PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project

Analyze And Improve Fish Screens

BPA project number: 20085
Contract renewal date (mm/yyyy): ☐ **Multiple actions?**

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

Business acronym (if appropriate) NPT

Proposal contact person or principal investigator:

Name	Elmer Crowe
Mailing Address	P.O. Box 365
City, ST Zip	Lapwai, Idaho 83540
Phone	(208)843-2253
Fax	(208)843-7322
Email address	elmerc@nezperce.org

NPPC Program Measure Number(s) which this project addresses
2.2C.1; 7.10A.1-7

FWS/NMFS Biological Opinion Number(s) which this project addresses
None

Other planning document references
Columbia River Basin Fish and Wildlife Program

Short description
Analyze and Improve Fish Screens on pump and water diversion in cooperation with the Idaho Fish and Game.

Target species
Chinook Salmon, Coho Salmon, Steelhead trout, Pacific Lamprey, and resident fish

Section 2. Sorting and evaluation

Subbasin
Snake, Salmon, and Clearwater Rivers

Evaluation Process Sort

CBFWA caucus	Special evaluation process	ISRP project type
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories

☒ Anadromous fish ☐ Resident fish ☐ Wildlife	☐ Multi-year (milestone-based evaluation) ☒ Watershed project evaluation	☐ Watershed councils/model watersheds ☐ Information dissemination ☐ Operation & maintenance ☐ New construction ☒ Research & monitoring ☒ Implementation & management ☐ Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship
8335000	Nez Perce Tribal Hatchery	Supplementation
9608600	Clearwater Focus Coordinator Idaho Soil Conservation Commission	Co-coordinator for Clearwater River Subbasin
9401500	Idaho Fish Screening	Fish Screens
9600600	Clearwater Focus Watershed/Co-coordinators	was in umbrella table
9607709	Protect and Restore Squaw and Papoose Watersheds	was in umbrella table
9607711	Restore McComas Meadows/Meadow Creek Watershed	was in umbrella table
9607708	Protect and Restore the Lolo Creek Watershed	was in umbrella table
9901700	Rehabilitate Lapwai Creek	was in umbrella table
9901600	Protect and Restore Big Canyon Creek Watershed	was in umbrella table
20087	Protect and Restore Mill Creek Watershed	was in umbrella table
20086	Rehabilitate Newsome Creek Watershed	was in umbrella table
20084	Protect and Restore North Lochsa Face Watershed Analysis Area	was in umbrella table

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
	N/A	

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Coordinate with Federal & State agencies.	a	Obtain necessary training.
		b	Attend meetings in both the field and office settings.
2	Monitor & Evaluate irrigation pump screening requirements.	a	Inventory of pump & dieversions and screens.
		b	Field review of
3	Installation of screens as identified in the inventory	a	Obtain necessary training.
		b	Install screens where needed.
4	Disseminate information about project to all interested parties.	a	Write quarterly reports.
		b	Write annual reports.
		c	Write future proposals for this project.
		d	Prepare & deliver any public or interdepartment presentations.

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	3/2000	2/2001		X	
2	3/2000	2/2001		X	
3	3/2000	2/2001		X	
4	3/2000	2/2001		X	
				Total	0.00%

Schedule constraints
Unwilling landowner participation

Completion date
2005

Section 5. Budget

FY99 project budget (BPA obligated):

FY2000 budget by line item

Item	Note	% of total	FY2000
Personnel		%51	65,405
Fringe benefits	24% Non-Tax-Exempt, Perm Staff 14% Tax-Exempt, Perm Staff	%9	11,660
Supplies, materials, non-expendable property	Monitoring equipment	%4	5,000
Operations & maintenance		%0	

Capital acquisitions or improvements (e.g. land, buildings, major equip.)		%0	
NEPA costs		%0	
Construction-related support		%0	
PIT tags	# of tags:	%0	
Travel		%5	6,740
Indirect costs	22.9%	%16	20,336
Subcontractor	Idaho Dept of Fish and Game	%15	20,000
Other		%0	
TOTAL BPA FY2000 BUDGET REQUEST			$129,141

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount ($)
Idaho Dept of Fish and Game	Fish Screen Implementation, Maintenance, and Monitoring Support and Training	%13	20,000
		%0	
		%0	
		%0	
Total project cost (including BPA portion)			$149,141

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	$150,000	$175,000	$175,000	$185,000

Section 6. References

Watershed?	Reference
☐	Kappler, Charles J. Indian Affairs, Laws and Treaties, Treaty with the Nez Perces, 1855. 1904. Washington: Government Printing Office.
☐	Northwest Power Planning Council. 1994. Columbia River Basin fish and Wildlife Program. Northwest Power Planning Council, Portland, Oregon.
☐	USDA. 1997. National Indian Forest Resource Management Act, Public Law 101-630.
☐	U.S. Fish and Wildlife Service and U.S. Department of the Interior. 1973. Endangered Species Act of 1973. Washington, D.C.
☐	Washington Department of Fish and Wildlife. 1995. Screening Requirments for Water Diversions.

PART II - NARRATIVE

Section 7. Abstract

Fish screens are a high priority within the Columbia River Basin to protect anadromous fish from becoming entrained into irrigation diversions and pumps. The Nez Perce Tribe (NPT) will work with the Idaho Fish

and Game (IDFG) in evaluating pumps to measure volume, identify screening needs, install and maintain screens for the protection of anadromous and resident fish. Planning , oversight, and coordination of the design and construction of thousands of fish screens and fish passage facilities in the Columbia River Basin is formulated by the Fish Screen Oversight Committee (FSOC). The goals of this project will be accomplished through coordination with Federal and State agencies, monitoring and evaluation of irrigation diversions and pump screening requirements, installation of screens as identified in the inventory, and dissemination of information to all significant parties.

Section 8. Project description

a. Technical and/or scientific background

This project will work in cooperation with the Idaho Department of Fish and Game (IDFG) in working toward the goal of meeting screening requirements on pumps and water diversions within the 1855-treaty territory of the Nez Perce Tribe. This, in turn, will decrease the number of anadromous and resident fish, within the Clearwater, Snake, and Salmon Rivers, entrained into irrigation diversions and pumps, resulting in increased fish production.

The 1855-treaty territory of the Nez Perce Tribe is defined as: Commencing at the source of the Wenatchee, or southern tributary of the Palouse River, down that river to the main of the Tucannon River, up the Tucannon to its source in the Blue Mountains, then southerly along the ridge of the Blue Mountains to a point on the Grande Ronde River, midway between the Grande Ronde and the mouth of the Wallowa River, along the divide between the waters of the Wallowa and the Powder River, then crossing the Snake River, at the mouth of the Powder River, then to the Salmon River, fifty miles above the place known as the "crossing of the Salmon River" then due north to the summit of the Bitterroot Mountains, then along the crest of the Bitterroot Mountains to the place of the beginning (Indian Affairs, Laws and Treaties, 1904).

The 1855-treaty territory of the Nez Perce Tribe encompasses portions of the States of Idaho, Washington, and Oregon. This project will encourage each of these entities to work together to accomplish similar goals. Contacts have been made between the IDFG and the NPT, and verbal agreement has been made. The NPT will work with the IDFG in evaluating pumps to measure volume, identify screening needs, and installation of the screens for the protection of anadromous and resident fish. The IDFG will work to train the NPT in proper procedures and methods of the screening process.

The Fish Screen Oversight Committee (FSOC) completes all planning and coordination of screening. The FSOC coordinates the design and construction of several thousand fish screens and adult fish passage facilities in the Columbia River Basin. Through the FSOC, each state shares methods and techniques for the installation and operation, and maintenance of fish screens to become more efficient.

The IDFG, working with Idaho Department of Water Resources, has identified pump and irrigation diversion within the State of Idaho, and is working to assess and install screens to meet NMFS criteria. Through this project, the Nez Perce Tribe will join the IDFG in completing their effort to screen all irrigation diversions and pumps, then maintaining them to continually meet NMFS criteria. Contact has also been made with the Washington Department of Fish and Wildlife (WDFW) to begin coordination on screening pumps and irrigation diversions.

This project proposal also protects the goal of tribal sovereignty and treaty rights. In the Treaty of 1855, the Nez Perce Tribe ceded much of their aboriginal territory to the United States in exchange for a reservation that was to serve as a permanent homeland. In that treaty, the Nez Perce Tribe reserved certain rights including, "the exclusive right of taking fish in all the streams where running through or bordering said reservations is further secured to said Indians (Indian Affairs, Laws and Treaties, 1904)." Thus, the government has a trust agreement to protect all tribal resources. The proposal will work toward protecting our resources, therefore, fulfilling the governments responsibilities. The project will also allow the tribe to manage our own tribal resources, which will in turn protect our sovereignty and treaty rights. This is called

for in the National Indian Forest Resource Management Act (PL 101-630), which provides for the management of forested tribal trust lands (USDA, 1997).

b. Rationale and significance to Regional Programs

This project works toward the goals and objectives in section 7.10, Provide Passage and Protective Screens on Tributaries, to work with the stated agencies. This project will 1) ensure criteria for design, construction, operation and maintenance of facilities are based on standards and criteria developed by NMFS, 2) use expertise of federal, state and tribal entities to accelerate implementation of screening and passage measures through coordinating with federal and state agencies, and 3) work in cooperation with the FSOC and other significant agencies.

Installing and maintaining fish screens will directly benefit other fisheries projects funded by BPA. Under the Nez Perce Tribal Hatchery (NPTH), fish are incubated and reared in their facility, then released into the natural environment to continue their freshwater rearing within the Snake, Clearwater, and Salmon River drainages. For this production program to achieve success, loss to pumps and irrigation diversions is not an option. The objectives of this proposal will work to benefit anadromous fish for the Nez Perce Tribal Hatchery Projects.

c. Relationships to other projects

The Nez Perce Tribal Fisheries/Watershed Program has been actively involved in the Clearwater Sub-basin with habitat restoration projects. The following list details the relationship to this project proposal.

- Clearwater Subbasin Focus Watershed Program – Coordinate multiple jurisdictions and government agencies efforts to protect, restore, and enhance fisheries habitat in the Clearwater River subbasin. Coordinate among federal, state, and local government agencies and private landowners in cooperation with the Idaho Soil Conservation Commission Focus Program. Project development will emphasize but not be restricted to lands co-managed by federal agencies and the Nez Perce Tribe in the Clearwater River subbasin. Manage implementation projects to enhance or restore fisheries habitat in selected watersheds.
- Lolo Creek Watershed – Coordinate with Clearwater National Forest to improve spawning and rearing habitat through road obliteration/erosion control activities, coordinate with Potlatch Corporation, State of Idaho, Clearwater National Forest, and private landowners to determine riparian protection/grazing exclusion areas, off-site watering development, and cattleguard placement, and perform monitoring and evaluation of riparian areas as a result of fencing and road obliteration/erosion control.
- Squaw and Papoose Creek Watersheds – Improve spawning and rearing habitat through road obliteration/erosion control activities, and perform monitoring and evaluation of road obliteration and sediment reduction procedures.
- Lapwai Creek Watershed – Complete watershed assessment to justify further work within the watershed, and coordinate with private landowners within proposed work area.
- Big Canyon Creek Watershed – Complete watershed assessment to justify further work within the watershed, and coordinate with private landowners within proposed work area.
- Meadow Creek Restoration–Idaho – Increase understanding of meadow restoration through academic graduate work by comparing low impact vs. aggressive mechanical restoration methods within Meadow Creek and Red River in the South Fork Clearwater River.
- Mill Creek- Construct fence to protect critical spawning habitat within the Mill Creek Watershed.
- Newsome Creek – Obliterate roads to reduce sediment delivery to the stream, and monitor channel morphology.

- North Lochsa Face – Improve spawning and rearing habitat through road obliteration/erosion control activities, and perform monitoring and evaluation of road obliteration and sediment reduction procedures.
- Fish Screens – Analyze and Improve fish screens on pumps and diversions within the 1855-treaty territory of the Nez Perce Tribe.

All projects are located within the Clearwater River subbasin, and are consistent with the goals and objectives of the 1994 Fish and Wildlife Program (FWP).

Installing and maintaining fish screens are directly related to other fisheries projects funded by BPA. Under the Nez Perce Tribal Hatchery (NPTH) project, fish are incubated and reared in their facility, then released into the natural environment to continue their freshwater rearing within the Snake, Clearwater, and Salmon River drainages. Habitat conditions are important to the survival of these fish. Combining production and habitat efforts, it is critically important the anadromous fish are not lost due to the lack of screens on pumps and irrigation diversions.

d. Project history (for ongoing projects)

N/A—New Project

e. Proposal objectives

The overall project goal is to identify pumps and diversions which are not screened and cause a loss of juvenile salmonids. This will be accomplished through the following objectives:

Objective 1: Coordinate with federal and state agencies to accomplish the goal.

> **Product:** The product will include a work group of members from the different agencies to provide a cooperative effort on the screening activities within the 1855 treaty boundaries.

Objective 2: Monitor & Evaluate irrigation pump screening requirements.

> **Product:** We will obtain an inventory of pumps and diversions within the treaty territory that are currently screened as well as those that are not.

Objective 3: Install needed screens identified by the inventory.

> **Product:** Begin training to install screens in cooperation with the Idaho Fish & Game.

Objective 4: Disseminate information on this project.

> **Product:** Documents containing information about the screening project.

f. Methods

This proposal is a cooperative effort with the Idaho Fish & Game so the methods we will use will be closely linked. The process involves a screen program agenda that is set by a technical work group under Model Watershed. A sponsor provides a list of screens needing replacement to NMFS criteria, to investigate possible improvements in the screens for the benefit of fish. New screen designs, placement location in the ditch, new diversion dams created for fish passage are evaluated to the extent possible. Each diversion is unique and each canal needs to be treated relative to its operation, fish habitat, etc. Our work will be to begin training individuals to work with the state and cooperatively address the concerns of both fisheries organizations and private landowners.

The following describes the process by which irrigation canal, consolidation of ditches, replacing a diversion that blocks migration of fish and improving the conveyance flows of some inefficient ditches are addressed. Replacing and installing screens and pump intakes requires an agreement (IDFG file) with each irrigator. The course of action for screening on private and public property includes:

1. Determine landownership of screen site, point of diversion, access route for construction and for routine maintenance, and bypass routes.
2. Secure or verify easement for access to screen sites not on properties being irrigated.
3. Secure flow agreements and secure or verify access easements with water users.
4. Secure headgate agreement for water users.
5. Visit site with fisheries biologist, water resource representative, landowners and irrigators prior to site survey to discuss current operations, problems, and study fisheries issues.
6. Complete topographic surveys of sites including preliminary screen sizing and site location(s).
7. Estimate ditch flow volume from survey and other available flow measurements.
8. Secure permits, water right transfers for point of diversion relocations.
9. Design site installation cooperating with NRCS on headgate designs.
10. Review installation design with concerned parties.
11. Package contract and bid.
12. Award Contract.
13. Shop materials and equipment submitted for bids.
14. Provide construction access.
15. Contractor construction and IDFG inspection.
16. Prepare site punch list with landowner, contractor and crew.
17. Contract closeout.
18. Prepare as-built drawing and show actual bypass pipe locations.
19. Fabricate screen and associated metal work in shop.
20. Final product inspection and preparations for use.
21. Operation and maintenance of structures.

Dissemination of information will be accomplished through four different mediums. The first and most important is the use of Streamnet to document work done within the watershed. The second medium is through the tribal fisheries newsletter, Salmon Tales. This is a newsletter that is distributed within the northwest to both tribal and non-tribal groups. The final two areas are through public reviews required by BPA and also the quarterly and annual reports that have to be written to fulfill our contract obligations.

g. Facilities and equipment

Office space, computers, telephone, fax, photocopier, and various equipment have been purchased in past years. The following equipment will be purchased, leased or rented as follows:

- GSA vehicles – leased for use in transportation to and from the work site and associated meeting for planning and design of this project.
- Pump and Irrigation Diversion installation and monitoring equipment.

h. Budget

This budget will support a Biologist to coordinate and facilitate all activities in planning, organizing, implementing, monitoring, and reporting. In addition, a field crew will be hired to perform the implementation, maintenance, and monitoring of the screens.

Supplies and materials will cover the costs of equipment used in measuring pump volume, determining screening needs to meet requirements, and installing fish screens, as needed.

The travel section covers costs of leasing a GSA vehicle for transportation to and from the work sites, attending meetings, conferences, and training sessions.

Indirect costs of 22.9 % of the budget, excluding sub-contracts, is allocated to the Nez Perce Tribal Executive Committee for the means of administration, human resources, and accounting.

Sub-contracts include the Idaho Fish and Game for support in training staff to monitor, install, and maintain the fish screens. Costs will incorporate the price for screening materials, as well as time for training.

Section 9. Key personnel

Heidi Stubbers
Habitat Biologist
Nez Perce Tribe
1.0 FTE

Education: 1997 - B. S. – University of Dubuque, Iowa.
Majors: Environmental Science & Biology,

Current Responsibilities: Coordinate activities to include habitat, research, and production as it relates to watershed management, coordinate with cooperating agencies, work with interdisciplinary teams, inventory and evaluate habitat conditions, and coordinate riparian protection and stream restoration.

Relevant Training:

- Riparian Proper Functioning Condition Training, 1998, Bureau of Land Mgmt.
- Integrated Ecosystem Watershed Management Workshop, 1998, OSU
- Fish Screen and Passage Workshop, 1998, CBFWA
- Total Maximum Daily Load (TMDL) Workshop, 1998, Idaho DEQ
- Road Obliteration Training, 1998, USDA Forest Service

Previous Employment:

- May 1998 – present: NEZ PERCE TRIBE FISHERIES/WATERSHED
  Habitat Biologist
- Sept. 1997 – May 1998: EARTH CONSERVATION CORPS/SALMON CORPS
  Field Director
- Summers 1996 – 1997 – STATE OF IDAHO
  DIVISION OF ENVIRONMENTAL QUALITY
  Biological Technician

Expertise: Heidi has a broad educational background in environmental science and biology. Her professional experience includes a background working with habitat assessment, wildlife population counts, electrofishing, water quality testing, field research, and habitat restoration. Her work requires knowledge of habitat protection, restoration, habitat types, and the relation between them.

Relevant Job Completions: 1) McComas Meadow water table well installation, 2) McComas Meadow fence monitoring, 3) Lolo Creek fence construction & monitoring, 4) Lolo Creek non-source watering sites, 5) Johnson Creek Restoration Review.

Ira Jones
Clearwater Subbasin Focus Coordinator/
Habitat/Watershed Manager
1.0 FTE

Education: University of Montana, Missoula, MT

Major: Wildlife
Attendance: Sept 1973 – June 1974

Current Responsibilities: Planning and implementation of Early Action Watershed Projects, analyze programs, laws, policies related to watershed management, facilitate development of criteria to identify critical fisheries habitat, develop a system to apply criteria to watershed for project development and administration, prepare and plan documents for watershed habitat coordination, provide educational presentations and workshops for watershed management and proposal development, and provide assistance to project proponents with proposal development, implementation, monitoring and assessment.

Previous Employment:

- March 1997 – present: NEZ PERCE TRIBE FISHERIES/WATERSHED
  Habitat/Watershed Manager
- June 1986 – March 1997: UNITED STATES FOREST SERVICE, REGION ONE.
  Tribal Government Program Manager
- Dec. 1980 – June 1986: UNITED STATES FOREST SERVICE, REGION ONE.
  Facilities Manager
- July 1974 – Oct. 1979 UNITED STATES FOREST SERVICE, REGION ONE.
  Fire Cache Work Leader

Relevant Job Completions: 1) Coordinated National, Multi-Regional, and Regional Civil Rights Conferences. 2) Facilitated Treaty Rights workshops with host tribes and multi-government agencies. 3) Organized and conducted Tribal Relations Training primarily for management level from the U.S. Forest Service, Tribes, Bureau of Land Management, and the Bureau of Indian Affairs. 4) Introduced, implemented, and managed the Inter-Tribal Youth Practicums for careers in natural resources and leadership within the U.S. Forest Service Regions 1, 5, 9, and 10. 5) Developed an Intergovernmental Personnel Act (IPA) position to work with the Salish Kootnai College to teach environmental science courses and develop a four-year natural science curriculum at the college. This three-year position and the program developed into a four-year accredited degree program in the fall of 1996.

Felix M. McGowan
Nez Perce Tribal Watershed Coordinator
1.0 FTE

Education: 1994 – BA in Biology – Gonzaga University Spokane, WA

Current Responsibilities: Coordinate all activities within the Nez Perce Fisheries, wildlife, water resources, and cultural resources. These activities are to include habitat, research, and production as it relates to watershed management, coordinate with cooperating agencies, work with interdisciplinary teams, inventory and evaluate habitat conditions, and coordinate riparian protection and restoration efforts.

Relevant Training:

- Riparian Proper Functioning Condition Training, 1998, Bureau of Land Mgmt.
- Integrated Ecosystem Watershed Management Workshop, 1998, OSU
- Road Obliteration Training, 1998, USDA Forest Service
- Introduction to GIS with ArcView 3.0a. 1998, BIA
- Applied Fluvial Geomorphology, 1998, Wildland Hydrology
- Coldwater Fish Culture, 1998, U.S. Fish & Wildlife Service

Previous Employment:

- May 1997 – present: *Nez Perce Tribal Fisheries/Watershed*
  Nez Perce Watershed Coordinator

- August 1994 – April 1997:*North Idaho College*
  Multicultural Academic Advisor

Expertise:

- Felix has a broad educational base in the natural sciences that allows an understanding of different natural processes. The training he has received over the past year has greatly increased his understanding in fisheries and hydrological sciences. These are two of the most important sciences involved in watershed work.

Relevant Job Completions:

Squaw Creek Stream Survey, 2) Squaw Creek Road Obliteration, 3) Lapwai Creek Watershed Assessment, 4) Johnson Creek Restoration Review, 5) Big Canyon Creek Watershed Assessment.

Darin Saul
Director, Center for Environmental Education at Washington State University
Matching Funds Contribution

Education: 1996 – Ph.D. Washington State University, Pullman, WA.
1991 – M.A. Portland State University, Portland, OR
1987 – B.A. University of Washington, Seattle, WA

Current Responsibilities/Relevant Job Completions: Dr. Saul is the Director for the Center for Environmental Education and our leasion with WSU. He is currently working on the assessment model that will be used for Watershed Assessments completed by the Nez Perce Tribe. His experience in scientific writing and past watershed management publications will be invaluable in our efforts to establish a coprehensive document.

Experience:

- Director, Center for Environmental Education. 1996 – present
- Project Manager, Developing a Research Track In General Education Curriculum. 1997 – present
- Associate Director, WSU Preservice Teacher Environmental Literacy Project. 1996 – present
- Coordinator, Environmental Projects Program 1995 – 1996
- Adjunct Faculty at WSU 1997 – present
- Instructor and Teaching assistant 1990 - 1997

Publications:

- *A Next Step for Environmental Education: Thinking Critically, Thinking Culturally.* Accepted at The Journal of Environmental Education. Submitted February 1997.
- *Paradise Creek Watershed Water Quality Management Plan.* Co-written with Bruce Davis and the Paradise Creek Management for Washington Department of Ecology.

- "Intercultural Identity in James Welch's *Fools Crow and The Indian Lawyer*." American Indian Quarterly. Winter 1996, 1-6.

Section 10. Information/technology transfer

Information obtained from this project will be distributed through several documents. Streamnet will be used to document any relevant work completed in the watershed. Articles will be written and submitted to the Tribal Newsletter, Salmon Tales for publication.

The annual fish screen workshop will be attended to learn and share new ideas with federal, state, tribal, and other agencies.

Quarterly reports will be produced including project status, significant results, time lines, problems encountered, and upcoming planned activities. Annual reports will be published compiling all data and accomplishments achieved during the previous work seasons, and project and improvement suggestions for the upcoming years.

Congratulations!