

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

Section 1. General administrative information

Little Naches Streambank Restoration

Bonneville project number, if an ongoing project 9065

Business name of agency, institution or organization requesting funding
U.S. Forest Service, Wenatchee National Forest, Naches Ranger District

Business acronym (if appropriate) USFS

Proposal contact person or principal investigator:

Name	<u>Scott Hoefer</u>
Mailing Address	<u>10061 Highway 12</u>
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Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name
General Contractor -if project is funded it will be put up for bid, so this is unknown until then.	Unknown	Unknown	Unknown

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

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

Other planning document references.

Northwest Forest Plan (NFP) - Record of Decision (ROD) - Aquatic Conservation Strategy - Objectives 1, 2, 3, 4, 5, 8, 9

Little Naches Pilot Watershed Assessment - Chapter V, pg. 2 - Desired Future Condition - Restore and maintain riparian vegetation in recreation areas and previously harvested areas within riparian zones. Chapter V, pg. 4 - Desired Future Condition - Restore and maintain in-channel roughness.

Subbasin.
Yakima

Short description.

Restore degraded streambanks of the Little Naches River using bioengineering techniques. A significant amount of riparian vegetation has been lost due to dispersed recreation, which has resulted in excessive streambank erosion. Spawning gravel fine sediment levels are very high, and a significant amount of fine sediment is being contributed by bank erosion.

Section 2. Key words

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

Other keywords.

streambank, riparian vegetation, fine sediment

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
9705000	Little Naches River Riparian & In-Channel Habitat Enhancement Project	The streambank restoration project compliments this project, resulting in a comprehensive approach to restoring anadromous fish stocks in the Little Naches River.

Section 4. Objectives, tasks and schedules

Objectives and tasks

Briefly describe measurable objectives and the tasks needed to complete each objective. Use Column 1 to assign numbers to objectives (for reference in the next table), and Column 3 to assign letters to tasks. Use Columns 2 and 4 for the descriptive text. Objectives do not need to be listed in any particular order, and need only be listed once, even if there are multiple tasks for a single objective. List only one task per row; if you need more rows, press Alt-Insert from within this table.

Obj 1,2,3	Objective	Task a,b,c	Task
1	Reduce the amount of actively eroding streambank, increase channel roughness, and provide edge cover for anadromous and resident juvenile and adult salmonids.	a	Stabilize actively eroding streambanks using a variety of bioengineering techniques, including; live stakes, fascines, brushmattresses, live cribwalls, branchpacking, and protecting banks with logs and root wads.
2	Increase vegetative diversity.	b	Use cuttings and rooted stock which will provide the greatest diversity at each site.

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	03/99	09/99	85%
2	03/99	09/99	15%

Schedule constraints.

The streambank stabilization structures using live cuttings need to be implemented immediately after the snowpack melts off while the cuttings are still dormant. If there is a heavy snowpack, the project may not be able to be started until May, instead of March or April.

Completion date.

1999

Section 5. Budget

List FY99 budget amounts for each category. If an item needs more explanation, provide it in the Note column. If the project uses PIT tags, include the cost (\$2.90/tag). **Be sure to enter a total on the last line: this is the amount of your budget request.**

Item	Note	FY99
Personnel	contract administration	\$3,040.00
Fringe benefits		
Supplies, materials, non-expendable property	rooted planting stock	\$2,000.00
Operations & maintenance		
Capital acquisitions or improvements (e.g. land,		

buildings, major equip.)		
PIT tags	# of tags:	
Travel		
Indirect costs		
Subcontracts	contractor who wins contract to implement	\$19,200.00
Other		
TOTAL		\$24,240.00

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget				
O&M as % of total				

Section 6. Abstract

Monitoring spawning gravel fine sediment levels, since 1985, has shown that fine sediment levels are high in the Little Naches River, with fine sediment, <1.0 mm in diameter, consistently making up 15 to 20 % of the spawning gravel. A major source of fine sediment which has been identified is streambank erosion associated with dispersed campsites. The project proposal is to mitigate losses of streambank vegetation in kind by restoring the streambanks which have been degraded by dispersed recreation. This project proposes to improve anadromous fish habitat quality, by restoring degraded streambanks using a variety of bioengineering techniques. The project would consist of restoring approximately 1600 feet of streambank spread out over seven sites. Work at these sites will consist of a variety of bioengineering techniques which incorporate logs, cuttings, and rooted stock. This project is consistent with 7.6 Habitat Goal in the sense that it improves the productivity of salmon and steelhead habitat critical to the recovery of the weak spring chinook and summer steelhead stocks in the Little Naches River.

Section 7. Project description

a. Technical and/or scientific background.

The Little Naches Sediment Monitoring Program (SMP) is a cooperative effort by the Yakama Indian Nation, the U.S. Forest Service, and Plum Creek Timber Company to monitor spawning gravel fine sediment levels, to determine the sources of fine sediment, and to reduce or eliminate these sources. Monitoring spawning gravel fine sediment levels, since 1985, has shown that fine sediment levels are high in the Little Naches River, with fine sediment, <1.0 mm in diameter, consistently making up 15 to 20 % of the spawning gravel. As a result, much road and trail maintenance and improvement has taken place to reduce sediment input from roads and trails. The next important source which has been identified by the group is streambank erosion associated with dispersed campsites. In addition, the Little Naches Pilot Watershed Assessment (1994) identified dispersed recreation in the riparian zone of the Little Naches River as a significant cause of a decrease in the amount and diversity of riparian vegetation. This has resulted in increased streambank erosion and surface erosion at these sites. The next step is to actually restore these streambanks, which is what this project is designed to do.

The proposal is to mitigate losses of streambank vegetation in kind by restoring the streambanks which have been degraded by dispersed recreation. This project proposes to

improve anadromous fish habitat quality, by restoring degraded streambanks using a variety of bioengineering techniques. This project is consistent with the goals and objectives of the FWP. The plan states that reduced habitat quality has resulted in lower survival of anadromous salmonids during critical freshwater life stages, and that improved habitat quality would result in greater anadromous survival. The Little Naches River is a prime example of a river with reduced habitat quality due to human impacts, and there is an opportunity to improve habitat quality through the proposed streambank restoration. This project is consistent with 7.6 A Habitat Goal in the sense that it improves the productivity of salmon and steelhead habitat critical to the recovery of the weak spring chinook and summer steelhead stocks. This project will provide important edge rearing habitat and adult holding cover in an area where this habitat has been degraded or eliminated due to the presence of a road and extensive recreation. This project is also consistent with 7.6D Habitat Objectives in that it takes action to limit the percentage of fine sediments in salmon and steelhead redds, by restoring streambanks which are identified fine sediment sources. Rosgen (1994) stated that in many watersheds the majority of fine sediment results from bank erosion. Overall, this project addresses several components of the 7.6D Habitat Objectives, by reducing fine sediment, as mentioned above, providing bank stability, restoring riparian vegetation, and improving stream morphology.

A significant amount of restoration work has already occurred at these sites in order to reduce the impact of dispersed recreation on the streambanks. Boulders have been placed 30 to 100 feet from the streambanks in order to prevent vehicles from driving and parking close to the streambanks. Specific trails have been designated in order to provide access to the river at a single point instead of recreationists walking all over the streambanks. In addition, dispersed roads which produced fine sediment have been hardened with gravel. This is consistent with the Recreation Management portion of the 7.6D Habitat Objectives, which states that recreational facilities within riparian zones should be managed in a manner that contributes to the attainment of habitat objectives.

b. Proposal objectives.

The project objectives are as follows:

1. Reduce the amount of actively eroding streambank, increase channel roughness, and provide edge cover for anadromous and resident juvenile and adult salmonids.
2. Increase vegetative diversity.

The project would consist of restoring approximately 1600 feet of streambank spread out over seven sites. These sites will consist of a variety of bioengineering techniques which incorporate logs, cuttings, and rooted stock.

This project benefits the FWP in several ways. Relative to 7.6D Habitat Objectives, this project takes direct action to limit the percentage of fine sediments in salmon and steelhead redds by restoring actively eroding streambanks which have resulted from human impacts, the methods used will increase bank stability, restore riparian vegetation, improve stream morphology, and manage recreation in a way which contributes to the attainment of habitat objectives.

c. Rationale and significance to Regional Programs.

The rationale for this project is well founded. As mentioned above, the Little Naches SMP has identified streambank erosion associated with dispersed recreation as a source

of fine sediment which needs to be dealt with. In addition, the Little Naches Pilot Watershed Assessment (1994) also identified the need to restore these streambanks associated with dispersed recreation. Measures have already been taken to keep recreationists off of the streambanks, now it is important to restore these banks, so they do not continue to be a major source of fine sediment.

The FWP states, in 7.6 Habitat Goal, Policies and Objectives, that improved habitat quality will result in greater survival of salmonids at each freshwater life stage, and this project will improve habitat quality. Habitat quality will be improved through implementing bioengineering techniques on 1,600 feet of eroded streambank. This work would address 7.6D Habitat Objectives by decreasing fine sediment input associated with bank erosion, increasing bank stability, restoring riparian vegetation, improving stream morphology, and controlling recreation in the riparian zone. This project also relates specifically to Technical Recommendations in WY-KAN-USH-MI WA-KISH-WIT. One recommendation is to begin improving in-channel stream conditions for anadromous fish by improving land use practices, and this project contributes to that by completing a project which controls the use of riparian zones by recreationists.

A project which is currently funded that this project is closely related to is Project # 9705000, Little Naches River Riparian and In-Channel Habitat Enhancement Project. We have worked closely with Jim Matthews, fisheries biologist, of the Yakama Indian Nation during the planning stages of that project. The intention is to take a whole watershed approach in restoring the aquatic system in the Little Naches watershed. The plan is to aggressively restore the portions of the system which are not properly functioning. This streambank restoration project will play a vital role in restoring riparian function, while the Little Naches River Riparian and In-Channel Habitat Enhancement Project also works toward restoring channel and riparian function.

d. Project history

This is a new project.

e. Methods.

The specific tasks associated with this project are to stabilize actively eroding streambanks using a variety of bioengineering techniques, including, live stakes, fascines, brushmattresses, live cribwalls, branchpacking, and protecting banks with logs and rootwads, and to use cuttings and rooted stock which will provide the greatest diversity at each site. Specific design at each site will be directed from a few different sources. First and foremost, practical experience will direct design based on the success of different bioengineering projects which have been implemented on the district. Secondly, bioengineering guidelines will be taken from bioengineering publications from the Georgia Soil and Water Conservation Commission (1994), and the British Columbia Ministry of Environment, Lands and Parks, and the Ministry of Forests (1995).

The expected results of this project consist of a significant reduction in the amount of streambank erosion associated with dispersed recreation sites. In addition, quality habitat will be provided for juvenile salmon and steelhead, as well as good holding cover for adult salmon and steelhead. It is expected that as a result of these projects there will be greater survival of salmon and steelhead during their freshwater life stages. This project will be monitored by setting up photo points to monitor vegetative establishment and erosion visually, and snorkeling will be done to determine fish use before and after the project.

f. Facilities and equipment.

Equipment necessary for this project consists of basic equipment which contractors will already own, including a back hoe, logging truck, loppers, chain saws, and other hand tools.

g. References.

Donat, M. 1995. Bioengineering Techniques for Streambank Restoration, A Review of Central European Practices. Watershed Restoration Project Report No. 2. British Columbia Watershed Restoration Program, Ministry of Environment, Lands and Parks, and Ministry of Forests. Vancouver, B.C.

Nash, E. and T. Mikalsen. 1994. Guidelines for Streambank Restoration. Georgia State Soil and Water Conservation Commission.

Rosgen, D. 1994. Personal communication.

USDA Forest Service, Wenatchee National Forest, Naches Ranger District. 1994. Little Naches Watershed Assessment. Naches, WA.

Section 8. Relationships to other projects

A project which is currently funded that this project is closely related to is Project # 9705000, Little Naches River Riparian and In-Channel Habitat Enhancement Project. We have worked closely with Jim Matthews, fisheries biologist, of the Yakama Indian Nation during the planning stages of that project, and he is aware of and supportive of this project proposal. The intention is to take a whole watershed approach in restoring the aquatic system in the Little Naches watershed. The plan is to aggressively restore the portions of the system which are not properly functioning. While the Little Naches River Riparian and In-Channel Habitat Enhancement Project is currently working towards restoring portions of the river negatively affected by the presence of a road in the floodplain, this streambank restoration project compliments it by restoring streambanks degraded by recreation impacts.

Section 9. Key personnel

Scott Hoefler

Degree: B.S. - Fisheries Science, earned in 1992

School: Oregon State University

Employer: USDA Forest Service

Title: Naches Ranger District Fisheries Biologist

Responsibilities: Oversee the district fisheries program, which includes budget administration, supervision, and planning the program of work for the year. In addition, I give fisheries input to projects on the district.

Expertise:

I have had a wide range of training and experience in the field of fisheries since I started with the Forest Service in 1992. My expertise is in the whole area of fish habitat quality. I have had extensive experience doing habitat surveys, analyzing, and interpreting data from habitat surveys. I have also spent a significant amount of time snorkeling streams, observing fish use of different types of habitat.

Recent Accomplishments: Fisheries input to Rattlesnake Watershed Analysis, and Oak Creek Transportation Environmental Analysis, Team Leader of Oak Creek Watershed Analysis, and Bumping/American Watershed Analysis

Section 10. Information/technology transfer

All monitoring data and information will be summarized in the annual Naches Ranger District monitoring report, which is incorporated in the Wenatchee National Forest annual monitoring report which goes to the regional office. Information gained from monitoring will be used to improve the effectiveness of the projects, and will be available for employees on other districts to consult when planning projects.