Bonneville Power Administration
Fish and Wildlife Program FY98 Watershed Proposal Form

Section 1. General administrative information

Title **Meadow Creek Restoration - Idaho**

Bonneville project number, if an ongoing project 9607701

Business name of agency, institution or organization requesting funding
USDA Forest Service, Clearwater Ranger District, Nez Perce National Forest

Business acronym (if appropriate) USFS

Proposal contact person or principal investigator:

Name	Wayne J. Paradis
Mailing Address	Route 2, Box 475
City, ST Zip	Grangeville, ID 83530
Phone	(208) 983 - 1963
Fax	(208) 983 - 4056
Email address	wparadis/r1_nezperce@fs.fed.us

Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name
Nez Perce Tribe	PO Box 365	Lapwai, ID 83540	Ira Jones

NPPC Program Measure Number(s) which this project addresses.
2.2C.1, 7.6A.1 - 2, 7.6B.1 - 6, 7.6C.2, 7.6C.5, 7.6D, 7.7A.1, 7.7A.4, 7.8A.1 - 6, 7.8D.1, 10.2A.1, 10.2C.1,

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

Unknown...

Other planning document references.

Wy Kan Ush Me Wa Kush Wit: McComas Meadow/Meadow Creek Project, Nez Perce National Forest Plan (1987), South Fork Clearwater River Landscape Assessment (Nez Perce National Forest 1997)

Subbasin.

South Fork Clearwater River

Short description.

Restore watershed conditions in the degraded Meadow Creek watershed in coordination with the Nez Perce Tribe's ongoing McComas Meadows Project. For fiscal year 1999, plans from fiscal year 1998 will be implemented including: revegetating streambanks and meadows, modifying unstable banks, enhancing lentic wetlands, and stabilizing roads.

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		Research	+	Ecosystems
	Climate	+	Monitoring/eval.		Flow/survival
	Other	X	Resource mgmt		Fish disease
		+	Planning/admin.		Supplementation
			Enforcement	+	Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords.

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
9607700	Clearwater Watershed Implementation - Nez Perce Tribe	Memorandum of Understanding and possible Cost Share Agreement

Section 4. Objectives, tasks and schedules

Obj 1,2, 3	Objective	Task a,b,c	Task
1	Coordinate technical advisory group	a	Coordinate technical advisory group including the Forest Service

			and Nez Perce Tribe
2	Restore native vegetation	a	Coordinate management of the Clearwater RD "shelterhouse" with the Nez Perce Tribe for use as a greenhouse and provide miscellaneous operating costs
		b	Coordinate fence maintenance with the Nez Perce Tribe
3	Stabilize stream banks and enhance lentic wetlands	a	Contract preparation
		b	Obtain archaeological clearance
		c	Meet NEPA requirements and obtain necessary permits (i.e. 404, etc.)
		d	Contract for channel modification
		e	Contract for wetland development
4	Mitigate sediment delivery from non-point sources (i.e. roads)	a	Contract preparation
		b	Archaeological clearance
		c	Contract for road stabilization
5	Monitor conditions and implement adaptive management as needed	a	Monitor width:depth ratios
		b	Monitor channel morphology with photopoints
		c	Monitor channel profiles
		d	Monitor fish densities
		e	Monitor amphibian densities
		f	Monitor substrate composition
6	Report to BPA	a	Prepare annual report

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	ongoing	continuing	7.6
2	ongoing	9/2002	4.9
3	11/1998	9/1999	27.0
4	ongoing	9/2002	29.2
5	ongoing	continuing	11.8
6	11/1998	9/1999	2.4
Overhead			17.1

Schedule constraints.

None

Completion date.
2002

Section 5. Budget

Item	Note	FY98
Personnel	includes 17.1% overhead	26935.35
Fringe benefits		
Supplies, materials, non-expendable property	includes 17.1% overhead	3395.90
Operations & maintenance	includes 17.1% overhead	644.05
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		
PIT tags	# of tags:	
Travel	includes 17.1% overhead	1871.26
Indirect costs		
Subcontracts	includes 17.1% overhead	26933.00
Other		
TOTAL		59779.56

Outyear costs

Outyear costs	FY99	FY00	FY01	FY02
Total budget	40,000	20,000	10,000	
O&M as % of total	10	10	10	

Section 6. Abstract

As part of the recovery of anadromous stocks in the Snake River, and more locally, as part of the ecosystem restoration effort in the South Fork Clearwater River basin, this ongoing restoration project was funded by the BPA in 1997 to increase anadromous and resident salmonid production in the South Fork Clearwater River basin by rehabilitating the degraded Meadow Creek watershed. This effort is being coordinated with the Nez Perce Tribe and the Clearwater Focus Watershed Project. Objectives for accomplishing the broad goal of ecosystem restoration include: re-establishing native vegetation, restoring the natural channel pattern and bank morphology, enhancing lentic wetlands, and reducing excessive sediment. These objectives seek to improve the growth

and survival of chinook salmon, steelhead, westslope cutthroat trout, and amphibians in the Meadow Creek watershed.

The restoration effort focuses on increasing the natural recovery rate of the ecosystem by removing or reducing the stressors to the hydrologic balance of the watershed (including: re-establishing native vegetation, plugging drainage ditches in a meadow, and reducing sediment inputs from roads) and increasing the recovery rate of within-channel conditions (including: maintaining exclusion of cattle, recontouring unstable meanders, and planting riparian shrubs). These improvements should subsequently stabilize the channel, increase suitable spawning area, improve substrate and thermal conditions required for egg to fry survival.

A pulsed monitoring strategy will be used to continue monitoring conditions for which baseline data have been collected since 1992. The rate of recovery of several variables will be compared to the baseline rate to evaluate effectiveness.

Section 7. Project description

a. Technical and/or scientific background.

As part of the recovery of anadromous stocks in the Snake River, and more locally, as part of the ecosystem restoration effort in the South Fork Clearwater River basin, this ongoing restoration project was funded by the BPA in 1997 to increase anadromous and resident salmonid production in the South Fork Clearwater River basin by rehabilitating the degraded Meadow Creek watershed. This ongoing effort is being coordinated with the Nez Perce tribe and the Clearwater Focus watershed project.

Meadow Creek, and McComas Meadows in particular, are historical Native American fishing grounds for salmon and steelhead. Since settlers homesteaded McComas Meadows, the conditions of the meadow have been greatly altered by grazing, haying, fire-suppression, and timber harvest. In addition, the Harpster Dam prevented migration of anadromous salmonids for years. The stream currently supports anadromous and resident salmonids including: chinook salmon, steelhead, westslope cutthroat trout, and brook trout.

In particular, with the loss of the riparian shrubs, the channel has become wide and shallow leading to increased stream temperatures. Currently, there is an increase in stream temperature of 10 degrees Celsius over two miles of stream length. The drainage is experiencing increased sediment inputs associated with high road densities (3 miles per square mile), and many tributaries have excessive surface fines and cobble embeddedness. This project seeks to mitigate losses in place and to approach in kind mitigation (exact conditions prior to homesteading aren't known).

In 1986, BPA (Project #84-5) funded removal of fish barriers at the mouth of Meadow Cr. presumably caused by landslides. In 1991, McComas Meadows was acquired by the Forest Service. In 1992, extensive baseline monitoring began including: substrate, channel, and habitat measurements; ground and aerial photography/videography; monitoring fish and amphibian densities; redd counts; riparian regeneration; and water temperatures. In 1993, repair to fencing was conducted to

exclude cattle from the stream. In 1994, revegetation efforts began with limited success. In 1996, the Salmon Corps (funded by BPA) removed excessive and dilapidated fencing. In 1997, both the Nez Perce Forest and the Nez Perce Tribe applied for, and received, BPA funding for continuing efforts rehabilitating the Meadow Creek watershed. In 1997, the Nez Perce Tribe installed fencing to completely exclude cattle from McComas Meadows.

This work in Meadow Creek continues from the broader work of the South Fork Clearwater River Habitat Enhancement (1983 - 1991) contracted between the Nez Perce National Forest and BPA. This continuing work, along with Red River Restoration (BPA Project #9303501), is part of the Clearwater Focus Watershed approach promoted by the State of Idaho in conjunction with the South Fork Clearwater River Landscape Assessment. The current work in the Meadow Creek watershed is coordinated with the Nez Perce Tribe's Clearwater Watershed Implementation - Nez Perce (BPA Project #9607700).

Key project personnel include Wayne Paradis (Project Coordinator), Nick Gerhardt (Hydrologist), and Scott Lentz (Project Biologist). The work of the Project Coordinator has included extensive work in habitat enhancement since 1983. The Hydrologist has coordinated and implemented watershed improvement projects and given hydrologic support on others since 1979. The Project Biologist has been involved as a field crew member with habitat enhancement projects since 1994, and has become extremely familiar with the Meadow Creek Restoration project though involvement in: stream habitat surveys throughout the watershed, analysis of these data, and preparation of many documents dealing with the project including BPA proposals and budgets, the monitoring plan, and the Memorandum of Understanding with the Nez Perce Tribe.

Wayne Paradis (Project Coordinator)
Work Experience:

1983, Crew Leader, Lolo Creek Fish Habitat Improvement, BPA
1984-1988, Project Technician, South Fork Clearwater Enhancement, BPA
1988-1997, Fishery Biologist, Clearwater Ranger District

Reports and Publications:

"To Hell and Back Rehabilitation of a Placer Mined Stream" 1987
Annual Reports to Bonneville Power Administration 1984-1988
Final Report, South Fork Clearwater River Habitat Enhancement, BPA,

Nick Gerhardt (Hydrologist)
Restoration-related Projects:

1979-1985. Coordinated and implemented the District's watershed improvement program, including both instream and upland projects.

1985-1997. Hydrologic support on various instream improvement projects in the South Fork Clearwater Basin, including Crooked River, Newsome Creek, Red River, Mill Creek, and Castle Creek. Support provided to projects elsewhere on the Forest including Slate Creek, O'Hara Creek, and 19 Mile Creek. Coordinated the

Forest's watershed improvement program, including support at all project phases (inventory, planning, design, implementation, and monitoring).

Restoration-related Publications and Papers:

1979. Road Erosion Inventory Procedure. Kootenai National Forest.
1983. Use of Shrubs and Trees for Erosion Control in Northern Idaho. Northern Region Soil, Air, and Water Note 83-1.
1997. Recent Flood Effects on the Nez Perce National Forest and Adjacent Areas. (presented paper).

Scott Lentz (Project Biologist)
Work Experience:
1994 - Lolo National Forest: placing habitat enhancement structures, planting riparian shrubs, and placing erosion control fabric
1995 - Bitterroot National Forest: rock drilling and cabling large wood instream structures
1997 to present - Nez Perce National Forest - Project Biologist, Meadow Creek Rehabilitation Project

b. Proposal objectives.

Objective 1 - Coordinate technical advisory group. This objectives coordinates work with the Nez Perce Tribe, and produces an annual Program of Work for each party.

Objective 2 - Restore native vegetation. This objective will increase riparian vegetation along Meadow Creek and increase native and culturally important (to the Nez Perce people) plants within McComas Meadows.

Objective 3 - Stabilize stream banks and enhance lentic wetlands. This objective will modify the structure of a few, particularly unstable streambanks and modify drainage ditches within McComas Meadows to enhance lentic wetlands.

Objective 4 - Mitigate sediment delivery from non-point sources (i.e. roads). This objective will reduce non-point source pollution by sediment from road surfaces.
Objective 5 - Monitor conditions and implement adaptive management as needed. Monitoring will be reported in the annual BPA report and in Forest Service documentation.

Objective 6 - Report to BPA. Annual reports to BPA will be produced.

c. Rationale and significance to Regional Programs.

This project addresses habitat factors limiting the production of anadromous and resident salmonids in the South Fork Clearwater River through coordination with the Nez Perce Tribe. This project meets several goals and measures of the FWP including: ecosystem and watershed scale approach, sharing costs, coordinating with other groups, Focus Watershed rehabilitation, habitat protection and rehabilitation, streambank and streambed rehabilitation, increasing egg to fry survival of resident and anadromous salmonids, improving juvenile chinook and steelhead growth and survival, and increasing the growth, survival, and reproduction of a resident, native salmonid (westslope cutthroat trout).

This work in Meadow Creek continues from the broader work of the South Fork Clearwater River Habitat Enhancement (1983 - 1991) contracted between the Nez Perce National Forest and BPA. This continuing work, along with Red River Restoration (BPA Project #9303501), is part of the Clearwater Focus Watershed approach promoted by the State of Idaho in conjunction with the South Fork Clearwater River Landscape Assessment. The current work in the Meadow Creek watershed is coordinated with the Nez Perce Tribe's Clearwater Watershed Implementation - Nez Perce (BPA Project #9607700). The relationship between the Nez Perce National Forest and Nez Perce Tribe will soon be solidified with a Memorandum of Understanding and possibly with a Cost-Share Agreement.

d. Project history

This work in Meadow Creek continues from the broader work of the South Fork Clearwater River Habitat Enhancement (1983 - 1991) contracted between the Nez Perce National Forest and BPA. This continuing work, along with Red River Restoration (BPA Project #9303501), is part of the Clearwater Focus Watershed approach promoted by the State of Idaho in conjunction with the South Fork Clearwater River Landscape Assessment. The current work in the Meadow Creek watershed is coordinated with the Nez Perce Tribe's Clearwater Watershed Implementation - Nez Perce (BPA Project #9607700).

In 1986, BPA (Project #84-5) funded removal of fish barriers at the mouth of Meadow Cr. presumably caused by landslides. In 1991, McComas Meadows was acquired by the Forest Service. In 1992, extensive baseline monitoring began including: substrate, channel, and habitat measurements; ground and aerial photography/videography; monitoring fish and amphibian densities; redd counts; riparian regeneration; and water temperatures. In 1993, repair to fencing was conducted to exclude cattle from the stream. In 1994, revegetation efforts began with limited success. In 1996, the Salmon Corps (funded by BPA) removed excessive and dilapidated fencing. In 1997, both the Nez Perce Forest and the Nez Perce Tribe applied for, and received, BPA funding for continuing efforts rehabilitating the Meadow Creek watershed. In 1997, the Nez Perce Tribe installed fencing to completely exclude cattle from McComas Meadows.

Recent funding under the BPA Project #96-077-01, the Nez Perce National Forest's project: Meadow Creek Restoration - Idaho, has allowed for coordination with the Nez Perce Tribe and planning for the continuing work proposed in this document.

e. Methods.

Objective 1 - Coordinate technical advisory group.

Task a - Coordinate technical advisory group including the Forest Service and Nez Perce Tribe.

This task focuses on continued cooperation between the Nez Perce Tribe and the Nez Perce National Forest and seeks to produce an annual program of work for each party. Other partners in this project include: Bureau of Land Management (Cottonwood), Idaho Division of Environmental Quality, Idaho Department of Fish and Game, and the Idaho Chapter of the American Fisheries Society. Methods involve communication via meetings, phone, fax, and e-mail.

Objective 2 - Restore native vegetation

Task a - Coordinate management of the Clearwater RD "shelterhouse" with the Nez Perce Tribe for use as a greenhouse and provide miscellaneous operating costs

Task b - Coordinate fence maintenance with the Nez Perce Tribe

As with Objective 1, these tasks coordinate efforts with the Nez Perce Tribe using the same methods as above. The Tribe will be taking the lead with this objective.

Objective 3 - Stabilize stream banks and enhance lentic wetlands

Task a - Contract preparation

Task b - Obtain archaeological clearance

Task c - Meet NEPA requirements and obtain necessary permits (i.e. 404, etc.) Task d - Contra

Task e - Contract for wetland development

Tasks a, b and c fund the appropriate specialists on the Clearwater Ranger District to prepare the documentation necessary for the contracts to be awarded. Planning for Tasks d and e has recently begun as funded under BPA Project #96-077-01. Methods for Task D will likely involve the removal of material from high, raw banks down to the bankfull waterline to create a new floodplain, and thereby reduce excessive sediment input from the raw banks and, by allowing flooding, will reduce stream power downstream. The net effect being a more stable channel and stream bed from the location of these unstable meanders downstream. Task E will likely involving plugging of ditches to increase the size of existing lentic wetlands or breaching ditches to allow water to flow out into the meadow to increase soil moisture content in hopes of returning [portions of] the meadow to a lentic wetland.

Objective 4 - Mitigate sediment delivery from non-point sources (i.e. roads)

Task a - Contract preparation

Task b - Archaeological clearance

Task c - Contract for road stabilization

Tasks a and b fund the appropriate specialists on the Clearwater Ranger District to prepare the documentation necessary for the contracts to be awarded. Planning for Task c has recently begun as funded under BPA Project #96-077-01. Methods for Task D will likely involve one or more of the following: removing or replacing culverts, recontouring roads, installing maintenance free drainage structures at more frequent intervals, and placing waterbars in, or obliterating, all skid roads.

Objective 5 - Monitor conditions and implement adaptive management as needed

Task a - Monitor width:depth ratios
Task b - Monitor channel morphology with photopoints
Task c - Monitor channel profiles (cross-sectional and longitudinal)
Task d - Monitor fish densities
Task e - Monitor amphibian densities
Task f - Monitor substrate composition

Monitoring tasks have been, and will continue to be, shared with the Nez Perce Tribe. Sharing monitoring tasks is being coordinated under BPA Project #96-077-01. The Nez Perce Forest will be responsible for the above Tasks while the Nez Perce Tribe will monitor lentic wetlands, riparian vegetation, water and air temperatures, and redd densities.

After the 1991 acquisition of McComas Meadows by the Forest Service, extensive baseline monitoring began in three reaches of Meadow Creek including: substrate, channel, and habitat measurements; ground and aerial photography/videography; monitoring fish and amphibian densities; redd counts; riparian regeneration; and water temperatures. In 1997, a basinwide habitat inventory was completed.

Formulating a long term monitoring plan was recently funded under BPA Project #96-077-01. Due to the high expense of monitoring, this monitoring plan utilizes the pulsed monitoring strategy proposed by Bryant (1995). Pulsed monitoring involves pulses of high intensity (i.e. expensive) monitoring at a low sampling frequency along with low intensity monitoring at a higher frequency. High intensity monitoring in this case includes stream habitat surveys, vegetation surveys, channel profiles, and aerial photography every five or ten years, while low intensity monitoring includes nearly continuous sampling by automated data recorders of temperature and discharge. Several monitoring tasks are measured with moderate intensity and moderate frequency such as annual measurement of: channel width:depth ratio, substrate composition, amphibian populations, etc. All methods used to measure the variables listed in Tasks a - f are widely accepted in the fisheries and watershed disciplines (e.g. Harrelson et al. 1994, Overton et al. 1997, USDI 1994). The rate of recovery of all measured variables will be compared to the baseline rate of recovery to evaluate effectiveness.

Objective 6 - Report to BPA

Task a - Prepare annual report

This report will be prepared by the Project Coordinator and Project Biologist annually.

f. Facilities and equipment.

The Nez Perce National Forest has all facilities and equipment necessary for the job. Rental vehicle will be procured for 32 days, and there will be less than $3,400 required for miscellaneous supplies.

g. References.

Bryant, M.D. 1995. Pulsed monitoring for watershed and stream restoration. Fisheries 20(11):6-13.

Harrelson, C.C., C.L. Rawlins, J.P. Potyondy. 1994. Stream channel reference sites: an illustrated guide to field technique. Gen. Tech. Rep. RM-245. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 61 pp.

Overton, C.K., S.P. Wollrab, B.C. Roberts, M.A. Radko. 1997. R1/R4 (Northern/Intermountain Regions) Fish and Fish Habitat Standard Inventory Procedures Handbook. Gen. Tech. Rep. INT-GTR-346. Ogden, UT: US Department of Agriculture, Forest Service, Intermountain Research Station. 73 pp.

US Department of the Interior. 1994. Technical Reference 1737-11 Riparian area management: Process for assessing proper functioning condition for lentic riparian-wetland areas. BLM/SC/ST-94/008+1737. Bureau of Land Management, Service Center, Denver, CO. 38 pp.

Section 8. Relationships to other projects

The work in Meadow Creek continues from the broader work of the South Fork Clearwater River Habitat Enhancement (1983 - 1991) contracted between the Nez Perce National Forest and BPA. This continuing work, along with Red River Restoration (BPA Project #9303501), is part of the Clearwater Focus Watershed approach promoted by the State of Idaho in conjunction with the South Fork Clearwater River Landscape Assessment. The current work in the Meadow Creek watershed is coordinated with the Nez Perce Tribe's Clearwater Watershed Implementation - Nez Perce (BPA Project #9607700). The relationship between the Nez Perce National Forest and Nez Perce Tribe will soon be solidified with a Memorandum of Understanding and possibly with a Cost-Share Agreement. Developing this relationship is underway as part of the fiscal year 1998 funding. McComas Meadow is also a demonstration project for the Idaho Chapter of the American Fisheries Society. The Chapter has provided funding for this project and has also provided technical advice and review.

Section 9. Key personnel

Wayne J. Paradis (Project Coordinator), 240 hrs, Coordinates with Nez Perce Tribe, supervises the Project Biologist, prepares annual report with the Project Biologist

Nick Gerhardt (Hydrologist), 104 hrs, Plans channel, wetland, and road modifications; also involved with NEPA and obtaining permits

H. Scott Lentz (Project Biologist), 264 hrs, Assists Project Coordinator, prepares summary reports and federal agreements, supervises monitoring, involved with NEPA and obtaining permits, prepares annual report with the Project Coordinator

Section 10. Information/technology transfer

Information will be shared through the annual report to BPA, through field reviews and presentations, and incorporated into the corporate knowledge.