Final rearing and release will occur from these facilities.

The NPT, in coordination with ODFW, is responsible for operating supplementation facilities (adult collection and holding and juvenile acclimation and release) on the Lostine River, while the CTUIR is responsible for operating supplementation facilities on the upper Grande Ronde River. ODFW is responsible, in coordination with the Tribes, NMFS, and USFWS for production and activities occurring at Lookingglass SFH, Irrigon SFH, Bonneville SFH, and Manchester.

**b. Proposal objectives.**

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1) Implement and coordinate a spring chinook salmon supplementation program on the Lostine River by integrating conventional and captive broodstock production techniques to develop an indigenous broodstock.

1a) Maintain consistency with the NPPC's Fish and Wildlife Program and NMFS's Draft Recovery Plan for Snake River Salmon.

1b) Enhance natural production of spring chinook salmon in the Lostine River to increase the probability of survival for the remaining native populations through use of a locally-adapted broodstock.

1c) Maintain the genetic attributes and life history characteristics of the naturally-spawning spring chinook salmon population in the Lostine River.

1d) Use acclimation as a means to maximize smolt-to-adult returns and minimize adult straying.

1e) Promote the protection and maintenance of tribal treaty rights.

1f) Provide for efficiency and cost-effectiveness.

1g) Prepare and present reports including quarterly, annual, and on a as needed basis.

2) Monitor and evaluate facilities operated under the spring chinook supplementation program on the Lostine River.

2a) Establish baseline information on Lostine River spring chinook salmon population prior to supplementation and monitor and evaluate

2b) Develop new knowledge on the use of conventional supplementation as a means to assist the recovery of endangered species.

2c) Protect other species and environmental resources.

2d) Prepare and present reports including quarterly, annual, and as needed.

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

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The Grande Ronde Basin Endemic Spring Chinook Supplementation Program relates to the following FWP (NPPC 1994) objectives and measures. Section 2.1 is “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 “The 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.”

Section 4.1 addresses doubling salmon and steelhead runs without loss of biological diversity. It is illustrated in this section that “Both 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 “this weak stock priority includes populations listed under the Endangered Species Act, but is not limited to these populations.”

Furthermore, the FWP, Measure 7.2D.1, encourages incorporating effective husbandry practices and Section 7.2D.3 includes the investigation of hatchery rearing operations and release strategies to improve survival of propagated fish. In addition, this project furthers development of FWP Measures 7.4D (Captive Brood Stocks), 7.4F (Portable Facilities for Adult Salmon Collection and Holding, and for Juvenile Salmon Acclimation), and 7.4O (Small-Scale Production Projects). This project furthers development of FWP Measures 7.4D (Captive Brood Stocks), 7.4F (Portable Facilities for Adult Salmon Collection and Holding, and for Juvenile Salmon Acclimation), and 7.4O (Small-Scale Production Projects).

Additionally, this project relates to the Snake River Recovery Plan (NMFS 1995): 4.1.b, 4.4c. "...develop and implement management plans for Snake River spring/summer chinook salmon conservation hatchery programs which should include: ..., 2. Genetic Management Strategy,..." "The fisheries agencies and Tribes should design and carry out production-scale experiments at appropriate Columbia River Basin hatcheries to test individual release strategies and evaluate smolt quality indices believed to improve smolt quality. The fisheries agencies and the Tribes should develop methods of achieving high quality fish." "Using acclimation ponds and volitional release strategies."

Wy Kan Ush Me Wa Kush Wit: Volume I: 5B-14-22; Volume II: 2-118-127 states, "Implement supplementation projects that have met the screening criteria of RASP (1992) and Cuenco et al (1993)", which includes the proposed Imnaha and Grande Ronde River projects. "Establish 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."

This is a cooperative project between NPT, ODFW, CTUIR, and USFWS. Synergistic relationships exist between the following BPA funded projects: NPT NEOH Master Plan - BPA# 8805301-; ODFW NEOH Master Plan and Facilities - BPA # , NPT Captive Broodstock M&E -BPA# 5520700-; ODFW Captive Broodstock O&M,M&E, Fish Health Monitoring - BPA# 9801001-; ODFW Grande Ronde Basin Chinook Captive Brood - BPA# 9604400-, CUTIR Grande Ronde Supplementation for Catherine Creek and Upper Grande Ronde - BPA# 9800701.

**d. Project history**

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The NPT portion of this project was previously funded under NEOH Master Plan, project 8805301.

*Major Results Achieved*

Spring chinook juveniles have been captured for broodstock by ODFW from the upper Grande Ronde River, Catherine Creek and the Lostine River since 1995. These fish are

being reared to adult at Bonneville SFH and Manchester Hatchery. Sperm samples from maturing adult males have been collected under the Listed Stock Gamete Preservation project. Females from the program are expected to mature in 1998.

Planning and design of the adult trapping/holding and juvenile acclimation/release facilities were accomplished in 1997. In 1997, an adult weir/trap facility was constructed and installed on the Lostine River by the NPT and engineer consultants, Montgomery Watson. A total of 27 adult spring chinook salmon were captured at the facility. Six of these were held and used as broodstock. The resultant production will produce approximately 10,000 smolts for release from the acclimation and release facilities in 1999.

#### *Adaptive Management Implications*

Production for this project can be either conventional, captive broodstock or both depending on management decisions made by the co-managers.

#### *Past Costs*

Planning, design and construction costs for adult trapping/holding and juvenile acclimation/release on the Lostine River will be approximately \$750,000 when completed. In 1999, the adult trapping facility will be in its third year of operation. The juvenile acclimation facility is scheduled for construction in 1998 and 1999 will be the first year of operation.

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

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Objective 1 - Project Implementation

1) Captive Broodstock Approach:

- Capture spring chinook salmon parr from the upper Grande Ronde River, Catherine Creek and Lostine River for rearing to adult broodstock;
- Rear parr to smolt size at Lookingglass SFH;
- Transfer smolts to Bonneville SFH near Cascade Locks, OR and Manchester Hatchery near Bremerton, WA.
- Transfer mature adults from Manchester to Bonneville SFH for spawning;
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2) Conventional Broodstock Approach:

- Collect wild adults from the upper Grande Ronde River, Catherine Creek, and Lostine River;
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- Incubate and rear progeny to smolt size at Lookingglass SFH;
- Transfer smolts to an acclimation and release facilities in their parents' native drainages. Final rearing and release will occur from these facilities.

The NPT, in coordination with ODFW, is responsible for operating supplementation facilities (adult collection and holding and juvenile acclimation and release) on the Lostine River, while the CTUIR is responsible for operating supplementation facilities on the upper Grande Ronde River. ODFW is responsible, in coordination with the Tribes, NMFS, and USFWS for production and activities occurring at Lookingglass SFH, Irrigon SFH, Bonneville SFH, and Manchester.

This program is based on adaptive management with the goal to lessen impacts on the environment but produce a successful supplementation product. The portable design of the adult collection and juvenile acclimation facilities limit impacts on the land being used and to provide flexibility in future management of the project. In addition, the concept of using conventional hatchery structures and NATURE's rearing techniques to produce natural-like products for reintroduction into the natural environment is a relatively new one. Application of NATURE's methods at the acclimation facilities includes the use of patterned sidewalls to facilitate natural coloration of the fish, the use of camouflaged netting for cover of the fish, and subsurface introduction of feed with minimal human intervention. All other parameters are to remain within conventional rearing limits.

#### Objective 2 - Monitoring and Evaluation

A monitoring and evaluation plan for this project is currently being prepared by ODFW, NPT, and CTUIR and will be completed by March, 1998. The final plan will detail the following methods required to complete objective 3 tasks.

The characteristics/status of the population can be identified and quantified at several life history stages: emigration (summer, fall, spring) from natal streams, survival and timing of smolt movement past a given location (Lower Granite Dam), and adult escapement (lower Granite Dam and or spawning grounds (natal stream), smolt to adult survival (SAR). Final evaluation ideally dependent on the response of the adult escapements to treatments. The interim evaluation of emigrates, and smolts will be used to indicate initial population responses and test specific hypotheses.

Fall and spring emigrate (presmolt and smolts) numbers and timing will be estimated with emigrant rotary screw traps. Traps are operated to sample the summer, fall, and spring emigration periods until icing or water velocity is prohibitive. Capture efficiency is estimated by recapture of marked emigrants transported above traps. Capture efficiencies are monitored as a function of stream flow and water temperature.

Smolt characteristics (timing and survival) at Lower Granite Dam will be assessed using PIT tag detections. Depending on the release strategy 1500 to 6000 PIT juveniles will be PIT tagged prior to release into the study stream. Multiple release sites, strategies, or

locations will be monitored independently. Arrival timing and survival will be analyzed using PTAGIS databases and the SURPH model.

Adult escapement will be monitored directly by weir capture and indirectly by multiple redd count/carcass surveys above the weir. Biological characteristics (arrival date, size, sex, origin, marks) will be recorded and used to assure prescribe escapement above the weir will be obtained. Salmon spawning ground surveys are conducted three to four times to bracket spawning timing, increase redd count accuracy and maximize adult carcass collection. Carcasses are examined and biological information collected. Fish are examined for any marks/tags and measured (fork length and mid-eye to hypural). Scales are removed from carcasses and placed in coin enveloped for ageing. Fish are opened to determine sex and percent spawned.

A monitoring and evaluation plan for the adult weir/holding facility has been developed to provide safeguards against any potential migration impedance of chinook salmon, steelhead, and bull trout or other impacts on resident fish. The plan contains criteria for determining when facility impacts are significant to salmon, guidelines for corrective actions, and a plan implementation schedule. Snorkel and discrete bank observations will be used to determine if the weir is significantly delaying fish movement. Observations will be made daily both in downstream and upstream locations.

*Critical Assumptions:*

We assume that mainstem passage and flow will allow for a net replacement/increase in adult production. Our efforts will be negated without improvements in mainstem passage and acceptable water flows.

*Potential Risks:*

There are several risks associated with any supplementation project. These risks include, but are not limited to: decreases in genetic variability; increased incident of disease transmission; loss of animals because of stress, lack of water supply or other mishaps; and change in the age composition of the spawning cohort

*Expected Results:*

When fully implemented, the conventional and captive components are expected to return 250 adults per tributary (250,000 - 300,000 smolts). When anticipated increased survival rates are realized, the conventional component is expected to provide a majority of this production. The first contribution to production from the Program is expected to be observed in 2001. Anticipated results from this production are: an increase in the native spring chinook population, decreased demographic risk, comparable smolt-to-adult survival rates in hatchery and natural production fish, maintenance of life history characteristics and minimal interaction of supplementation fish with resident fish.

**f. Facilities and equipment.**

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The Grande Ronde Supplementation project on the Lostine River is primarily conducted out of the Nez Perce Tribe's office in Enterprise, OR. This office currently houses NPT Fisheries personnel from six other BPA funded projects. The office facilities are adequate for all administrative and personnel needs.

Field operations located on the Lostine River (10 miles from the Enterprise office) consist of an portable adult weir and trap, a portable juvenile acclimation and release facility, a travel trailer (to be purchased in 1998), and other support equipment. These facilities and equipment are adequate for field operations during the early stages of the project.

The portable, picket style weir/trap is located on the Lostine River about a mile upstream from the mouth. It spans approximately 200 feet, is constructed of aluminum and steel, and is installed at a 45 degree angle to stream flow. It was designed, engineered, and constructed by River Masters Engineers and Montgomery Watson to ensure optimal fish passage performance. The weir/trap requires 24-hour monitoring by NPT personnel. To facilitate this a travel trailer and three GSA fleet pick-ups are necessary. A trailer will be purchased in 1998.

The transport of the adults retained for broodstock is facilitated by ODFW equipment and personnel from Lookingglass State Fish Hatchery (LGSFH) which is 75 miles from the site. To accomplish this, fish are held in the trap for three to four hours while the transport vehicles are dispatched. The transport trucks are shared with ODFW and CTUIR programs and were not designed for water to water transport into LGSFH holding facilities which necessitates additional net handling of the adults. Purchase of adult/juvenile transportation vehicle and tanks will be necessary in the future.

Lookingglass SFH will be utilized for of adult holding and spawning, incubation and rearing to smolt. Lookingglass SFH has limited space for expansion, is plagued with disease problems, lacks a sufficient disease free water supply, and is currently overloaded, due to the care of eight different, segregated populations. Rapid River spring chinook adults were displaced in 1997 to accomodate the holding of Lostine River fish. Construction is under way at Lookingglass SFH on temporary adult holding ponds which should be completed in 1998. The lack of a disease free water source for incubation and rearing at all life stages is of grave concern to the NPT. New facilities are being planned to accomodate production of Lostine River chinook under the Northeast Oregon Hatchery Master Plan project (8805301).

Spring chinook smolts will be transported back to the Lostine River to the acclimation facility for final rearing and release. The acclimation facilities are scheduled for construction in 1998. When these facilities are in operation they will be staffed 24-hours a day by NPT personnel. To facilitate this a travel trailer and GSA fleet pick-ups will be available.

**g. References.**

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Ashe, B.L., R.L. Zollman, D.B. Jonhson, D. Bryson, and R.E. Larson. (In prep.). Grande Ronde River Master Plan for spring and fall chinook, coho and sockeye salmon. Bonneville Power Adminsitration, Portland, Oregon.

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Wallowa County and NPT. 1993. Wallowa County and Nez Perce Tribe Salmon Recovery Plan. Nez Perce Tribe, Lapwai, ID.

Wy-Kan-Ush-Me Wa-Kush-Wit, Spirit of the Salmon. 1995. The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakima Tribes. Columbia River Intertribal Fish Commission, Portland, OR.

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

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Permits necessary to perform activities outlined in this proposal (i.e., capture, rearing, and release of listed fish used in supplementation projects) will be obtained through consultation with National Marine Fisheries Service (NMFS).

Artificial Production projects identified in the FWP that integrate with this proposal are: 5520600 - Listed Stock Gamete Preservation (NPT), 8805301 - NEOH Master Plan (NPT), 8805302 - Upper Grande Ronde River Co-Management (CTUIR), and 8805305 - NEOH Master Plan and Facilities (ODFW).

Monitoring and Evaluation projects identified in the FWP that will complement this proposal are: 8712700 - Smolt Monitoring by Non-Federal Entities and 9202604 - Spring Chinook Salmon Early Life History (ODFW), 9405400 - Bull Trout Life History (ODFW) and 9600800- Plan for Analysis and Testing Hypothesis (PATH).

Habitat improvement projects identified in the FWP that provide for habitat improvements that will enhance survival of fish produced under this proposal are: 5507000 - Grande Ronde Subbasin Watershed Restoration (CTUIR), 9402700 - Grande Ronde Model Watershed Habitat Projects (GRMWP), 9202601 - Grande Ronde Model Watershed Admin/Impl/Research (GRMWP-USFS), 9702500 - Wallowa County/NPT Salmon Habitat Recovery (NPT), 9403900 - Wallowa Basin Project Planning (NPT),

8402500 - Grande Ronde Habitat Enhancement (ODFW), and 8810804 - Streamnet.

Other programs that are directly attached to this project include Lower Snake River Compensation Program which currently provides the facilities, equipment, and personnel to facilitate production, evaluations, and fish health monitoring.

## **Section 9. Key personnel**

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### **Roy Edward Larson, Director of Production (0.01 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.

Project: 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

Project: 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

Project: 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.

Project: 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. Project: 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.

**David B. Johnson, Production Coordinator (0.02 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.

Project: 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.

Project: Nez Perce Tribal Hatchery  
District Fish Biologist - North Fork Ranger District, Clearwater National Forest, Orofino,  
ID. May 90 - Oct 1993

Project: 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.

Project: Snake River Basin Adjudication, technology transfer.  
Area Fisheries Biologist - Bureau of Indian Affairs, Albuquerque Area Office,  
Albuquerque NM Mar 1987 - Dec 1988.

Project: Technical assistance in fisheries to 14 Indian Tribes  
Fisheries Biologist - Nez Perce Tribe, Lapwai, ID. May 1984 - Mar 1987.

Project: 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.

**NEOH Project Leader : Becky Ashe, (0.04 FTE)**

Nez Perce Tribe Department Fisheries Resource Management, Lapwai, ID office  
General management, operations, and communication.

**EDUCATION**

M.S. in Biology with Fisheries emphasis, Eastern Washington University, 1991  
B.S. in Biology, EWU, 1989

**PUBLICATIONS**

Primary Author:

Ashe, B.L., R.L. Zollman, D.B. Johnson, D. Bryson, and R.E. Larson. (In prep.) Imnaha  
River Master Plan for spring and fall chinook salmon. Bonneville Power  
Administration, Portland, OR.

Ashe, B.L., R.E. Larson, G.W. Walker, and D.B. Johnson. 1996. Nez Perce Tribe 1994  
Annual Production Report, Sweetwater Springs Hatchery, Spring Chinook

- Salmon. Nez Perce Tribe Department of Fisheries Resource Management, Lapwai, ID.
- Ashe, B.L., A.C. Miller, P.A. Kucera, M.L. Blenden. 1995. Spring outmigration of wild and hatchery chinook salmon and steelhead trout smolts from the Imnaha River, March 1 - June 15, 1994. Bonneville Power Administration, Portland, OR. 76 pp.
- Ashe, B.L. and A.T. Scholz. 1992. Assessment of fishery improvement opportunities on the Pend Oreille River: Recommendations for fisheries enhancement. Final Report. Bonneville Power Administration, Portland, OR, 295 pp.

Developed Nez Perce Tribe Fish Health Policy and Kalispel Tribe Fisheries Management Plan, primary author of four other publications, co-authored over 10 other publications regarding Integrated Hatchery Operations Team Policies and Procedures Manual, reintroduction of coho salmon in the Clearwater River, predation by northern squawfish, assessment of thermomechanical pulp mill, and baseline fisheries investigations.

#### TECHNICAL EXPERIENCE

Project Leader, Nez Perce Tribe, Lapwai, ID, Jan. 1997 - Present  
Project: Northeast Oregon Hatchery Master Plan

Project Leader, Nez Perce Tribe, Lapwai, ID, April 1997 - Present  
Project: Grande Ronde River Supplementation Project - Lostine River

Project Leader, Nez Perce Tribe, Lapwai, ID, May 1994 - Present  
Project: Integrated Hatchery Operations Team

Assistant Project Leader, Columbia River Inter-Tribal Fish Commission, Lewiston, ID, July 1991 - Feb. 1993  
Project: Managed CRITFC field office, manage and coordinate northern squawfish predation project on Snake and Columbia River mainstem dams.

Project Director/Research Associate, Upper Columbia United Tribes, Cheney, WA Sept. 1990 - Feb. 1992  
Projects: Directed a three year baseline fisheries assessment of the Pend Oreille River, directed an EPA Coordinated Tribal Water Quality Program, directed an environmental impact assessment of pulp mill effluent discharged adjacent to Kalispel Indian Reservation, developed fisheries management plan for Kalispel Indian Reservation, tribal natural resource representative at CBFWA, EPA, NPPC, BPA, WDFW, and other state and local forums. Master thesis - Movement and migration of largemouth bass in the Pend Orielle River by sonic and radio telemetry.

Duties: project implementation, management and coordination, budget preparation and management, contract and subcontract preparation and management, report writing, personnel supervision, tribal representation in meetings with ODFW, IDFG, WDFW,

NMFS, BPA, NPPC, CBFWA, IHOT, and private consultants, data analysis, computer modeling, public speaking and presentations, and proposal development

**Skills:** spawning adult salmonids, fish culture activities, field data collection and laboratory analysis of marine and fresh water benthic macroinvertebrates, terrestrial insects, zooplankton, fish handling and identification, boat operation and maintenance, boat and backpack electrofishing, seining, gill netting, trawl netting, screw trapping, adult weirs and traps, hook and line, transect stream survey methodology, snorkel, redd surveys, life history research, age scales, diet analysis, water chemistry analysis, mapping and GPS, reach descriptions, and sonic and radiotelemetry.

**Monitoring and Evaluation Project Leader : TBA, 2,080 hours. (1.0 FTE )**

Management of all monitoring and evaluation, in field and in office, for the Lostine River as it applies to this project. Responsibilities include preparation of findings in report format.

**NEOH Assistant Project Leader : Rick Zollman, (0.25 FTE)**

Nez Perce Tribe Department of Fisheries Resource Management, Enterprise, OR office  
Field management, coordination, operation assistance, and placing data in report format.

**EDUCATION**

A.S. Fisheries Science from Mt. Hood Community College

**EXPERIENCE AND EXPERTISE**

USFWS, Region 1 - 16 years total, 14 years permanent.

Experience attained and expertise established in the management and operation of major anadromous hatchery programs, associated structures, and basin co-management. The main station of operations revolved around Eagle Creek NFH, but also included a tour of duty at Dworshack NFH and application of my abilities to other facilities needs.

While at ECNFH I managed all facets of a major production program that exceeded 2.5 million smolts and other life-stage products as required. The species that I have successfully managed programs for include spring chinook salmon, coho salmon, and winter steelhead. My tour of duty at ECNFH included the positions of acting assistant manager, 4 years, and acting manager, 11/2 years.

Duties included the management and training of hatchery staff : four FTE fish culturists, maintenance personnel, and temporary helpers that ranged from 2 to 12 depending on work loads. I am considered to have expertise in all life-stage care of fish and application of most general equipment, activities, and facilities required to perform a major hatchery program. Management duties included involvement in co-managed activities and plans. Communications involved federal, state, tribal, and private entities.

Training : Training was implemented by USFWS and included disease short courses, work force management and cross training at other federal hatcheries. The most recently

completed training was Fish Genetics in February 1997.

Awards: Notable awards presented to me by USFWS includes Special Achievement Award, several Quality Performance Awards, and I was named the Fish Culturist of the Year in 1987.

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

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