

N. FORK JOHN DAY RIVER DREDGE TAILINGS RESTORATION

9605300

SHORT DESCRIPTION:

Restore floodplain function to 9 miles of the North Fork John Day River that was dredge mined in the late 30's

SPONSOR/CONTRACTOR: USFS/CTUIR

USDA Forest Service, Umatilla National Forest; Confederated Tribes of the Umatilla Indian Reservation
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SUB-CONTRACTORS:

None

GOALS

GENERAL:

Supports a healthy Columbia basin, Maintains biological diversity, Increases run sizes or populations, Provides needed habitat protection

WATERSHED:

Implementation

ANADROMOUS FISH:

Habitat or tributary passage

NPPC PROGRAM MEASURE:

7.6B.5

RELATION TO MEASURE:

Project is critical to restore natural river functions to reaches of the North Fork John Day River channelized by historic dredge mining. The project has multiple benefits including fish habitat, water quality, floodplain restoration, and wildlife habitat.

TARGET STOCK

John Day River Summer Steelhead
John Day River Spring Chinook

LIFE STAGE

Spawning adults and rearing juveniles
Spawning adults and rearing juveniles

MGMT CODE (see below)

N, W
N, W

AFFECTED STOCK

Redband Trout
Bull Trout

BENEFIT OR DETRIMENT

Beneficial
Beneficial

BACKGROUND

Stream name:

North Fork John Day River

Stream miles affected:

River mile 65.5 to 76.3

LAND AREA INFORMATION

Subbasin:

John Day River

Land ownership:

Public

Acres affected:

270

HISTORY:

A \$30,000 USDA Forest Service pilot project was completed in 1993. Additional project cost share totals \$38,000 USFWS Acid Spill trust fund, Blue Mtn. Chapter Trout Unlimited \$1,500, US Forest Service \$40,000 from anadromous fish habitat and watershed improvement.

BIOLOGICAL RESULTS ACHIEVED:

Stream cross-section profiles to measure floodplain recovery. Photopoints established to monitor riparian vegetation recovery.

PROJECT REPORTS AND PAPERS:

R-6 Fish Habitat Technical Bulletin, Number 5, September 1994, North Fork John Day Dredge Tailings Restoration Project by Shaun P. McKinney and Edward Calame.

ADAPTIVE MANAGEMENT IMPLICATIONS:

Past dredge mining severely altered the North Fork John Day River floodplain and instream characteristics. The tailings piles left behind confine the stream to a strait, narrow, high velocity channel. The results of these activities continue to cause streambank erosion and loss of fish habitat. This project is an excellent example of adaptive management. Previous restoration activities were more structure oriented while this new approach seeks to restore ecological floodplain function. Techniques developed on this project would have application throughout the world where dredge tailing channel restoration projects could be considered to restore fish and wildlife habitat.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

The project will consist of redistributing dredge tailings piles within the floodplain of the river including intermittent side channels and the main river channel. This treatment will allow the river to pass high flows, dissipate energy, and deposit sediment and would allow the river to meander through the floodplain and create quality fish and wildlife habitat. The purpose of the project is to improve salmonid rearing habitat, water quality, streambank stability and riparian function. Physical channel parameters make excellent measurable objectives for this proposed project. The cone-shaped dredge tailings piles restrict high stream flows to a narrow channel that results in accelerated bank erosion. Channel profile objectives would be established for each project reach.

CRITICAL UNCERTAINTIES:

Without this project critical salmon and steelhead spawning and rearing habitat would continue to be severely limited due to constraints on the floodplain function.

BIOLOGICAL NEED:

The North Fork John Day River is home to wild runs of summer steelhead and spring chinook salmon. This multi-year project will restore the floodplain by re-depositing the dredge tailings allowing the river to flow over portions of the floodplain previously unavailable. Channel complexity and fish habitat quality and quantity will increase as the river reclaims its floodplain, dissipating the energy of high flow events and depositing sediment that promotes riparian vegetation growth.

HYPOTHESIS TO BE TESTED:

N/A

ALTERNATIVE APPROACHES:

An alternative to construct a new channel with stable morphological characteristics was considered but eliminated because it would not meet visual standards for the Wild and Scenic River corridor, had a high risk of failure, and was very expensive.

JUSTIFICATION FOR PLANNING:

N/A

METHODS:

Restoration of natural floodplain function will be accomplished through the reconstruction of the natural floodplain strata disturbed by past mining activities using heavy equipment. Gravel and cobble tailing piles will be used to fill depressions in the floodplain following removal of built-up fine sediments. These sediments will then be used to cover the leveled tailings for

Environmental attributes affected by the project:

Riparian vegetation recovery will indirectly be promoted by reestablishment of the floodplain.

Changes assumed or expected for affected environmental attributes:

Temporary, short term increases in water turbidity with long-term improvement in water quality is expected.

Measure of attribute changes:

N/A

Assessment of effects on project outcomes of critical uncertainty:

No critical uncertainties were identified

Information products:

Annual monitoring report will be produced in 1999 through 2001.

Coordination outcomes:

N/A

MONITORING APPROACH

The strategy for monitoring and evaluating the project results will be through suspended sediment samplers, photo point, and stream cross-section profiles. Suspended sediment samplers are used above and below project activities to measure suspended sediment concentrations. Photo points are established to monitor riparian vegetation recovery on both the floodplain and flood terraces. Stream cross-section profiles are surveys to measure changes in the river thalweg and to determine if the river channel is aggrading or degrading. Monitoring and evaluation will continue for at least 10 years in and around the project site.

Provisions to monitor population status or habitat quality:

Annual redd surveys are conducted jointly by ODFW and USFS.

Data analysis and evaluation:

Annual monitoring reports 1999 - 2001.

Information feed back to management decisions:

Project Implementation began in 1997. Information from the pilot project each additional year of implementation has been used to improve the activities each year.

Critical uncertainties affecting project's outcomes:

No critical uncertainties are identified.

EVALUATION

Riparian vegetation recovery documented by photo points. Anadromous fish spawning and rearing within the project area.

Incorporating new information regarding uncertainties:

Project implementation is conducted by our direction of equipment rental contract. We have complete control of on-the-ground activities and can easily adapt to new information.

Increasing public awareness of F&W activities:

Many Forest visitors have been to the project site during construction and always leave with a greater understanding of floodplain function. Project accomplishments have been presented a local sportsmen club meetings, Regional stream restoration workshops, and to the Government of British Columbia.

RELATIONSHIPS

RELATED BPA PROJECT

5502800
8400800

RELATIONSHIP

The new proposal is an example of adaptive management. Project work was accomplished in the early 80's with contract 8400800.

OPPORTUNITIES FOR COOPERATION:

The Confederated Tribes of the Umatilla Indian Reservation and USDA Forest Service, Umatilla National Forest are Co-applicants on this proposed project. Earlier phases of the project have received support from the Acid Spill Trust Fund which is co-managed by the Confederated Tribes of the Umatilla Indian Reservation and the Oregon Department of Fish and Wildlife. The Blue Mountain Chapter of Trout Unlimited in an active participant in project activities with volunteer in kind services and a \$500 cash pledge for 1996 activities as well as sponsoring the project for Embrace-a-Stream and Bring Back the Natives grant proposals. A letter of support for the project was received from the Pacific Rivers Council after their representatives coming. Charlie Dewberry and Willa Nehlsen spent a day of review at the project site.

COSTS AND FTE

1997 Planned: \$100,000

FUTURE FUNDING NEEDS:

PAST OBLIGATIONS (incl. 1997 if done):

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$100,000	0%	100%	
1999	\$20,000	0%	0%	100%
2000	\$20,000	0%	0%	100%
2001	\$20,000	0%	0%	100%
2002	\$0	0%	0%	100%

<u>FY</u>	<u>OTHER FUNDING SOURCE</u>	<u>AMOUNT</u>	<u>IN-KIND VALUE</u>
1998	USFS Acid Spill Trust Fund Blue Mtn. Chapter Trout Unlimited	\$80,000	\$1,000
1999	USFS Acid Spill Trust Fund Blue Mtn. Chapter Trout Unlimited	\$10,000	\$1,000
2000	USFS Acid Spill Trust Fund Blue Mtn. Chapter Trout Unlimited	\$10,000	\$1,000
2001	USFS Acid Spill Trust Fund Blue Mtn. Chapter Trout Unlimited	\$10,000	\$1,000

OTHER NON-FINANCIAL SUPPORTERS:

Pacific Rivers Council Letter of Support

LONGER TERM COSTS: None

N/A

1997 OVERHEAD PERCENT: 10.7%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:

Total direct project costs

CONTRACTOR FTE: _____ people for a total of _____ full time equivalents

SUBCONTRACTOR FTE: Four equipment operators
