
PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project

Restore Mccomas Meadow/ Meadow Creek Watershed

BPA project number: 9607711
Contract renewal date (mm/yyyy): 3/2000 **Multiple actions?**

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

Business acronym (if appropriate) NPT

Proposal contact person or principal investigator:

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NPPC Program Measure Number(s) which this project addresses
2.2C; 7.6A1 - 2; 7.6B1 - 6; 7.6C2; 7.6C.5; 7.6D; 7.7A.1; 7.4A.4; 7.8A.1 - 6; 7.8D.1

FWS/NMFS Biological Opinion Number(s) which this project addresses
Land and Resource Management Plans for National Forests and Bureau of Land Management Resource Areas in the Upper Columbia Basin and Snake River Basin Evolutionary Significant Units, 1998.

Other planning document references

Columbia River Basin Fish and Wildlife Program; Wy-Kan-Ush-Mi Wa-Kish-Wit, Spirit of the Salmon, The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes; Clearwater River Subbasin Salmon and Steelhead Production Plan; South Fork Clearwater River Landscape Assessment

Short description

Restore, enhance, and protect the diversity of physical and biological characteristics of Meadow Creek and associated wetland area to provide quality habitat for Chinook salmon and Steelhead trout by working with an overall watershed approach.

Target species

Spring Chinook, Steelhead, and Resident Fish

Section 2. Sorting and evaluation

Subbasin

Clearwater Subbasin - South Fork Clearwater River

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
<input checked="" type="checkbox"/> Anadromous fish <input type="checkbox"/> Resident fish <input type="checkbox"/> Wildlife	<input checked="" type="checkbox"/> Multi-year (milestone-based evaluation) <input checked="" type="checkbox"/> Watershed project evaluation	<input type="checkbox"/> Watershed councils/model watersheds <input type="checkbox"/> Information dissemination <input checked="" type="checkbox"/> Operation & maintenance <input type="checkbox"/> New construction <input checked="" type="checkbox"/> Research & monitoring <input checked="" type="checkbox"/> Implementation & management <input type="checkbox"/> 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
9607701	Meadow Creek Restoration - Idaho	Research/Education Project
9608600	Clearwater Focus Corrdinator Idaho Soil Conservation Commission	Co-coordinator for Clearwater River Subbasin
9600600	Clearwater Focus Watershed/ Co-coordinators	was in umbrella table
9607708	Protect & Restore the Lolo Creek Watershed	was in umbrella table
9607709	Protect & Restore Squaw & Papoose Creek Watersheds	was in umbrella table
9901700	Rehabilitate Lapwai Creek	was in umbrella table
9901600	Protect & Restore Big Canyon Creek Watershed	was in umbrella table
20087	Protect Mill Creek Watershed	was in umbrella table
20086	Rehabilitate Newsome Creek Watershed	was in umbrella table
20084	Protect and Restore the North Lochsa Face Analysis Area Watersheds	was in umbrella table
20085	Analyse and Improve Fish Screens	was in umbrella table

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
1996	Salmon Corps removes 4 miles of posts, rails, and barb wire fence	N/A
1997	Construct 3.0 miles of riparian fence	Exclude grazing to protect riparian and

		cultural resources from grazing effects.
1998	Finish fence construction (0.5 miles)	Exclude grazing to protect riparian and cultural resources from grazing effects.
1998	Monitor existing riparian fence	N/A
1998	Install water table wells for groundwater monitoring	Monitor groundwater levels for correlation in rehabilitating wetlands.

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Coordinate with technical advisory work group associated with BPA project #9677701 Meadow Creek Restoration-Idaho (Research Project)	a	Attend work group meetings to discuss upcoming projects within Meadow Creek Watershed.
		b	Present tribal views on projects.
2	Continue use of Memorandum of Understanding (MOU) between Nez Perce National Forest and Nez Perce Tribe.	a	Review MOU for clarity.
		b	Revise MOU and make modifications as necessary to avoid duplication of tasks.
3	Restore meadow and riparian plant communities (native plants, including cultural plants) to enhance fish and wildlife habitat, reduce sediment delivery to stream, stabilize stream banks, and improve water quality.	a	Evaluate re-vegetation design.
		b	Review design with technical group.
		c	Collect willow cuttings and alder seed from local source.
		d	Grow alder trees and store willow cuttings in cold storage.
		e	Purchase container seedlings.
		f	Plant willow cuttings and container seedlings in areas of stable channel morphology.
4	Monitor success of fence in excluding cattle from grazing effects on meadow riparian habitat.	a	Evaluate over winter damage of fence during early spring months by walking entire fence line.
		b	Repair any damaged or destroyed sections of fence.
		c	Measure plant survival rates as a result of grazing exclusion.
5	Monitor and Evaluate regeneration of wetland characteristics.	a	Monitor obliterated irrigation canals.
		b	Create wetland vegetation design and review with technical group.
		c	Plant native wetland vegetation, including cultural plants.
		d	Measure wetland plant survival rates.
		e	Collect groundwater levels and temperature data, and measure change in regime for

			each set of data.
		f	Monitor wetland characteristics.
6	Monitor stream characteristics.	a	Purchase long-term temperature recorders.
		b	Install temperature recorders at selected sites.
		c	Measure change in stream temperature regime.
		d	Correlate groundwater and stream temperature data with channel morphology, fish densities, redd counts, amphibian densities, substrate composition with data that the Nez Perce National Forest has collected.
7	Complete NEPA analysis to obliterate irrigation ditches to restore hydrological characteristic of the watershed.	a	Coordinate between University of Idaho, Nez Perce Tribe, and Nez Perce National Forest to complete NEPA analysis.
		b	Determine materials and documents needed to complete NEPA analysis.
		c	Complete NEPA analysis under coordination between University of Idaho, Nez Perce Tribe, and Nez Perce National Forest
8	Manage project to effectively accomplish project goals.	a	Develop project time schedules.
		b	Update and communicate with all entities involved in Technical Advisory Work Group.
		c	Share information with all interested parties.
		d	Prepare quarterly and annual reports.

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	12/1999	12/2000	N/A	X	5.00%
2	12/1999	12/2000	N/A	X	5.00%
3	12/1999	9/2000	Restored native plant communities.	X	20.00%
4	3/2000	6/2000	Full functioning fence.	X	5.00%
5	3/2000	9/2000	Regenerated wetland.	X	10.00%
6	2/2000	11/2000	Statistical analysis of monitoring data.	X	25.00%
7	12/2000	11/2000	Completed NEPA Analysis.	X	20.00%
8	12/2000	1/2001	N/A	X	10.00%
				Total	100.00%

Schedule constraints

Severe/Inclement weather, NEPA analysis, and permits for irrigation ditch obliteration.

Completion date

2010

Section 5. Budget

FY99 project budget (BPA obligated): \$127,118

FY2000 budget by line item

Item	Note	% of total	FY2000
Personnel		%33	55,680
Fringe benefits	14% Tax-Exempt, Permanent Staff 24% Non-Tax-Exempt Perm. Staff	%7	12,018
Supplies, materials, non-expendable property	Office supplies, Tree planting augers and bars, Container Seedlings, Cold Storage, Thermograph	%5	7,800
Operations & maintenance		%0	
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		%0	
NEPA costs	Sub-contract	%30	50,000
Construction-related support		%0	
PIT tags	# of tags:	%0	
Travel		%9	15,000
Indirect costs	22.9%	%12	20,724
Subcontractor	Salmon Corps Labor Support and Professional Native Plant and Technology Support	%3	5,000
Other	Equipment - camera	%0	400
TOTAL BPA FY2000 BUDGET REQUEST			\$166,622

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
Earth Conservation Corps/ Salmon Corps	Management of Labor - tree planting	%0	500
Nez Perce National Forest	Ecology, Hydrology, Fisheries, and NEPA Support	%10	20,000
University of Idaho	Professional Faculty support.	%3	5,000
		%0	
Total project cost (including BPA portion)			\$192,122

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	\$120,000	\$120,000	\$100,000	\$100,000

Section 6. References

Watershed?	Reference
<input type="checkbox"/>	Bursik, Robert. 1992. McComas Meadows Vegetation and Floristic Surveys and Management Recommendations. Botanical Enterprises, Amery, WI.

<input checked="" type="checkbox"/>	CRITFC. 1995. Wy-Kan-Ush-Mi Wa-Kish-Wit, Spirit of the Salmon, The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes. Volume I & II, Portland, Oregon.
<input type="checkbox"/>	Federal Guide for Watershed Analysis. 1995. Ecosystem Analysis at the Watershed Scale. Portland, Oregon.
<input type="checkbox"/>	Freeman, Larry H. 1995. How to Write a Quality EISs and EAs, Guidelines for NEPA Documents. Franklin Quest Co. Bountiful, Utah.
<input type="checkbox"/>	Lentz, Scott. 1998. Draft Meadow Creek/McComas Meadows Restoration Monitoring Plan. Missoula, Montana.
<input checked="" type="checkbox"/>	Nez Perce Tribe and Idaho Department of Fish and Game. 1990. Clearwater River Subbasin Salmon and Steelhead Production Plan. Lapwai and Boise, Idaho.
<input type="checkbox"/>	Nez Perce Tribe and Nez Perce National Forest. 1998. Draft Memorandum of Understanding.
<input type="checkbox"/>	Nez Perce Treaty of 1855 with the United States Federal Government.
<input type="checkbox"/>	Northwest Power Planning Council. 1994. Columbia River Basin Fish and Wildlife Program. Northwest Power Planning Council, Portland, Oregon.
<input type="checkbox"/>	USDA. 1997. National Indian Forest Resource Management Act, Public Law 101-630.
<input checked="" type="checkbox"/>	USDA Forest Service. 1998. South Fork Clearwater River Landscape Assessment. Volume I, Nez Perce National Forest, Idaho County, Idaho.
<input type="checkbox"/>	US Department of the Interior. 1998. Riparian Area Management, Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas. TR 1737-11 1994, Bureau of Land Management, Denver, Colorado.

PART II - NARRATIVE

Section 7. Abstract

The Meadow Creek/McComas Meadows restoration project was initiated in 1996 through the Early Action Watershed Project to protect the meadow from excessive grazing, in turn protecting riparian habitat cultural plants, and enhancing habitat for anadromous fish. Within McComas Meadows, under private ownership until 1991, the riparian corridor was completely destroyed. As a result of agriculture and grazing practices, excessive summer water temperatures, a change in stream morphology, and cobble embeddedness, has degraded critical habitat. While under private ownership, the stream was altered to accommodate irrigation within the meadow. This activity degraded the wetland characteristics of the meadow, in turn destroying cultural plants which were distributed throughout the meadow. The overall goal of this project is to restore, enhance, and protect the diversity of physical and biological characteristics of Meadow Creek and associated wetland areas. This goal is designed to protect cultural resources and provide quality habitat for Chinook salmon and Steelhead trout by working with an overall watershed approach. This will be accomplished by establishing a riparian corridor through re-vegetating, enhancing channel morphology, re-vegetating wetland areas, excluding livestock grazing, and monitoring the meadow to determine recovery. The area is unique due to its low elevation meadow habitat, which is accessible to salmon, steelhead, and resident salmonids. Monitoring will be conducted in cooperation with the Nez Perce National Forest, and will include automatic data recorders to measure water temperature, air temperature, and discharge. Improvement of natural characteristics, increasing available fish and wildlife habitat, and benefit to tribal culture is the expected outcome of this project.

Section 8. Project description

a. Technical and/or scientific background

McComas Meadow/ Meadow Creek, located within the South Fork Clearwater Sub-basin, contains critical Chinook salmon, steelhead, and resident fish spawning habitat. Meadow Creek, McComas Meadows in particular, is a historical Native American fishing area. Homesteaders settled the area, resulting in private

ownership, until the US Forest Service (USFS) acquired the property in 1991. The critical habitat and conditions of the meadow has been altered due to excessive grazing, haying, timber harvest, and road building. The addition of irrigation canals has also degraded the wetland characteristics within the meadow, and an irrigation ditch was also constructed around the upper slope of the meadow.

The stream currently supports anadromous and resident salmonids including Chinook salmon, steelhead, and resident salmonids. Both Chinook salmon and steelhead are listed under the Endangered Species Act (ESA) within this subbasin. In 1997, the Nez Perce Tribal Fisheries outplanted 70 adult fall Chinook salmon, which resulted in 34 redds. In 1998, six redds were counted from natural returning Chinook salmon.

Riparian corridor loss has caused the channel to widen and become shallow resulting in increased stream temperatures. Currently, there is a 10 degrees Celsius increase within 2.5 miles of stream length through McComas Meadows. Sediment input to the stream is increasing due to high road densities (4.4 miles per square mile), which causes excessive fines and cobble embeddedness, therefore inhibiting prime spawning habitat (USDA Forest Service, 1998).

Heavy grazing occurred in McComas Meadow for 70 years previous to 1992 (Bursik, 1992), but the exclusion of grazing from the meadow in the past five years has improved to allow meadow grasses to regenerate. Riparian vegetation within the meadow currently consists of few scattered alder species. Historical accounts of the area have cited, "it was often difficult to get a line in the creek due to the dense growth of "willows" along the edge" (Bursik, 1992). The willow population has not regenerated itself after excluding grazing effects for five years, likely due to a very heavily impacted and destroyed seed source, resulting from 70 previous years of intense grazing.

The Forest Service began extensive baseline monitoring in 1992, including: substrate, channel habitat measurements, ground and aerial photography, fish and amphibian densities, redd counts, riparian regeneration, and water temperatures. Monitoring has continued on an annual basis. Monitoring activities are shared by the Nez Perce National Forest (NPNF) and the Nez Perce Tribe (NPT), as defined in the monitoring plan. The NPT is responsible for water and air temperature, discharge, redd densities, amphibian populations, riparian vegetation, lentic wetlands, and a vegetation survey of McComas Meadows. The NPNF is responsible for monitoring visual appearance – photopoints, bankfull width:depth ratio, pool quality, and amphibian populations. The NPNF will be responsible for maintaining a database of the data and performing annual statistical analysis to determine the progress of the restoration project (Lentz, 1998).

In 1993, fence repair was conducted to exclude cattle from the stream. Re-vegetation efforts began in 1994, with limited success. The Earth Conservation Corps/Salmon Corps at Nez Perce removed dilapidated fence in 1996, and in 1997 the NPT constructed a fence to completely exclude cattle from McComas Meadows. Monitoring and maintenance plans for the fence were conducted in 1998. Water table wells were installed in 1998 to monitor groundwater and its relationship to restoring wetland habitat and to groundwater/stream temperature.

The goals and objectives of our project strive toward meeting the goals and objectives found in Wy-Kan-Ush-Mi Wa-Kish-Wit, The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes (CRITFC, 1995).

GOALS OF TRIBAL FISH RESTORAION

- Restore anadromous fishes to the rivers and streams that support the historical cultural and economic practices of the tribes.
- Emphasize strategies that rely on natural production and healthy river systems to achieve this goal.
- Protect tribal sovereignty and treaty rights.
- Reclaim the anadromous fish resource and the environment on which it depends for future generations.

Putting fish back into the rivers and streams alone are not enough to restore their populations, as they require a healthy system to return, spawn, and rear. Our proposal objectives will mitigate the problems stated above by decreasing sediment to streams and rivers, in turn restoring spawning areas; produce riparian and stream bank habitat, resulting in decreased stream temperatures, increased rearing habitat, habitat for fish and wildlife, and stable stream banks; and excluding cattle from critical riparian and stream habitat, allowing the stream and riparian zone to grow and heal.

OBJECTIVES OF TRIBAL FISH RESTORATION

- Within 7 years, halt the declining trends in salmon, sturgeon, and lamprey populations originating upstream of Bonneville Dam.
- Within 25 years, increase the total adult salmon returns of stocks originating above Bonneville Dam to 4 million annually and in a manner that sustains natural production to support tribal commercial as well as ceremonial and subsistence harvests.
- Within 25 years, increase sturgeon and lamprey population to naturally sustainable levels that also support tribal harvest opportunities.
- Restore anadromous fishes to historical abundance in perpetuity.

The first objective states halting the declining trends in salmon and lamprey within 7 years. Cattle exclusion and re-vegetation of stream banks should produce stabilization within 2 years. After 4 years of planting, canopy cover will provide enough shade to decrease stream temperatures. This is within 7 years of the Tribes plan.

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 (Nez Perce Treaty of 1855, 1855).” 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).

The Nez Perce National Forest is working to complete a watershed restoration and vegetation treatment proposal within the Meadow Creek Watershed in 1999. This proposal will touch on the Six-Step Process for conducting an ecosystem analysis at the watershed scale. These six steps include: characterization of the watershed, identification of issues and key questions, description of current conditions, description of reference conditions, synthesis and interpretation of information, and recommendations. Not only the Forest Service, but also the Nez Perce Tribe will use this analysis in planning restoration activities within the watershed. A re-vegetation plan will also be completed in 1999 by the NPT.

The operation and maintenance (O & M) and monitoring and evaluation (M & E) portions of this project proposal will proceed with the upkeep of all past and on-going projects. The enhancement and restoration of past and current projects will continue the effort to protect habitat for fish and wildlife. A continuing analysis of the watershed will identify current or potential problems that could interfere with meeting the tribe’s objectives. The effects of decreased sedimentation, decreased temperatures, and increased habitat will benefit water quality and fish habitat.

b. Rationale and significance to Regional Programs

Habitat conditions limiting the production of anadromous and resident salmonids within Meadow Creek are addressed through a coordinated effort between the Nez Perce Tribe and the Nez Perce National Forest. This project strives toward meeting the goals and objectives of the 1994 *NPPC Fish and Wildlife Program* (FWP) including: sharing costs with relevant parties (Nez Perce National Forest), ensuring biodiversity

through conserving landscapes, ecosystems, species, and populations, habitat protection and rehabilitation, stream bank regeneration and rehabilitation, continued land management, increase egg to smolt survival, survival of fry, juvenile, and adult native anadromous and resident salmonids (Northwest Power Planning Council, 1994).

Habitat conditions within Meadow Creek are lacking, particularly the riparian canopy and wetland characteristics within the meadow. Reclaiming an environment for fish to thrive directly relates to the goals and objectives of *Wy-Kan-Ush-Mi Wa-Kish-Wit*, The Columbia River Anadromous Fish Restoration Plan of the Tribes. Riparian restoration helps many species of fish and wildlife while helping to stabilize aquatic environments. Riparian corridors create a vegetative column along streams and rivers, which serve as transportation routes for wildlife such as birds, deer, and elk. Re-vegetation of the wetland and riparian corridor, based on the re-vegetation plan completed in 1999 by the NPT, will improve the aquatic characteristics. The addition of shade will decrease water temperatures, increase stream flow, increase water depth, reduce sedimentation, stabilize stream banks, elevate water tables and increase cover for fish. These benefits also protect the treaty rights guaranteed by the Treaty of 1855 with the Nez Perce Tribe of Idaho (Treaty 1855).

The McComas Meadows/Meadow Creek restoration project is an on-going “on-the-ground” watershed project; therefore, commitment to long-term habitat improvements are crucial for restoring anadromous fisheries production capabilities in the Clearwater River subbasin. The restoration activities will re-establish the natural river system, which will result in sustainable channel characteristics and a native riparian plant community. The exclusion of grazing from the meadow and supplementation of Chinook salmon have already documented an improvement in the increase number of redds and natural return of salmon to spawning grounds. All activities will conform to the proposed outcome of the watershed restoration and vegetation treatment analysis based on the six-step process of ecosystem analysis at the watershed scale. Funding in 2000 and out-years will make it possible to add to these habitat improvements within the Meadow Creek drainage.

This project works toward meeting the Habitat Objectives in section 7.6 of the *NPPC Fish and Wildlife Program*. First, excluding grazing and enhancing the riparian corridor enforces no increase in sediment input. Riparian corridor enhancement will enhance bank stability to 90 percent, and decrease water temperatures to 60 degrees Fahrenheit through shading. Protecting and restoring wetlands and degraded meadow habitat will also be enhanced.

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). These include: sharing costs with relevant parties (NPNF), ensuring biodiversity through conserving landscapes, ecosystems, species, and populations through riparian protection, sediment reduction activities, habitat protection and rehabilitation, stream bank regeneration and rehabilitation, continue land management, increase survival of native anadromous and resident salmonids.

d. Project history (for ongoing projects)

The Nez Perce Tribal Fisheries/Watershed Program has been actively involved in McComas Meadows since 1997, but the activities in the meadow have been on going since 1986. The following is a summary of fisheries/watershed activities to date:

- 1986 – BPA funded removal of fish barriers at the mouth of Meadow Creek presumably caused by landslides.
- 1991 – McComas Meadows acquired by US Forest Service.
- 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; water temperatures.
- 1993 – Repair to fence to exclude cattle from stream.
- 1994 – Minimal re-vegetation
- 1996 – Salmon Corps removed excessive and dilapidated fence.
- 1997 – Nez Perce Forest and Nez Perce Tribe applied for and received BPA funding for rehabilitation of Meadow Creek. Nez Perce Tribe installs fence to exclude cattle from McComas Meadows.
- 1998 – Finish construction of fence and monitoring of existing fence line. Installation of water table wells for use in wetland re-establishment and groundwater monitoring.

In 1996, \$15,000 was spent to support the Earth Conservation Corps/Salmon Corps at Nez Perce in removing excessive and dilapidated fence. These funds were used to provide meals, camping equipment, and transportation to this AmeriCorps group.

During the 1997 season \$133,000 was spent on the project under BPA project number 96-007-00. This money was appropriated to: construct five miles of replacement fence around the meadow, riparian habitat replacement, and improve fish passage. As a result of weather conditions, increased fence distance, and soil types, the fencing project took longer than anticipated.

In 1998, approximately \$84,000 was allocated to Meadow Creek/McComas Meadows restoration. The fence construction, around McComas Meadows, to protect riparian habitat, was completed in the spring. The existing fence line was monitored for over-winter damages. Native riparian vegetation was identified for future re-vegetation plans, and water table wells were installed to monitor groundwater levels in correlation with wetland and meadow system habitat.

e. Proposal objectives

The overall project goal is to restore the diversity of physical and biological characteristics of Meadow Creek, McComas Meadows in particular, and associated wetland areas to provide quality habitat for Chinook salmon (*Oncorhynchus tshawytscha*), steelhead trout (*Oncorhynchus mykiss*), and resident fish species. To accomplish this goal, the following objectives have been outlined:

Objective 1: Coordinate with technical advisory group associated with BPA project # 9607701 (Meadow Creek Restoration – Idaho).

PRODUCT: An annual working plan will result from continued cooperation between the Nez Perce National Forest and the Nez Perce Tribe. Partners will include Idaho Division of Environmental Quality, Idaho Department of Fish and Game, Bureau of Land Management, and the University of Idaho.

Objective 2: Continue use of Memorandum of Understanding (MOU) between Nez Perce National Forest and Nez Perce Tribe.

PRODUCT: A MOU, completed between the Nez Perce National Forest and the Nez Perce Tribe in 1999, spells out each entities responsibilities, tasks, and will help to avoid duplication of activities between the agencies involved.

Objective 3: Restore meadow and riparian plant communities (native plants, including cultural plants) according to re-vegetation plan, to enhance fish and wildlife habitat, reduce sediment delivery to stream, stabilize stream banks, and improve water quality.

PRODUCT: Restored native plant communities play an important role in improving riparian habitat. Shade provided by riparian shrubs and trees benefit fish habitat and water temperature. Undercut bank habitat and stable stream banks are formed from the root systems created by the riparian vegetation. Root systems also decrease bank sloughing, therefore, reducing turbidity and improving water quality. Riparian habitat also provides habitat for birds and wildlife species.

Objective 4: Monitor success of fence in excluding cattle from grazing effects on meadow riparian habitat.

PRODUCT: The fence will be in full functioning condition, and vegetation successes/plans will be known.

Objective 5: Monitor and Evaluate regeneration of wetland characteristics.

PRODUCT: Monitoring and Evaluation will indicate whether wetland regeneration, vegetation, and groundwater monitoring are successful.

Objective 6: Monitor stream characteristics.

PRODUCT: Stream characteristics, such as temperature, discharge, cobble embeddedness, redd counts, stream gage, and other data will be gathered in the monitoring process to determine success of stream restoration. Monitoring data gathered will be correlated with the Nez Perce National Forest data for statistical analysis

Objective 7: Complete NEPA process to obliterate irrigation ditches around the upper slopes of the meadow to restore the hydrological characteristics of the watershed.

PRODUCT: NEPA document will identify permits, licenses, and alternatives, including proposed action.

Objective 8: Manage project to effectively accomplish project goals.

PRODUCT: Produce quarterly and annual reports on progress and products of objectives and tasks.

f. Methods

Scope: In accomplishing the project goal: restore the diversity of physical and biological characteristics of Meadow Creek, McComas Meadows in particular, and associated wetland areas to provide quality habitat for Chinook salmon (*Oncorhynchus tshawytscha*), steelhead trout (*Oncorhynchus mykiss*), and resident fish species, we will achieve this by working with a holistic watershed approach. The target to restoration will focus on riparian and wetland restoration, which will account for linkages throughout the watershed in its relationship to fish and wildlife species. The stated objectives represent the overall watershed approach to restoring a riparian corridor, as well as enhancing wetlands. In 2000, the project will a) coordinate with significant agencies in planning and installation of specified projects to gather each agencies view on objectives and tasks, and to avoid duplication of tasks by differing agencies; b) monitor existing vegetation and restore riparian and wetland habitat, where needed, to benefit fish and wildlife; c) monitor existing fence line and repair any damaged or destroyed fence to provide a fully functioning fence; d) complete NEPA to proceed with obliteration of irrigation ditch to improve tributary passage around the meadow; e) monitor water table levels and groundwater temperature and link data to wetland enhancement and stream characteristics; f) produce quarterly and annual reports summarizing completion of tasks, accomplishments, and problems encountered.

Approach: The key element to restoration planning is restoring the physical and biological characteristics within the stream and wetland area. Restoring physical processes within the watershed will allow a stabile environment, which will benefit not only the physical, but the biological conditions which organisms live. It is important to evaluate the local site in which work is completed, and its linkage to the overall watershed. Restoring the riparian corridor will provide fish and wildlife habitat and shade to assist in cooling stream temperatures. Root systems will create stabile stream banks, undercut bank habitat, and will improve water quality by reducing sediment delivery to the stream. Continued exclusion of grazing, through maintaining the existing fence line, enables the riparian vegetation to grow and the stream bank to heal without disturbance.

Critical Linkages:

- 1) Restoration of the riparian corridor is critical to the long-term habitat recovery of McComas Meadow/Meadow Creek. This will be accomplished by restoring in-stream and canopy cover, development of undercut banks, and reduce water temperature through shading.
- 2) Utilize Meadow Creek Watershed Analysis completed in 1999 to implement management recommendations.
- 3) Establishing habitat along Meadow Creek to provide cover for rearing fish, reducing water temperatures, stabilizing stream banks, and reducing cobble embeddedness.
- 4) A long-term riparian and wetland habitat is crucial to the survival of salmonid species that return to Meadow Creek as a result of juvenile and adult outplanting through the Nez Perce Tribal Hatchery.

Detailed Methodology: (lower case letters correspond to tasks)

- 1) Coordinate with technical advisory work group associated with BPA project #9607701 Meadow Creek Restoration – Idaho (Research Project).
 - (a) Attend work group meetings, associated with University of Idaho graduate student research project, to discuss upcoming planned projects within Meadow Creek, McComas Meadows in particular.
 - (b) Express tribal views on project plans, and ensure cultural plants and sites are taken into account in project planning.
- 2) Continue use of MOU, developed in 1999, between Nez Perce National Forest and Nez Perce Tribe.
 - (a) Review existing MOU with Nez Perce National Forest to ensure wording and responsibilities of each entity remain clear. The document will be discussed between each entity to assure that no duplication of work is occurring. Existing data between the two agencies, as well as other agencies, such as Idaho Division of Environmental Quality, Idaho Fish and Game, Bureau of Land Management, and others will be shared. Collaboration will identify data needs and gaps in watershed information. Coordinated efforts will identify efforts to gather the desired information.
 - (b) Revise MOU and make changes on an annual basis to avoid duplication of tasks by differing agencies.
- 3) Restore meadow and riparian plant communities (native plant, including cultural plants), based on the re-vegetation plan developed in 1999 by the NPT, to enhance fish and wildlife habitat, reduce sediment delivery to stream, stabilize stream banks, and improve water quality.
 - (a) The vegetation design was established by studying historical records and photographs, and identifying local plant communities. Using adaptive management principles and monitoring data, the vegetation design will be evaluated and modified as necessary.
 - (b) The vegetation design will be reviewed by the technical group prior to implementation.
 - (c) Dormant willow stocks will be cut from a local source during the winter of 1999/2000. Alder seeds will be collected from a local source during the 1999 field season. Local sources are used as first priority to sustain genetic viability.
 - (d) Willow cuttings will be stored in plastic bags in cold dark storage until it is time for planting in the spring of 2000. Alder seeds are propagated at a local nursery, and maintained until planting during the field season in 2000.
 - (e) Additional container seedlings, including cultural plants, are purchased for planting during the field season 2000. Only native plants and trees will be used for re-vegetation, so exotic species are avoided.
 - (f) Willow cuttings, alder trees, and container seedlings are planted along areas of stream where the channel bed is stable. Planted stock will create a stable riparian area, fish and wildlife habitat, decrease sediment delivery to the stream, and decrease water temperatures.
- 4) Monitor success of fence in excluding cattle from grazing effects on meadow riparian habitat.
 - (a) The entire fence line will be walked during the early spring months and monitored for over winter, wildlife, livestock, and human damage. Damage will be noted on a map for reference when repairing damage, so no damaged fence is missed when repairs are completed.
 - (b) Damage or destroyed fence line will be repaired before livestock is available to the area for grazing. A fully functioning fence will be in place to exclude livestock from grazing in McComas Meadows. Excluding cattle from the meadow/riparian habitat will enable the vegetation and banks to heal without impact from cattle.
 - (c) Measure plant survival rates riparian species ID and density. This has been on-going since 1992. In addition, basal stem counts will be conducted and browsing by wildlife will be noted. The improvement in the aerial context and density of riparian vegetation will indicate emergence toward potential natural communities.
- 5) Monitor and evaluate regeneration of wetland characteristics.
 - (a) Monitor checkdams for effectiveness in working toward the regeneration of wetland characteristics.
 - (b-c) A wetland vegetation design will be reviewed by the technical group, and vegetation will be planted in selected sites.

- (d) Monitor community types and distribution, recruitment and reproduction, root density, community dynamics, and survival of wetland vegetation determined using the methods and forms in the BLM Proper Functioning Condition (PFC) assessment (U.S. Department of the Interior, 1998).
 - (e) Collect groundwater level data with a water level meter, and groundwater temperature. Measure change in groundwater level and temperature regimes. Groundwater levels will indicate the functioning condition of the wetland, and temperature is an indicator of water quality.
 - (f) Monitor wetland characteristics for PFC including: hydrogeomorphic characteristics, vegetation community, erosion/deposition, soil types/patterns, water quality, and biotic community according to the methods and forms in the BLM PFC assessment.
- 6) Monitor stream characteristics.
- (a) Long-term automatic temperature recorders will be purchased for use in collection of air, stream, and groundwater temperature.
 - (b) Install temperature recorders at random sites throughout the watershed, emphasizing McComas Meadows.
 - (c) Measure change in summer temperature regime. Summer water temperature will be recorded continuously from June to September. Temperature data collection will document a decrease in water temperature as a result of riparian vegetation, width/depth ration decrease, and the number of pools increase.
 - (d) Groundwater levels and stream temperature will be evaluated for significance. Additional data collection such as discharge, fish densities, redd counts, amphibian densities will be collected by the Nez Perce Tribe and the data will be exchanged with the Nez Perce National Forest for statistical analysis.
- 7) Complete NEPA analysis before obliterating ditches to restore the hydrological characteristics of the watershed.
- (a) Work in coordination with the Nez Perce National Forest and the University of Idaho student graduate project in completing the NEPA analysis. The student will learn the NEPA analysis as it is completed for this project.
 - (b) Determine documents, reference materials, maps, public comments and other materials needed to complete NEPA. Determine purpose of and need for action in writing NEPA analysis.
 - (c) Complete NEPA analysis in coordination with University of Idaho graduate student and Nez Perce National Forest.
- 8) Manage project to effectively accomplish project goals.
- (a) The Nez Perce Tribe, the Nez Perce National Forest, and the University of Idaho graduate research project, and other involved agencies will work as a technical advisory group to complete project goals and objectives under a defined time schedule.
 - (b) The Nez Perce Tribe will update and communicate with the technical group to update all interested entities in the progress and problems encountered with the implementation of projects.
 - (c) Information on the projects will be shared with all interested parties.
 - (d) Project activity reports are prepared each quarter and a formal annual report is published. Reports are submitted to Bonneville Power Administration.

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:

- Pruner's (5) will be purchased for use in clipping willow whips for riparian re-vegetation.
- Tree planting bars (5) will be purchased for use in planting willow whips.
- GSA vehicles (2) will be leased for use of transportation to and from work site, meetings, and workshops.
- Thermographs (15) will be purchased for use in recording stream and groundwater temperature over several months.
- Digital camera will be purchased for use in photo points and pictures for presentations.
- Computer is owned for use of preparing proposals, presentations, quarterly, and annual reports.
- Survey equipment is owned for use in stream surveys and channel morphology cross-sections.

h. Budget

This budget will support on full-time Habitat Biologist and one seasonal Technician to assist with fieldwork. The Personnel and fringe benefit costs will cover the employee's salary and benefits offered through the NPT.

Supplies and materials costs contribute to office supplies, tree planting bars and augers for use in re-vegetation. Re-vegetation materials, storage, and temperature recorders are covered in this section.

NEPA costs will cover the costs of an analysis to complete obliteration of sections of the irrigation ditch. This irrigation ditch is located around the upper slope of the meadow, which restricts passage of tributaries to the meadow.

The travel section covers costs of leasing a GSA vehicle, mileage costs, and per diem. In addition, travel and registration costs for conferences, seminars, and workshops are covered in this section. Travel and registration to a Wildland Hydrology course is included.

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

Sub-contracts include professional support from the Wildlife Habitat Institute for re-vegetation, and Earth Conservation Corps/Salmon Corps labor support.

A digital camera will be purchased for up-to-date technology for use in preparing reports and presentations.

Cost-share contributions among the stated agencies may be a combination of administrative, professional, technical, or specific areas of expertise support. These costs may be contributed as in-kind work.

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.

Peter Goodwin, P.E.
University of Idaho
College of Engineering, Civil Engineering

Education: 1986 Ph.D. Hydraulic Engineering, University of California, Berkeley
1982 M.S. Hydraulic Engineering, University of California, Berkeley
1978 B.Sc. Civil Engineering, University of Southampton, U.K.

Relevant Experience: Dr. Goodwin has been the PI, lead hydrologist, or project manager of several large scale river or watershed management studies including: 'Living River Strategy' for the Napa River Watershed (1991-present), Sediment Management Plan for the North Fork Feather River (1993-96), Russian River Enhancement Plan (1992-95), Floodplain Restoration of the Willamette River (1995-6), Tijuana River and Wetland Enhancement Plan (1995-present), Review of the Sedimentation issues of the Three Gorges Dam (1995), and the San Lorenzo Flood Management Plan (1985-1996). These projects utilized adaptive management strategies. He is scientific advisor to several related projects including the San Dieguito Wetland Enhancement Project. Recent related research grants include projects funded by NATO, IBM, and NOAA.

Related Activities: Dr. Goodwin is Associate Editor of the ASCE Journal of Hydraulic Engineering with responsibility for computational hydraulics and restoration of rivers and wetlands. He is involved in several national and international activities closely related to this proposal, including the International Association of Hydraulic Research (IAHR), Ecohydraulics Committee and is chair of the American Society of Civil Engineer committee on wetland restoration. Dr. Goodwin is also the organizer or instructor on several short courses on environmental river and wetland management including the ASCE Continuing Education Course on Wetland Restoration (August, 1997), the University of Idaho course on Environmental River Management (May, 1997), and Geomorphology in River Restoration at the University of California, Berkeley.

Relevant Work Experience:

1996-present: Associate Professor, Department of Civil Engineering, University of Idaho.
1989-1996: Technical Director, Philip Williams & Associates, Ltd., San Francisco.

Relevant Publications:

Havno, K. and P. Goodwin. 1995. Hydraulic modeling of ecological criteria: Towards an integrated approach for hydrologic, geomorphic and ecologic understanding of river corridors. Seminar 2. XXVI IAHR Congress, London.

Jordan, J.J., J Florsheim, and P. Goodwin. 1995. Using water resource and riparian parameters to develop a river management program in *Water Resources at Risk*. W.R. Hotchkiss, J.S. Downey, E.D. Gutentag and J.E. Moore. American Institute of Hydrology.

Falconer, R.A. and P. Goodwin. 1994 *Wetland Management*. Thomas Telford, London.

Goodwin, P. and R.A. Denton. 1991. Seasonal influences on the sediment transport characteristics of the Sacramento River, California. Procs. of the Instn. Of Civ. Eng., Part 2, 91.

Janet Hohle, Clearwater Subbasin Focus Program Co-coordinator (1 FTE)

Education

Institution	Location	Attendance	Major	Degrees
Washington State University	Pullman, WA	6/92-8/94	Education	Ed.M
University of Idaho	Moscow, ID	1-6/92; 5/94	Education	n/a
University of Washington	Seattle, WA	1/77 - 8/78	Geology	B.S.
University of Iowa	Iowa City, IA	1971-1975 (52 hrs)	General	n/a

Certificates: Idaho: All subjects grades 1-8; Washington: Elementary education grades K-8; Earth Science Endorsement grades 4-12.

Professional Organizations: National Council Teachers of Mathematics; Phi Delta Kappa; Washington Science Teachers Association; Soil and Water Conservation Society.

Employment History

May, 1997 to Present **Clearwater Subbasin Focus Program Co-coordinator** Idaho Soil Conservation Commission. Moscow, Idaho. Duties: Analyze programs, laws, policies related to watershed planning, management, and restoration. Work with local groups to facilitate development of projects for fisheries habitat restoration that maximize subbasin agencies expertise, funding, and importance to aquatic species. Prepare documents for watershed habitat work coordination. Give educational presentations and workshops for watershed management and proposal development, implementation, compliance with NEPA and the ESA, monitoring, and assessment. Coordinate information and education outreach for projects coordinated through the Clearwater Focus Program. Provide assistance to project proponents with proposal development, implementation, monitoring, and assessment.

March, 1996 to May, 1997 **State Mineral/Aggregate Specialist** Oregon State Department of Land Conservation and Development. Salem, Oregon.

1994-1996 **Teacher** Substitute for grades 4-12 in Idaho and Washington school districts. Summer school science teacher-Upward Bound University of Idaho.

April, 1985 to November, 1991 **Geology Department Director** Colville Confederated Tribes. Nespelem, Washington.

April, 1982 to April, 1985 **Mineral Analyst** Colville Confederated Tribes. Keller, Washington.

January, 1979 to April, 1982 **Geologist** Colville Confederated Tribes. Nespelem, Washington.

The co-coordinator has extensive professional experience with interdisciplinary resource management, development, and problem solving in areas with multiple jurisdictional issues associated. During her tenure with Colville Confederated Tribes, the co-coordinator was responsible for competitive

federal contracting. Demonstrated expertise includes resource issue coordination, public education, communication, and systems analysis.

Relevant Job Completions: 1) Data base compilations for system planning in the Clearwater River subbasin; 2) Legal interpretation and application of new Oregon State Administrative Rule for Goal 5 (natural) resources; 3) Statewide workshops in Oregon to train county and state personnel on new Goal 5 Rule; 4) Mineral exploration and Development system design and implementation on the Colville Indian Reservation; 5) International mineral marketing campaign for the Colville Tribes Mount Tolman ore body.

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.

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!