

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

Section 1. General administrative information

Lake Creek Land Acquisition And Enhancement

Bonneville project number, if an ongoing project 9004401

Business name of agency, institution or organization requesting funding
Coeur d'Alene Tribe

Business acronym (if appropriate) CDA Tribe

Proposal contact person or principal investigator:

Name Kelly Lillengreen
Mailing Address Box 408
City, ST Zip Plummer, ID 83851
Phone (208) 686-5302
Fax (208) 686-3021
Email address kellylil@iea.com

Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name
Not determined yet\			

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

Sections 11.3.F.3, 10.8.B, 10.8.B.20, 10.8B.21

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

Other planning document references.

Coeur d'Alene Tribe Project Management Plan-Enhancement of Resident Fish Resources within the Coeur d'Alene Indian Reservation.

Subbasin.

Coeur d'Alene Subbasin; Upper Columbia Subbasin

Short description.

Purchase and enhance 70 acres of emergent wetlands, 180 acres of forested/riparian wetlands, and 1850 acres of adjacent upland forest and shrub communities. Protects and enhances a key watershed on the Reservation; complements ongoing fisheries work.

Section 2. Key words

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

Other keywords.

Wildlife; habitat enhancement; coordination;

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
9004400	Implement Fisheries Enhancement Opportunities Coeur d'Alene Reservation	Project focuses on protection and restoration in four key watersheds on the Reservation. Lake Creek is one of these drainages. Complements existing resident fish habitat restoration work.

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Purchase 2,100 acres in the Lake Creek Drainage	a	Conduct necessary coordination activities to secure title to

			property; includes but is not limited to negotiations with land owner, complete necessary NEPA documents, etc.
		b	HEP analysis to determine HUs for wildlife crediting issues
		c	Develop mitigation plan, HU contract with BPA
2	Enhancement, Operation and Maintenance of property	a	Design and implement enhancement projects including such things as riparian and upland planting, etc.
		b	Develop long term O & M contract

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	10/1997	6/1999	90.00%
2	6/1999	9/2000	10.00%
			TOTAL 100.00%

Schedule constraints.

Negotiation of purchase price may be a constraint

Completion date.

2000 except for annual O& M costs (to be determined later)

Section 5. Budget

FY99 budget by line item

Item	Note	FY99
Personnel		\$28,000
Fringe benefits		\$8,400
Supplies, materials, non-expendable property		
Operations & maintenance	also includes projected enhancement costs	\$120,000
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		

PIT tags	# of tags:	
Travel		\$5,000
Indirect costs	31.6% minus capital and subcontracts	\$51,002
Subcontracts		
Other		
TOTAL		\$212,402

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	\$200,000	\$200,000	\$200,000	\$200,000
O&M as % of total	50.00%	50.00%	50.00%	50.00%

Section 6. Abstract

Project proposes the acquisition of approximately 2,100 acres in the Lake Creek Watershed. The focus of the project is the enhancement and conservation of high value habitat for species which were affected by construction and operation of Albeni Falls. Acquisition is intended to complement ongoing stream restoration work and establishes a precedent for watershed management efforts on the reservation. BPA will receive wildlife credit for approximately 760 habitat units (preliminary estimate) as a result of acquisition of high value wetlands habitat. Additional habitat units will be gained as a result of subsequent enhancement efforts. Enhancement and protection of riparian and upland areas will provide measurable improvements in channel stability, sediment abatement, water quality, and habitat suitability for wildlife and fish. Benefits to wildlife under the mitigation plan address habitat losses attributed to Construction of Albeni Falls. Benefits to resident fish will mitigate for Coeur d’Alene Tribal subsistence losses related to construction and operation of Grand Coulee Dam.

Section 7. Project description

a. Technical and/or scientific background.

In 1987, the Northwest Power Planning Council amended the Columbia River Basin Fish and Wildlife Program and recommended that the Bonneville Power Administration (BPA) fund a baseline stream survey of tributaries located on the Coeur d’Alene Indian Reservation and provide recommendations on ways to improve the fisheries for the Coeur d’Alene Tribe. A series of BPA technical reports (identified in references) have been published that summarize the results. These reports concluded that acquisition and protection of sensitive watershed areas would be a priority for implementing effective restoration efforts.

In 1995, the Northwest Power Planning Council adopted the recommendations set forth by the Coeur d’Alene Tribe to improve the Reservation fishery. These actions included: 1.)

Implement habitat restoration and enhancement measures in Lake, Benewah, Evans and Alder creeks; 2.) Purchase critical watershed areas for protection of fisheries habitat; 3.) Conduct an educational/outreach program for the general public within the Coeur d'Alene Reservation to facilitate a "holistic" watershed protection process; 4.) Develop an interim fishery for tribal and non-tribal members of the reservation through construction, operation and maintenance of trout ponds; 5.) Design, construct, operate, and maintain a trout production facility; and 6) Implement a five-year monitoring program to evaluate the effectiveness of the hatchery and habitat improvement projects.

In 1995, the Northwest Power Planning Council also adopted the following language "Conduct a NEPA analysis, a habitat analysis and a land value appraisal of a 2,100 acre wetland/riparian and associated upland parcel in the Lake Creek drainage and Windy Bay area of Lake Coeur d'Alene. This is to be credited for: 1) 250 acres of wildlife habitat losses due to Albeni Falls dam on Lake Pend Orielle (off-site, in-kind mitigation) and 2.) as a resident fish substitution for extensive salmon losses due to Grand Coulee Dam. The program also recommended that BPA purchase the property, begin habitat enhancement activities, initiating long-term operation and maintenance and monitoring and evaluation.

This project represents an opportunity to protect and enhance the lower reaches of the Lake Creek Watershed. Lake Creek drains 24,856 acres, and empties into Windy Bay at the southwest end of Lake Coeur d'Alene. The proposed parcel includes 70 acres of emergent wetlands at the mouth of Lake Creek, 180 acres of forested/riparian wetlands, and 1850 acres of adjacent upland forest and shrub communities. The watershed provides valuable habitat for populations of black bear, moose, elk, white-tailed deer, muskrat, Canada geese, mallards, westslope cutthroat trout, bull trout, and many species of song birds as well as non-target wildlife species.

The Albeni Falls loss assessment (Martin et al. 1988) reported that 6,617 acres of wetlands and riparian forest were lost. Continent-wide wetland losses may be as high as 50% with correlated declines in waterfowl populations. Riparian forest losses in some western states have been as high as 95% (Brinson et al. 1981). Losses of riparian habitats of Albeni Falls totaled 2,314 acres. This project will mitigate for 180 of riparian forest and 70 acres of emergent wetland.

Purchase of the land will help in the protection and enhancement of a key watershed on the Coeur d'Alene Reservation. This project complements ongoing Tribal habitat restoration work currently conducted under the resident fish program. Additional work is being conducted with EPA on abatement of point and non-point source pollution within the boundaries of the proposed land purchase area.

b. Proposal objectives.

1. BPA will receive wildlife credit for an undetermined number of HU's (preliminary estimates 760) as a result of acquisition. HEP analysis will be used to

evaluate existing wildlife habitat quantity and quality and potential for enhancement. Habitat unit availability will be determined for each target species.

2. Protect 5 miles of riparian habitat critical for the production of adfluvial westslope cutthroat trout. Riparian enhancement work will be implemented through ongoing resident fish enhancement program. Enhancement and protection of riparian areas will provide measurable improvements in channel stability, sediment abatement, water quality, and habitat suitability for wildlife and fish.

c. Rationale and significance to Regional Programs.

Fish and wildlife resources are an integral part of the Coeur d'Alene Tribe's cultural heritage. Anadromous and resident salmonids and wildlife were a critical component of the tribe's annual subsistence requirements. The Coeur d'Alene Tribe, however, lost their salmon fishery with the construction of the Monroe Street Dam in the city of Spokane, and Little Falls Dam farther downstream in the Spokane River. The anadromous fishery was further extirpated from the Coeur d'Alene Reservation through the construction and operation of Chief Joseph and Grand Coulee Dams on the Columbia River. These actions forced the Coeur d'Alene Tribe to rely solely on the resident fish resources of Lake Coeur d'Alene.

Adfluvial westslope cutthroat trout and bull trout are species of special concern in the region. Populations of these fishes in the Lake Creek drainage are significantly reduced from historic levels and when compared with other stream systems in the region. Land use in the Lake Creek drainage consists primarily of managed forest (60%), agriculture (36%), and grazed pasture (3%). Furthermore, approximately 80 percent of land ownership within the watershed consists of small (<400 acres) private lots. All current land uses exert some adverse impact on trout populations. Over harvest and a lack of education in regards to native species conservation has also been responsible for recent declines in population numbers. Because of the severity of habitat loss and a checkerboard ownership pattern, restoration efforts must be approached on a watershed scale. Three life history stages, juvenile rearing, lake residence, and adult spawning, have been identified as critical in determining survivability of adfluvial cutthroat stocks. The linkages between habitat quality and critical life history stages are the focus for rebuilding sustainable and harvestable populations.

This proposal is based on watershed management, and will equally protect and enhance both fish and wildlife throughout an entire watershed. In the upper watershed the Natural Resource Conservation Service is implementing a major water quality enhancement program funded through the State Agriculture Water Quality Program, which targets agricultural ground. The Coeur d'Alene Tribe is also involved with the Environmental Protection Agency and the Department of Environmental Quality to implement non-point source pollution abatement projects through section 319 of the Clean Water Act. The Coeur d'Alene Tribe, through an existing BPA stream restoration program is also working on stream restoration in these areas.

This proposed project represents an opportunity to protect and enhance 2,100 acres in the lower Lake Creek Watershed, through acquisition and enhancement in addition to ongoing work. This project represents an opportunity to further the concept of a watershed approach for the Lake Creek drainage.

The project will address partial mitigation (in-kind, off-site) for wildlife habitat losses due to inundation of 6,617 acres around Lake Pend Oreille. In-kind losses can be attributed to wetland and forest riparian habitats.

This project shares the FWP objectives of: maintaining biological diversity in the Upper Columbia River basin; maintaining genetic integrity by preserving wild fish stocks; providing needed habitat protection; and increasing run sizes and resident fish populations by implementing effective restoration projects; and mitigating wildlife losses. Furthermore, this project serves as a model for adaptive management by implementing projects based on baseline investigations and limiting factors analysis, sharing data and objectives with partnership agencies and private landowners, and incorporating effectiveness and trend monitoring to evaluate project responses.

d. Project history

In 1996, the Coeur d'Alene Tribe received a contract with Bonneville Power Administration to begin negotiations with the land owners for purchase of the property. At the time this proposal was submitted, the Coeur d'Alene Tribe had successfully contacted and determined the land owners were willing to sell the property to the Tribe. At this time, the Tribe is beginning the necessary survey work to complete the sale of the property.

e. Methods.

Past evaluations of stream systems on the Coeur d'Alene Indian Reservation have established the need for implementation of habitat enhancement and restoration projects (Lillengreen et. al., 1993). Initial habitat surveys identified stream reaches in Lake Creek, Benawah Creek, Alder Creek, and Evans Creek that are severely degraded due to past land use practices. The treatment recommendations are presented as a two phase implementation process. Phase 1 emphasizes passive restoration techniques and entails, 1) changing land use practices that are causing habitat degradation, and 2) reestablishing riparian/stream linkages. Phase 2 involves active manipulations of habitat structure that address site specific problems which remain following Phase 1 implementation. The ultimate goal is to promote, to the extent feasible, the restoration of natural ecosystem functions and processes. Land Acquisition has been determined to be an appropriate technique to implement phase 1 restoration in the above tributaries.

Land acquisition and enhancement will have value measurable in HU's. HEP analysis will be used to evaluate existing wildlife habitat quantity and quality and potential for enhancement.

Several key steps will be used to plan and prioritize enhancement efforts in the Lake Creek Drainage. These steps define a process that guides projects from their inception through implementation, monitoring and evaluation. Coordination with program managers and the Tribal Council is necessary during each step of the planning process to ensure that projects comply with restoration goals and objectives and the management actions of other Natural Resource Department programs. Key steps are identified and described below.

- Identify stream reaches needing some level of enhancement based on physical and biological conditions, and prescribe appropriate restoration techniques.
- Prioritize restoration projects using a cost/benefit analysis that considers the potential for long-term ecological recovery and landowner participation.
- Discuss restoration efforts with tribal officials, private landholders, resource managers, and other interested parties, and negotiate landowner agreements.
- Review past data collection efforts for the project site and collect further baseline information, when needed, to facilitate implementation and effectiveness monitoring.
- Develop project specific goals and objectives that are quantifiable and measurable. These objectives should be consistent with overall program objectives and should facilitate the implementation of monitoring and evaluation procedures.
- Coordinate the implementation of projects with the appropriate regulatory agencies and complete all pertinent applications and permits.
- Implement restoration projects using techniques based on the best available science which will mitigate for factors that limit the productivity of native aquatic communities and enhance the function of ecological processes.
- Begin monitoring and evaluation procedures that will effectively determine project effectiveness as it relates to overall program goals and project specific objectives.

f. Facilities and equipment.

Custom Built Aluminum Electroshocking Boat (20 ft.);
Smith-Root Type VII-POW Electrofisher;
Trimble Navigation GPS Pathfinder Basic Plus;
Advanced Telemetry Systems Model R2100 Receiver;
Advanced Telemetry Systems Model DCCII Data Collection Computer;
Juniper Systems Pro2000 Field Computer;
Gurley Model 1100 Digital Flow Meter;
Hydrolab H2O Multiparameter Water Quality Monitoring Instrument;

HACH Model 2100P Turbidimeter;
Ryan RL100 Temperature Monitors;
Topcon AT-G4 Auto Level.

No additional high cost equipment is to be purchased with project funds.

g. References.

- Brinson, M.M., B.L. Swift, R.C. Plantico, J.S. Barclay. 1981. Riparian ecosystems: their ecology and status. USFWS. FWS/OBS-81/17.
- Lillengreen, K. L., T. Skillingstad, and A. T. Scholz. 1993. Fisheries habitat evaluation on tributaries of the Coeur d'Alene Indian Reservation. USDE, Bonneville Power Administration, Division of Fish and Wildlife. Portland, OR. Project #90-44. 218 pp.
- Lillengreen, K., A.J. Vitale, R. Peters. 1998. Coeur d'Alene Tribe project management plan - enhancement of resident fish resources within the Coeur d'Alene Indian Reservation. *In press*: U.S. Department of Energy, Bonneville Power Administration.
- Martin, R.C., H.J. Hansen, G.A. Meuleman. 1988. Albeni Falls Wildlife Protection, Mitigation and Enhancement Plan. Idaho Dept. Fish and Game, Boise. Bonneville Power Administration, Division of Fish and Wildlife. Portland, OR Contract Number DEA179-87BP36154

Section 8. Relationships to other projects

Acquisition and enhancement of land in the Lake Creek Watershed will incorporate collaborative efforts with private landowners, industry and other agencies. Much of the current restoration activities are being conducted on private land within the reservation boundaries and will result in long-term landowner contracts and/or conservation easements. A watershed working group is being formed in the Lake Creek Watershed to serve as an educational forum which will encourage long-term support from private landowners and the timber industry. This group is tasked with identifying issues of concern related to natural resource management, and with developing work plans to address these issues. Local school districts are participating in program sponsored outreach efforts and often donate time and labor at restoration sites. Washington State University, through its environmental projects program, has participated in implementing individual restoration projects. The EPA is working with the Tribe under sections 319 and 106 of the Clean Water Act to reduce non-point source pollution and gather baseline water quality data in the watershed. Additionally, local soil conservation districts have received State Agricultural Water Quality Program (SAWQP) grants to fund projects which reduce non-point source pollution from cropland erosion. Fish and Wildlife Program staff are coordinating stream restoration efforts with this agency so that critical areas receive priority treatment

Section 9. Key personnel

Kelly Lillengreen **Fish, Water and Wildlife Manager**

Mrs. Lillengreen has over eight years professional experience in the evaluation and management of aquatic and terrestrial ecosystems. She currently serves as the Fish, Water and Wildlife Manager for the Coeur d'Alene Tribe. In this position, she is responsible for oversight, coordination and implementation of all fisheries and wildlife projects undertaken by the Coeur d'Alene Tribe. Principle responsibilities include supervision of professional and technical staff, preparation of policy recommendation for Council Action, preparation and approval of implementation and monitoring plans, annual reports, and budgets. In other positions, she has mapped fisheries habitat characteristics, studied fish population characteristics, benthic communities, conducted watershed analysis using Timber-Fish-Wildlife ambient monitoring methodologies, and evaluated the potential impacts of forest management practices on aquatic resources.

Education:

M.S.; Eastern Washington University, Zoology/Fisheries Management; 1993
B.S.; Eastern Washington University; Zoology; fisheries emphasis; 1989

Employment History:

Years of Experience: 9

Employer— Coeur d'Alene Indian Tribe

Dates of Employment— 1994 - Present

Title— Fish and Wildlife Manager

Employer— Coeur d'Alene Indian Tribe

Dates of Employment—1992-1994

Title—Fisheries Biologist

Employer—Eastern Washington University

Dates of Employment—1990-1992

Title—Research Associate

Employer—Eastern Washington University

Dates of Employment—1988-1990

Title—Research Assistant

Technical Publications and Presentations:

Ashe, Becky L., K.L. Lillengreen, J.J. Vella, L.O. Clark, S. Graves, M.R. Barber, G. J. Nenema, A.T. Scholz. 1991. Assessment of the Fishery Improvement Opportunities on

the Pend Oreille River: 1990 Annual Report. U.S. Department of Energy, Bonneville Power Administration. Project Number 88-66. March 1991.

Lillengreen, K., T Skillingstad, A.T. Scholz. 1993. Fisheries habitat evaluation in tributaries of the Couer d'Alene Indian Reservation: 1992 Annual Report. U.S. Department of Energy, Bonneville Power Administration. Project Number 90-044. October, 1993.

Lillengreen, K., A.J. Vitale, R. Peters. 1996. Fisheries habitat evaluation on tributaries of the Coeur d' Alene Indian Reservation: 1993, 1994 Annual Report. U.S. Department of Energy, Bonneville Power Administration. Project Number 90-044. September, 1996.

Lillengreen, K., A.J. Vitale, R. Peters. 1998. Coeur d'Alene Tribe project management plan - enhancement of resident fish resources within the Coeur d'Alene Indian Reservation. *In press*: U.S. Department of Energy, Bonneville Power Administration.

Angelo J. Vitale

Aquatic/Terrestrial Biologist

Mr. Vitale has over eight years professional experience in the evaluation and management of aquatic and terrestrial ecosystems. He currently serves as the stream habitat restoration project coordinator for the Coeur d' Alene Indian Tribe. In this position, he is responsible for coordination and implementation of BPA funded habitat restoration projects. Much of his time is spent developing public awareness of restoration opportunities and benefits and implementing watershed restoration projects. Principle responsibilities include supervision of technical staff, preparation of implementation and monitoring plans, annual reports, and budgets, and data reduction and analysis. In other positions, he has conducted instream flow analysis for site specific studies and basin wide projects, mapped fisheries habitat characteristics, studied fish population characteristics, conducted watershed analysis using Timber-Fish-Wildlife ambient monitoring methodologies, and evaluated the potential impacts of forest management practices on aquatic resources. He also has extensive experience identifying, mapping and interpreting plant community assemblages and conducting site specific surveys for candidate threatened and endangered wildlife species.

Education:

B.S.; University of Idaho; Biology/Botany; 1991

Employment History:

Years of Experience: 10

Employer— Coeur d'Alene Indian Tribe

Dates of Employment— 1995 - Present

Title— Stream Restoration Project Coordinator

Employer— Integrated Resource Management

Dates of Employment— 1995

Title— Project Scientist

Employer— EA Engineering, Science, and Technology, Inc.

Dates of Employment— 1991-1995

Title— Fisheries Scientist

Employer— University of Idaho

Dates of Employment— 1990-1991

Title— Research Assistant

Employer— Idaho State University

Dates of Employment— 1988-1989

Title— Research Assistant

Technical Publications and Presentations:

Peterson, C.R. and A.J. Vitale. 1989. Measuring the activity patterns of free-ranging animals with radiotelemetry. *American Zool.* 29(4):43A.

Vitale, A.J. 1989. Measuring the activity patterns of free-ranging garter snakes with radiotelemetry. Presented to Idaho Academy of Sciences. May.

Lillengreen, K., A.J. Vitale, R. Peters. 1996. Fisheries habitat evaluation on tributaries of the Coeur d' Alene Indian Reservation: 1993, 1994 Annual Report. U.S. Department of Energy, Bonneville Power Administration. Project Number 90-044. September, 1996.

Lillengreen, K., A.J. Vitale, R. Peters. 1998. Coeur d' Alene Tribe project management plan - enhancement of resident fish resources within the Coeur d' Alene Indian Reservation. *In press*: U.S. Department of Energy, Bonneville Power Administration.

Section 10. Information/technology transfer

Information gathered through program efforts is distributed in a variety of public forums. The Fish and Wildlife Program publishes a quarterly newsletter which provides non-technical information to interested and affected parties. The Program coordinates Water Awareness Week in the local school districts in order to educate children in technological applications and proper watershed function. Activities associated with Water Awareness Week are generally conducted at BPA funded restoration project sites. Program staff present technical papers at meetings of the American Fisheries Society and other regional workshops. The Coeur d' Alene Tribe will host a technical workshop in FY 1998 to showcase program activities to regional managers. Finally, technical information is published in annual reports printed by the Bonneville Power Administration.