

LOWER RED RIVER MEADOW RESTORATION PROJECT

9303501

SHORT DESCRIPTION:

Restore natural river functions, fisheries habitat, and riparian shrub communities in lower Red River Meadow that have been degraded over time by reconnecting historic stream meanders that were cut off by dredging activity and by reestablishing native riparian shrub communities to provide bank stabilization, cover, and temperature control.

SPONSOR/CONTRACTOR: PWI/RME

Pocket Water Inc/River Master Engineering

Steve Bauer

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GOALS

NPPC PROGRAM MEASURE:

7.6, 7.7

BACKGROUND

HISTORY:

Red River is a tributary of the South Fork Clearwater River, an important anadromous fisheries production stream in central Idaho. The lower meadow contains 4.4 miles of steam channel which flows through four parcels of state and private land. In 1994 BPA and Idaho Soil and Water Conservation District (ISWCD) joined in partnership with Idaho Fish and Game to purchase the Little Ponderosa Ranch for chinook salmon mitigation required under the Endangered Species Act. The Ranch is managed as the Red River WMA and is dedicated to fish and wildlife enhancement. The IDSWCD initiated stream restoration planning in 1995 with contracts to consultants. The preliminary plan will be completed on March 15, 1996 and plans are to initiate stream restoration work in June, 1996.

This project continues the long-term effort of state and federal agencies to rebuild fish populations and restore fish habitat in the South Fork Clearwater River Basin. Since 1984 the Nez Perce National Forest and BPA have invested 1.2 million dollars on chinook salmon and steelhead trout habitat in this basin. The lower meadow project extends this effort on state and private lands and recognizes the leadership of a grass roots organization, the Idaho Soil and Water Conservation District, in providing the linkage to the private land owner. To date the project has completed planning and design and is ready to initiate implementation in the summer of 1996.

BIOLOGICAL RESULTS ACHIEVED:

The Nez Perce N.F. completed habitat enhancement projects in Crooked River, Red River, Meadow Creek, Haysfork Gloryhole, Cal-Idaho Gloryhole, Fisher Placer, and Leggett Placer. Improvements are reported in number of pools, rehabilitation of areas of flood plain, number of instream structures, and area of spawning and rearing habitat improved. In 1996 the Lower Red River meadow project will benefit 1,966 meters of stream, and provide 30,000 square meters of chinook salmon spawning and rearing habitat. During the next several years the project will improve over 4.5 miles of stream channel for salmon habitat.

PROJECT REPORTS AND PAPERS:

Idaho Soil and Water Conservation District. 1994. Lower Red River Meadow Restoration Project, Grangeville, Idaho. Bauer, S.B. 1994. Red River meadow fisheries habitat reconnaissance. Idaho Soil and Water Conservation District, Grangeville, Idaho, 9 p. Brunsfeld, S.J., D. Dawes, S. McGeehan, and D.G. Ogle. 1995. An analysis of riparian soils, vegetation, and revegetation options at Red River. Prepared for Idaho Soil and Water Conservation District. Siddall, P. 1992. South Fork Clearwater River habitat enhancement. Nez Perce National Forest. Bonneville Power Administration, DE-A179-84B16475, Portland, Oregon. 90 p.

ADAPTIVE MANAGEMENT IMPLICATIONS:

The project will provide a useful model for improving streams that have been damaged by dredging, channelization, and riparian grazing. The project will provide a demonstration of the coordination of channel reconstruction with riparian shrub community restoration.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

The overall goal is to restore the diverse physical and biological features which historically provided high quality habitat for chinook salmon spawning and rearing. Specific objectives will be measured by length of stable stream bank improved, area of spawning and rearing habitat restored, area of riparian shrub community restored, length of channel for fisheries habitat added to the existing channel length, and area of shade and canopy gained. Specific project objectives include: 2. Restore channel meander pattern. 3. Restore habitat type diversity. 4. Restore instream and overhead cover. 5. Restore riparian vegetation. 6. Increase bank stability. 7. Improve substrate condition and water quality. 8. Improve wildlife habitats. 9. Demonstrate stream restoration is compatible with private land management objectives. 10. Provide opportunities for education on fish and wildlife restoration methods. 11. Evaluate objectives by comparison of reconstructed channels to historic conditions using aerial photo interpretation and stream channel measures.

CRITICAL UNCERTAINTIES:

The project will assist in answering gaps in knowledge regarding stream restoration techniques. In many nearby projects establishing riparian shrub communities has not be successful. The project has begun investigating these problems and will develop additional approaches to overcoming the limiting factors of dry soils and wildlife herbivory in these high elevation meadows. Uncertainty in project implementation relates to the effect of variable climatic and hydrologic conditions which affect the available working period.

BIOLOGICAL NEED:

The project addresses the mitigation requirements of the Endangered Species Act for chinook salmon. The project will provide high quality spawning and rearing habitat which is lacking in the South Fork Clearwater River basin. The project will also improve habitat for resident fish and wildlife.

HYPOTHESIS TO BE TESTED:

The restoration project provides a demonstration project to test various methods in stream restoration. Specific hypotheses will be established in relationship to monitoring stream attributes in pre- and post project monitoring design.

METHODS:

Methods are directed at achieving the goal of restoring natural river functions and processes. The existing river channel will be reconnected to historic channels through construction of short channel reaches. The overall channel length and sinuosity will increase, gradient will decrease, and the channel will narrow. The result of these physical changes is to increase number and frequency of pools and the diversity of macro-habitat types and the potential for the stream to create micro-habitat elements. The second major change is the increase in the water surface elevation to maintain wetted stream banks and riparian areas. Water table enhancement will increase the period of wetted soils necessary for restoration of the native shrub community. Revegetation will be accelerated by direct planting of nursery grown stock and protection of these areas from wildlife herbivory.

PLANNED ACTIVITIES

SCHEDULE:

PROJECT COMPLETION DATE:

2001

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

Risks are associated with generation of off-site suspended sediment if sediment control practices are not successful. Flooding of adjacent neighbors is possible if contractors install grade control structures incorrectly.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

Expected performance of target population or quality change in land area affected:

The project will assist the BPA in meeting the requirements of compliance with ESA for chinook salmon, but, also for sensitive species such as steelhead trout and bull trout. Over the long term additional high quality habitat will provide increased opportunities for spawning and rearing. This increase in quantity and quality of habitat provides the potential for significant increases in smolt production from the Red River drainage.

MONITORING APPROACH

Methods are directed at achieving the goal of restoring natural river functions and processes. The existing river channel will be reconnected to historic channels through construction of short channel reaches. The overall channel length and sinuosity will increase, gradient will decrease, and the channel will narrow. The result of these physical changes is to increase number and frequency of pools and the diversity of macro-habitat types and the potential for the stream to create micro-habitat elements. The second major change is the increase in the water surface elevation to maintain wetted stream banks and riparian areas. Water table enhancement will increase the period of wetted soils necessary for restoration of the native shrub community. Revegetation will be accelerated by direct planting of nursery grown stock and protection of these areas from wildlife herbivory.

RELATIONSHIPS

RELATED BPA PROJECT

RELATIONSHIP

South Fork Clearwater River Habitat Enhancement, Nez Perce National Forest.

OPPORTUNITIES FOR COOPERATION:

The action is dependent on receipt of permits for stream channel alteration and completion of NEPA. These actions, however, have been in progress and no obstacles are anticipated. The activity in 1996 and 1997 occurs with the concurrence of a willing landowner. Future year activities depend on completion of agreements with private landowners. Cooperative opportunities occur with the Red River WMA Advisory Committee which includes public agencies and private foundations. Secondly, the Red River WMA is established in part to provide educational opportunities for primary and secondary education as well as the general public. Stream restoration activities provide exciting opportunities for participation by volunteer groups and cooperative research programs with university fish and wildlife programs.

COSTS AND FTE

1997 Planned: \$0

1997 Planned: \$703,000

FUTURE FUNDING NEEDS:

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$500,000			
1999	\$500,000			
2000	\$500,000			
2001	\$500,000			

PAST OBLIGATIONS (incl. 1997 if done):

<u>FY</u>	<u>OBLIGATED</u>
1993	\$62,478
1994	\$450,000
TOTAL:	\$512,478

Note: Data are past obligations, or amounts committed by year, not amounts billed. Does not include data for related projects.

1997 OVERHEAD PERCENT: 10%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:

[Overhead % not provided so BPA appended older data.]
