

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

**Section 1. General administrative information**

**Klickitat Passage/Habitat Improvement M&E**

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**Bonneville project number, if an ongoing project**    9506800

**Business name of agency, institution or organization requesting funding**  
Yakama Indian Nation - Fisheries

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**Business acronym (if appropriate)**    YIN

**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>
Summit Technology	615 Second St.	Seattle, Wa. 98104	John Hutchins
International Statistical Training and Technical Services	712 12th St.	Oregon City, Or. 97045	Doug Neeley
Mobrand Biometrics	9917 SW 178th St. Po Box 724	Vashon, Wa. 98070	Lars Mobrand

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

7.1.A.1, 7.1.C-, 7.6A, 7.6.A.2-, 7.7-

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

Biological Opinion for 1995 to 1998 Hatchery Operations in the Columbia River Basin  
(NMFS 1995a)

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**Other planning document references.**

**Subbasin.**

Klickitat

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**Short description.**

Integrated watershed analysis to produce information that identifies passage, habitat improvements opportunities and supplementation strategies within basin. Test new supplementation techniques to increase natural production, harvest and genetic fitness.

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**Section 2. Key words**

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish		Construction	X	Watershed
*	Resident fish		O & M		Biodiversity/genetics
*	Wildlife	*	Production		Population dynamics
	Oceans/estuaries	X	Research		Ecosystems
	Climate	*	Monitoring/eval.	*	Flow/survival
	Other	*	Resource mgmt		Fish disease
			Planning/admin.	*	Supplementation
			Enforcement		Wildlife habitat enhancement/restoration
			Acquisitions		

**Other keywords.**

Baseline information, habitat evaluation, supplementation, passage, and modeling.

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

Project #	Project title/description	Nature of relationship
8812001	Yakima/Klickitat Fisheries Management	Core Management/Admin. Support services for all YIN's YKFP Tasks
8811500	Fisheries Technician Field Activities	Manpower support during peak field periods
5512800	Lower Klickitat River Riparian and In-Channel Habitat	Conduct riparian restoration in Swale Creek (tributary to Klickitat River). Develop public relations with local community
9506300	Yakima/Klickitat M&E Program	Covers the diverse M&E needs for the target species which are essential for the success of the YKFP

5512700	Klickitat Basin Culvert Rehabilitation	Passage within tributaries is essential for natural restoration of species
5512600	Upper Klickitat Meadows Riparian Restoration	Contributes to improving prime habitat which is vital for success of supplementation implementation
9506800	Klickitat/Habitat Preliminary Design Project O&M	Redesign and construction modifications to mainstem passage facilities on the Klickitat River.
9506402	Project #9506402, Upper Yakima species interaction studies.	Incorporate ideas, procedures, and successes into future Klickitat River supplementation activities.
9506404	Policy and technical involvement and planning, YKFP.	The Policy Group must approve directs habitat/passage improvements and future supplementation activities to be developed under this project before they can be implemented.

## Section 4. Objectives, tasks and schedules

### *Objectives and tasks*

Obj 1,2,3	Objective	Task a,b,c	Task
1	Determine Habitat conditions of mainstem and tributaries, using Timber Fish and Wildlife (TFW) Ambient Monitoring Protocol	a	Conduct stream reach identification survey
		b	Conduct Reference point survey
		c	Conduct Habitat unit survey
		d	Conduct Large Woody Debris Survey
		e	Record water quality measurements at each tributary surveyed
		f	Record daily water temperatures at selected sites in the Klickitat basin
		g	Assess habitat conditions on mainstem Klickitat using aerial video
		h	Determine specific habitat, fish and physical parameters to be

			measured using EDT modeling
2	Conduct juvenile and adult salmonid surveys to describe species distribution and abundance	a	Conduct juvenile fish surveys in tributaries
		b	record spatial and temporal distribution of adult life stage of all salmonid stocks in the Klickitat
3	Determine the feasibility of using the selected juvenile monitoring sites as long term monitoring stations	a	Describe positive and negative attributes of three rotary screw trap locations in the basin.
4	Determine the temporal distribution and abundance of juvenile salmonid outmigrants in the mainstem Klickitat River.	a	Collect life history data for each salmonid species and non-target species at the three monitoring sites
5	Develop a suite of options/recommendations for improvements to adult passage at Lyle and Castile Falls.	a	Through continuation of subcontract with Summit Technology focus on implementation of Phase II passage improvements for the fishway at Lyle and Castile Falls.
6	Catalog tributary passage blockages including road culverts	a	Gather existing data
		b	Conduct field surveys
		c	Summarize information from above tasks

***Objective schedules and costs***

<b>Objective #</b>	<b>Start Date mm/yyyy</b>	<b>End Date mm/yyyy</b>	<b>Cost %</b>
1	5/1996	10/2000	25.00%
2	8/1995	12/2004	20.00%
3	10/1995	12/1999	15.00%
4	6/1996	12/2004	15.00%
5	7/1996	12/1999	10.00%
6	5/1996	12/2000	15.00%
			<b>TOTAL 100.00%</b>

**Schedule constraints.**

Continuation of field sampling to more accurately indicate overall survival of each individual stocks throughout life history. Continuation of critical engineering work to better use Mitchell Act available funds to defray BPA costs. BPA budgeting

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**Completion date.**

Expansion of all YKFP activities into the Klickitat Basin 2048

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**Section 5. Budget**

***FY99 budget by line item***

<b>Item</b>	<b>Note</b>	<b>FY99</b>
Personnel	Assume additional manpower support from YIN Tech pool BPA # 8811500	\$292,700
Fringe benefits	20 %	\$58,540
Supplies, materials, non-expendable property	estimated	\$15,000
Operations & maintenance	estimated	\$5,000
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	estimated	\$15,000
PIT tags	# of tags: 0	\$0
Travel	estimated	\$5,000
Indirect costs	26.6 %	\$102,739
Subcontracts	assume engineering contract picked up through Mitchell Act funds	\$30,000
Other	GSA vehicle rental, lease, insurance	\$50,000
<b>TOTAL</b>		<b>\$573,979</b>

***Outyear costs***

<b>Outyear costs</b>	<b>FY2000</b>	<b>FY01</b>	<b>FY02</b>	<b>FY03</b>
Total budget	\$925,000	\$925,000	\$925,000	\$925,000
O&M as % of total	20.00%	20.00%	20.00%	20.00%

**Section 6. Abstract**

A.

Integrated watershed analysis of Klickitat Basin using fisheries, population, habitat, and engineering surveys to develop a preliminary design of passage and habitat improvements which directly benefit salmonids and provide information used for patient/template style analysis and future supplementation activities.

B.

The YKFP's core objectives are as follows:

- 1) To test the hypothesis that new supplementation techniques can be used in the Yakima and Klickitat River Basins to increase natural production and to improve harvest opportunities, while maintaining the long-term genetic fitness of the wild and native salmonid populations and keeping adverse ecological interactions within acceptable limits;
- 2) To provide knowledge about the use of supplementation, so that it may be used to mitigate effects on anadromous fisheries throughout the Columbia River Basin;
- 3) To implement and be consistent with the Council's Fish and Wildlife Program; and
- 4) To implement the Project in a prudent and environmentally sound manner.
- 5) Provide knowledge of habitat/passage improvement projects and supplementation, so that it may be used to enhance anadromous fisheries throughout the Columbia River Basin.

C.

The Yakima/Klickitat Fisheries Project has been included in the Council's Fish and Wildlife Program. The Council's 1987 Fish and Wildlife Program presented measures specifically for the Klickitat River. This Project initiates the preliminary design work needed to complete a Preliminary Design Report for the Klickitat Subbasin.

D.

Supplementation is defined as utilizing artificial propagation in an attempt to maintain or increase natural production while maintaining long-term fitness of the target population and while keeping ecological and genetic impacts on nontarget species within specified limits (RASP 1991).

YKFP operations have been designed to test the principles of supplementation. Its experimental design has focused on the following critical uncertainties affecting hatchery production: 1) the survival of hatchery fish after release from the hatchery; 2) the impacts of hatchery fish as they compete with wild populations; and, 3) the effects of hatchery propagation on the long-term genetic fitness of fish stocks.

One of the YKFP's primary objectives is to provide regional resource managers with knowledge regarding these issues, and identify and apply improved methods for carrying out hatchery production and supplementation of natural production. The YKFP's monitoring activities are intended evaluate the relative survival and success of various release groups of supplementation fish and to compare their success with that of naturally produced fish.

Characterize physical attributes of each stream and tributary surveyed.  
Determine summer distribution and abundance of juvenile fish by species within basin.  
Conduct salmon spawner ground surveys. Evaluate effectiveness of current monitoring

sites in terms of logistics and to meet YKFP monitoring needs. Collect life history data from wild and hatchery salmonid outmigrants. Collect historical information beneficial to model template for future patient-template analysis. Develop specifics from Phase I engineering investigations into primary passage problems at Lyle and Castile Falls.

E.

Increase number of returning adults and naturally reproducing adults to the target population. Increase information on the feasibility of using supplementation to rebuild natural populations. Baseline life history information on spring and summer/fall chinook, coho, and summer and winter steelhead. Expanding use of anadromous stocks to newly accessible areas opened through passage and habitat improvement projects. Increased natural production and resultant carcasses will add nutrients to the entire subbasin.

F.

Project scientists and managers realize that effective monitoring is the key to a successful adaptive management program. The YKFP's PSR and the Monitoring and Evaluation Plan lay out an integrated multi-level monitoring program for supplementation activities. Use standard fisheries inventories for monitoring short and long-range goals of project. Fisheries and habitat survey data used to resolve critical uncertainties that developed. Monitor increase in natural production of salmonids stocks associated with particular habitat/passage improvements or supplementation activities. Conduct standardized fisheries surveys to determine if habitat and passage improvement projects result in increased natural production. Monitoring of riparian habitat projects conducting using photo documentation. Use YKFP patient-template analysis to direct habitat and passage improvements as well as any future supplementation activities

## **Section 7. Project description**

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

The Yakima Klickitat Fisheries Project is part of a comprehensive effort by the Northwest Power Planning Council, Yakama Indian Nation, Washington Department of Fish and Wildlife, U.S. Bureau of Reclamation, U.S. Forest Service, and the Bonneville Power Administration to protect, mitigate and enhance the anadromous fish populations in the Yakima and Klickitat River basins. These governments and agencies have developed and implemented a long-term strategy to restore the habitat and ecosystem necessary to support the anadromous fish resources in the Yakima River basin and to increase fish production through supplementation.

The Yakima/Klickitat Fisheries Project is included in the NPPC Fish and Wildlife Program. The Outlet Creek site on the Klickitat River was originally identified as the a

potential supplementation facility (USFW 1979). In addition to a potential supplementation facility the Klickitat River was also identified as an area for passage and habitat improvements. In Appendix Table A of the NPPC 1987, the Klickitat River was identified as an area for providing increased passage and habitat for chinook, coho and steelhead.

Planned by the Council since 1982 and included its Columbia River Basin Fish and Wildlife Program (“Program”) as Measure 7.4K.1, the YKFP’s operation is calculated to compensate for losses from development and operation of hydroelectric projects elsewhere in the Columbia Basin. Project development has been subject to the NMFS Biological Opinion for 1995 to 1998 Hatchery Operations in the Columbia River Basin (NMFS 1995)

It is the Council’s intention that the YKFP will help determine the role that supplementation might play in increasing natural production of anadromous salmonids throughout the Columbia Basin. The YKFP is designed to test the hypothesis that success of supplementation can be improved by rearing fish under more natural conditions in the hatchery (substrate, cover, structure, natural feeding, predators, etc) and by following genetic guidelines to minimize differences between the supplementation fish and the naturally reared fish. Preliminary research projects on the naturalized rearing have been conducted by NMFS and WDF&W scientists to determine the appropriate treatment variables to be tested in the large-scale production experiments that the YKFP is conducting.

**b. Proposal objectives.**

The Project managers have agreed on a set of objectives and strategies for supplementing each of the Klickitat River Basin stocks. Since the Project’s inception, these objectives and strategies have been reviewed (i.e. critical peer review) and revised. The objectives and strategies are precise and increasingly specific statements about the YKFP in four categories: genetics, natural production, experimentation, and harvest, while taking steps to contain unacceptable genetic and ecological risks.

Quantitative production objectives (for most of the seven stocks originally identified to be supplemented as part of the YKFP) were formulated in 1990 in the Refined Goals section of the Preliminary Design Report (BPA, 1990b). The Refined Goals objectives were based on computer simulations generated by the Council’s System Planning Model.

Project objectives are continually re-assessed in the light of the latest demographic data, suspected ecological relationships, and modeling tools. Quantitative production objectives for Klickitat basin stocks will be refined, based on computer simulations using the Ecosystem Diagnostic and Treatment Planning Model (EDTPM) (Lestelle et al., 1994) developed under the Regional Assessment of Supplementation Project (RASP, 1992). BPA and the project managers have used the EDTPM for YKFP planning rather

than the System Planning Model, because it tracks juvenile production capacity more closely and allows for variable (density-dependent) predation on outmigrating smolts.

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

The Yakima Klickitat Fisheries Project is part of a comprehensive effort by the Northwest Power Planning Council, Yakama Indian Nation, Washington Department of Fish and Wildlife, U.S. Bureau of Reclamation, U.S. Forest Service, and the Bonneville Power Administration to protect, mitigate and enhance the anadromous fish populations in the Yakima and Klickitat River basins. These governments and agencies have developed and implemented a long-term strategy to restore the habitat and ecosystem necessary to support the anadromous fish resources in the Yakima River basin and to increase fish production through supplementation.

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**d. Project history**

The Yakima Klickitat Fisheries Project (“YKFP or Project”) was first approved by the Northwest Power Planning Council (“NPPC or Council”) in 1982. At that time, the Council envisioned the Project as a cluster of production facilities in both the Yakima and Klickitat River Basins designed to enhance the fishery for the Yakama Indian Nation (“YIN”) and other harvesters. The development of the Project’s master plan began in 1985. By that time, however, the Council had modified the purpose of the Project to include research activities testing the assumption that new supplementation methods could increase natural production while protecting the genetic resources common to the river basins. The Council also determined that the principles of adaptive management, which encourages an affirmative pro-active response to research discoveries, were to be utilized by the resource managers selected to manage the YKFP. These managers are the YIN and the Washington Department of Fish and Wildlife (“WDFW”).

As recommended and directed by the Council, the Project's master plan, which included a supplementation research program, was conceived and developed. On October 15, 1987, the Council approved the YKFP's master plan.

Also envisioned for the Project's future is the introduction of supplementation to the Klickitat Basin, which could include the use of the Klickitat Hatchery, a Mitchell Act facility now operated by WDFW.

Research activities focused upon the Klickitat River fisheries also fell outside its scope. However, they remain essential components of the Project. At this time, fall chinook, steelhead and the Klickitat basin are the subjects of on-going research activities designed to determine whether the YKFP will support the introduction of additional anadromous fish stocks into its production and research programs.

Earlier YKFP project numbers included under the Council's Fish and Wildlife plan are as follows:

- 85-062 - PASSANGE IMPROVEMENT EVALUATION - BPNL  
NMFS
- 88-120-04 - HATCHERY TRAINING AND EDUCATION - YIN
- 88-120-06 - YAKIMA FISHERIES TECHNICIANS - YIN
- 88-120-08 - FISHERIES TECHNICIAN FIELD ACTIVITIES - YIN
- 89-089 - YAKIMA/KLICKITAT RADIO TELEMTRY STUDY - NMFS
- 95-062 - YAKIMA/KLICKITAT FISH. PROJECT ADAPT. MGMT. -
- 95-063 - YAKIMA/KLICKITAT MONT. AND EVAL. PROGRAM -
- 95-064-01 - REFINEMENT OF MARKING METHODS FOR YKFP - WDFW
- 95-064-03 - GENETIC MGMT. FRAMEWORK FOR YAKIMA SP. CHINOOK - WDFW
- 95-068 - KLICKITAT PASSAGE/HABITAT PRELIMINARY DESIGN - YIN

Because the YKFP is attempting to mitigate for effects on declining natural resources in a complicated, large-scale ecosystem without a full understanding of its complexities, the Project managers believe the principles of adaptive management to be particularly appropriate tools. By incorporating them into the Project's scientific method, the managers expect to achieve Project goals while protecting the basin's fishery resources from unforeseen, adverse Project impacts.

In applying adaptive management, actions by YKFP managers will respond to a set of agreed-upon objectives. These actions are designed as experiments to test hypotheses regarding their outcome: to see whether the predicted result occurs or whether some other result occurs. Carefully designed to obtain valid (i.e., statistically reliable) results, the experiments are conducted, monitored and evaluated to allow statistical evaluation of the results. New experimental insights are used to modify or discard ineffective strategies, to improve underlying theory and, when necessary, to revise objectives to conform with perceived possibilities. Informed Project scientists and managers may modify programs, procedures, and facilities in response to these findings, even if it means drastic changes to a program. Thus risks to the ecosystem are realized and addressed in the Project's annual planning cycle (described in detail below).

The Klickitat Passage/Habitat Improvement project while under the YKFP from YKFP project inception began in earnest in August 1995. To date the project has completed the following items:

- Stream inventories (TFW Ambient Monitoring) on 19 tributaries
- Juvenile population monitoring in tributaries were stream inventories were conducted
- Mainstem juvenile population monitoring by use of 3 rotary screw traps
- Collection of life history data on all anadromous stocks in the basin.
- Adult spawner surveys for spring and fall chinook, coho and steelhead.
- Water quality and temperature monitoring on selected tributaries and several mainstem locations.

**e. Methods.**

YIN biologists and field crews will conduct standardized fisheries and habitat inventories to direct future habitat/passage improvements and supplementation activities that have the greatest chance for success. Specific techniques include; Electrofishing, snorkeling, spawner surveys, rotary screw trap operation, Timber, Fish and Wildlife (TFW) Ambient Monitoring Stream habitat inventory, and EPA Rapid Bioassessment.

Project scientists and managers realize that effective monitoring is the key to a successful adaptive management program. It enables them project managers to determine whether an action achieved its objective, or whether the objective was properly developed. Monitoring should also provide insight into the actual result of an action as well as explain the success (or lack) in achieving the predicted result.

The YKFP's PSR lays out an integrated multi-level monitoring program for Klickitat spring chinook and steelhead based Yakima Basin results. This structure ensures that strategies are implemented as intended, that experimental studies produce reliable results, and that risks associated with unresolved uncertainties are contained. It also ensures efficiency, prevents duplication of effort, and tracks progress toward meeting objectives.

Since monitoring activities for these categories overlap, they will be developed into an integrated monitoring plan. The monitoring plan would be revised and expanded as part of the adaptive management process. The Project's upper Yakima spring chinook monitoring plan, which will be used as a template for Klickitat supplementation and production activities, addresses the following five monitoring categories:

1. Quality control will monitor the performance of the facilities and their operators. Standards would be developed for all fish culture and data collection activities as part of the certification process required for the facilities. Monitoring procedures would be included in the operations manuals for all facilities and field activities.

2. Product specification attributes will be monitored at Klickitat supplementation facilities, the acclimation ponds, and the juvenile monitoring facilities to determine whether the fish produced by the project meet goals with respect to: fish health; morphology (size and shape); behavior; and survival.
  
3. Research monitoring activities will be designed to test the performance of two treatments of artificially reared fish (OCT vs. SNT) and to compare their performance with naturally reared fish. These monitoring activities would be performed at the juvenile facilities for outmigrating smolts, at Lyle Falls ladder and collection facilities for returning adults, and on the spawning grounds for straying rates and reproductive success monitoring. Research monitoring would include measurements of performance in four main areas:
  - o post-release survival (survival from time of release until the fish return to spawn);
  - o reproductive success (number of offspring produced per spawner);
  - o long-term fitness (genetic diversity and long-term stock productivity); and
  - o ecological interactions (population abundance and distribution, growth rates, carrying capacity, survival rates, transfer of disease, and gene flow).
  
4. Risk containment consists of a monitoring plan developed to evaluate four categories of interest identified in the risk analysis to monitor risk containment: 1) experimental; 2) genetic; 3) harvest; and, 4) natural production/ecological interactions. These four areas relate back to the objectives and strategies. The risk analysis defines risk in terms of the probability of failure to meet the objectives of the project for these four categories.
  
5. Monitoring of stock status includes measurements of run size and escapement to determine whether harvest objectives can be met without affecting natural production. It would provide information essential to track the long-term performance and fitness of the fish populations.

Details of the monitoring program can be found in “Yakima Fisheries Project Spring Chinook Supplementation Monitoring Plan”, Busack et al, 1997. Also see YIN project 9506300, YKFP Monitoring and Evaluation Proposal.

Implementation of the monitoring plan, annual review of the findings, and subsequent adjustment, as necessary, of the supplementation program objectives, strategies, assumptions, uncertainties, and risk analysis would complete the feedback loop that is essential to the success of the adaptive management process, and ultimately, the entire project.

**f. Facilities and equipment.**

- 1 8 ft. rotary screw trap (1) – monitor juvenile outmigration
- 2 5 ft. diameter screw trap (2) – monitor juvenile outmigration
- 3 18ft. field travel trailers (2) – house crews in field

- 4 computers (3) - store and analyze data
- 5 H2O Hydrolab (1) – collect water quality data
- 6 Backpack electrofishers (2) – stream population surveys
- 7 Snorkeling dry suits and associated gear (4) – stream population surveys
- 8 GSA vehicles (4)
- 9 Microscope(1) – Coded wire tag reading, macroinvertebrate analysis
- 10 Electronic scales (2) – weights for condition factor determination
- 11 Boots, waders and associated field supplies - essential technician gear
- 12 Whitewater rafts (4) – conduct spawner surveys
- 13 Juvenile and adult sampling gear – collection of life history data.

**g. References.**

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Development of a system-wide predator control program: stepwise implementation of a predation index, predator control fisheries, and evaluation plan in the Columbia River Basin. Annual report for 1991. Project No. 90-077. Bonneville Power Administration, Portland, OR. 599 pp.
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## **Section 8. Relationships to other projects**

Projects relates directly to current WDFW Klickitat Hatchery operation. Through assistance with setting production goals based on up-to-date field observations.

Project relates to Columbia River predation project. Information was shared to predation crews on smolt outmigratuion timing resulting in concentration of efforts.

Stock assessment and escapement numbers to subbasin are used in tribal, state and ocean harvest quotas.

Engineering efforts completed to date will make better use of Mitchell Act (MA) funds available to fix mainstem passage problems at the two MA facilities on the Klickaita (Lyle Falls and Castile Falls). In additional, MA funds are being used to develop much needed acclimation sites for hatchery coho (US v. Oregon) programmed for the subbasin. Information gained on this project is guiding the use of these funds to increase survival, for increased harvest and natural production opportunities.

Coordination activities to date include; Genetic Stock Identification (GSI) of Klickitat spring, summer/fall chinook, and steelhead with WDFW. Coordination with WDFW Hatchery personnel on fish releases and marking methods. Coordination with WDFW habitat engineers for evaluation and maintenance of passage facilities on the mainstem Klickitat River. Coordination and contract development with Summit Technology Consulting Engineers to begin detailed evaluation of the passage facilities. Coordination and contract development with International Statistical Training and Technical Services to conduct flow to entertainment relationship for population monitoring.

Cooperation between the Washington Dept. of Fish and Wildlife (WDFW) and the Yakama Indian Nation Fisheries Program (YINFP) as co-managers in the YKFP is ongoing. Additional opportunities for cooperation between YINFP and the WDFW Habitat Division are underway. YIN and WDFW will identify areas for habitat improvement projects, as well as, information sharing and coordinated data collection in the future. The Americorps Volunteer Program has used on related projects in the Klickitat basin and will be used to assist with future habitat improvement projects. Information coordination with WDFW on the spatial distribution of Klickitat River Bull Trout Salvelinus confluentus will continue.

The only permit required is a WDFW Hydraulics Application for placement of two rotary screw traps in the lower river off the Yakama Reservation.

## **Section 9. Key personnel**

### **Project Manager**

MELVIN R. SAMPSON

#### **EXPERIENCE:**

2/93-PRESENT      POLICY ADVISOR/PROJECT COORDINATOR  
Yakima/Klickitat Fisheries Project  
Yakama Indian Nation  
Toppenish, WA 98948

1989-1992      PRESIDENT  
-Melco Petroleum Inc., Wapato, WA 98951  
    \*Wholesale fuel distribution  
VICE-PRESIDENT  
-Yakima Petroleum Inc., Wapato, WA 98951  
    \*Wholesale fuel distribution  
-Eagle Stop and Save, Inc.

\*Fuel-convenience stores  
-Yakima Solutions Inc., Wapato, WA 98951  
-Native Solutions Inc., Wapato, WA 98951  
\*Consulting and Business Management

1985-1989 CHAIRMAN, YAKAMA TRIBAL COUNCIL

1971-1989 YAKAMA TRIBAL COUNCIL (ELECTED)  
Committees served:  
-Timber, Grazing, Overall Economic Development  
-Loan, Extension, Education, and Housing  
-Legislative  
-Health, Employment, Welfare, Recreation, and Youth Activities  
-Budget and Finance  
-Executive Board  
-Enrollment  
-Special Tax Committee  
-Radio Active/Hazardous Waste  
-Public Relations/Media  
-While serving on the Tribal Council for 18 years, I served as  
Chairman at one point of the listed committees

1971 TRIBAL PLANNER

1969-1970 ASSISTANT MANAGER  
PERSONNEL MANAGER  
-White Swan Industries  
-Wholesale Furniture Manufacturing

1968-1969 RESIDENT COUNSELOR  
-Fort Simco Job Corps  
-Worked nights, commuted to CWSU during day

1967-1968 MANAGER TRAINEE  
-White Swan Industries  
-Wholesale Furniture Manufacturing

1965-1967 Industrial injury, not employed

1961-1965 STUDENT  
-Lower Columbia College, Longview, WA  
-While attending college, worked full time at night in a lumber  
planner mill in various jobs, including lumber grader.

1959-1961 -U.S. Army, Active Service

1956-1959            VARIOUS JOBS  
                          -Fisherman  
                          -Boeing Aircraft Company  
                          -Construction  
                          -Farm Labor

EDUCATION:

American Indian Management Institute, Albuquerque, NM  
                          -Completed six-week comprehensive studies on Tribal Executive Development  
Central Washington State College, Ellensburg, WA  
                          -Major: Sociology   Minor: Psychology, Business  
Lower Columbia College, Longview, WA  
                          -Business Major  
Lower Columbia College, Longview, WA  
                          -Associate Degree in Electronics, 1963  
White Swan High School, White Swan, WA.  
                          -Graduate, 1956

ORGANIZATION AFFILIATES:

- Lifetime member, National Congress of American Indians
- Member, Fraternal Order of Eagles No. 2225, Toppenish, WA
- Founder, member, past Chairman, Northwest Portland Area Indian Health Board, Portland, OR. (18 years)
- Member, past Chairman, National Indian Health Board, Denver, CO (16 years)
- Served as a member, Indian Food & Nutrition Board, Denver, CO (3 years)
- Served, Yakima Valley College Board of Trustee, Yakima, WA (2 years)
- Served as member, founder, Heritage College Board of Trustees, Toppenish, WA
- Served on Advisory Board, Master of Public Health, University of California at Berkeley, CA. (2 years)
- Served on, Inter-Mountain School Board, Provo, UT (2 years)
- Member, President, Yakama Indian Rodeo Assoc., (25 years, volunteer )
- Member, founder, past President, Western States Indian Rodeo Assoc. (20 years)
- Member, founder, current President, Indian National Finals Rodeo, Inc.,(22 years)
- Served as member, Special Yakima Rodeo Board, to produce, promote the National High School Rodeo Finals in Yakima, WA. in 1980.
- Served on "The Advisory Panel on Alternative Means of Financing and Managing Radioactive Waste Facilities", Administrative Appointee, Depart. of Energy, 1984.

## RECOGNITIONS:

- Yakama Indian Nation, Supervisor of the Year, 1995.
- Board Member of the year, Northwest Portland Area Indian Health Board, 4 times.
- Board Member of the year, National Indian Health Board, 2 times.
- Special Recognition of Appreciation as a Founder of Western States Indian Rodeo Association on their Tenth Anniversary.
- Special Recognition as a Founder of the Indian National Finals Rodeo from the American Revolution Bicentennial, 1776-1976.
- National Indian Rodeo Man of the Year, 1978, Hoof and Horns Magazine.
- National Indian Man of the Year, American Indian Heritage Foundation, Washington, D.C., 1988.

## MILITARY EXPERIENCE:

1959-1965 VETERAN, United States Army, Honorable Discharge, SGT E-5.

## PERSONAL DATA:

Date of Birth: April 20, 1938  
Tribe: Yakama, Enrollment # 4059  
Marital Status: Married, 5 daughters, 1 son

## REFERENCES:

-Submitted upon request

## **Project Leader**

### **DAVID E. FAST**

YKFP Research Biologist  
Fisheries Resource Management  
P.O. Box 151  
Toppenish, Washington 98948  
Work: 509-966-5291

### ***Education***

University of Washington, Seattle, Washington  
Doctor of Philosophy in Fisheries Science, 1987.

University of Puerto Rico, Mayaguez, Puerto Rico  
Master of Science in Marine Sciences, 1974.

St. John's University, Collegeville, Minnesota  
Bachelor of Science in Zoology, 1969.

## **Research Experience**

**1988-Present: Research Manager. Fisheries Resource Management Program, Yakima Indian Nation.** Responsible for the design, development, and implementation of a major supplementation and research facility to test the concept of using artificial production to rebuild natural spawning populations of spring chinook salmon in the Yakima Basin. Write detailed project plans, develop short and long-term project goals and objectives, and supervise professional and technical staff.

**1985-1988: Project Leader. Spring Chinook Enhancement Study.** Responsible for research project designed to determine the best methods of enhancing the spring chinook salmon population in the Yakima Basin. Evaluate survival through various life stages and total production of naturally producing salmon. Determine methods of supplementation with hatchery reared fish while minimizing adverse genetic impacts.

Fast, D.E. 1987. The Behavior of salmonid alevins in response to light, velocity and dissolved oxygen during incubation. Pages 84-92 in Salmonid Migration and Distribution Symposium (E.L. Brannon, ed.), School of Fisheries, University of Washington, and Directorate for Nature Management, Norway, Trondheim, Norway.

Fast, D.E., J.D. Hubble, T.B. Scribner, M.V. Johnston, W.R. Sharp. 1989. Yakima/Klickitat Natural Production and Enhancement Program. 1989 Annual Report to Bonneville Power Administration. Project 88-120. 107 pp.

Fast, D.E. 1989. Supplementation Strategies For The Yakima/Klickitat Production Facility. Pages 143-147 in Northwest Fish Culture Conference Proceedings (R.Z. Smith, ed.).

Fast, D.E., J.D. Hubble, M.S.Kohn, and B.D.Watson. 1991. Yakima River Spring Chinook Enhancement Study. Project Completion Report to Bonneville Power Administration. Project 82-16. Volume 1 - 345 pp. and Volume 2 (Appendices) 133 pp.

## **Field Project Leader**

William Sharp, YIN Fisheries Biologist 12 mth FTE

Bachelor of Science in Natural Resource Management with minor in Watershed Science.  
Colorado State University 1987.

Instream Flow Incremental Methodology (IFIM) certification Colorado State University  
1988.

Current Employer:  
Yakama Indian Nation Fisheries Resource Management Program  
PO Box 151, Toppenish, WA. 98901  
5/1989 to present

Current Responsibilities:  
Project Manger for BPA project 9506800 11/12 FTE. This includes research design and development, daily field operation, data analysis and synthesis, report writing, budgeting, and subcontract development.

Recent Previous Employment:  
U.S. Fish and Wildlife Service, Vancouver, WA.  
August 1988 – May 1989  
Conducted IFIM study on rivers throughout Oregon and Washington

Idaho Fish and Game, Region 3, Boise, ID.  
March 1987 – October 1987  
Constructed and operated adult and juvenile fish trapping facilities, snorkel and adult spawner surveys.

US Army Corps of Engineers, Walla Walla and Portland Districts  
1982 – 1985  
Conducted radio telemetry studies at five mainstem Columbia River Hydroelectric dams.

I have over eleven years of Pacific Northwest fisheries work experience. I have designed and implemented fisheries and habitat studies, analyzed and presented data. I have managed field crews from 2-20 individuals. I have worked on habitat construction projects in the Yakima basin where we've constructed off-channel rearing structures, alcoves and velocity refugia to benefit depressed spring chinook stocks. As the lead biologist on the Klickitat Project 9506800 I have conducted all aspects of project design, budgeting, salmonid population monitoring at all life stages and stream habitat inventory.

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

The technical information resulting from this project (and its component tasks) will be distributed in the following ways:

- A completion (annual) report will be submitted to Bonneville at the close of the fiscal (calendar) year and Bonneville will distribute copies to all individuals and agencies on its mailing list.
- Excerpted data will be appropriately formatted and submitted to the Northwest Aquatic Information Network (StreamNet) and made available to the public via the Internet.
- As an element of the YKFP, the objectives and findings of this project will also be entered into the YKFP home page on the Internet. This home page is currently under construction, and should be operational some time in 1998. The kind of information posted to the YKFP home-page will differ somewhat from that posted to StreamNet. Specifically, the YKFP Internet site will contain more detailed and site-specific information than that in StreamNet, which has a regional perspective and therefore aggregates data in standardized units of larger geographic scope. There will also be more different kinds of data posted to the YKFP site than can presently be accommodated by StreamNet.
- The results of this study will also be presented and critiqued in a (public?) workshop hosted by the YKFP, the "Project Annual Review". The Yakama Indian Nation can be contacted for abstracts (transcripts?) of presentations made at this workshop.
- Information pertinent to monitoring natural production and ecological interactions of species targeted by the YKFP will be incorporated into the appropriate species Monitoring Plan. A Monitoring Plan for upper Yakima spring chinook has already been written (Busack et. al, 1997), and Monitoring Plans for Yakima fall chinook and coho will be written in 1998.
- Use YKFP patient-template analysis to direct habitat and passage improvements as well as any future supplementation activities.
- Through tribal newsletters, local television interviews, and newspaper articles.
- Personal communications with concerned citizens at our high profile juvenile monitoring stations on the lower Klickitat River.