

IDAHO MODEL WATERSHED HABITAT PROJECTS

9401700

SHORT DESCRIPTION:

Implement the Model Watershed Plan to maintain and improve anadromous and resident fish habitat through the development of Coordinated Resource Management (CRM) plans along the priority stream segments of the Lemhi, Pahsimeroi and East Fork of the Salmon River. These projects include livestock grazing controls (fences, pasture systems, etc.), bank stabilization and instream structure placements, riparian vegetation reestablishment and other habitat enhancers through best management practices.

SPONSOR/CONTRACTOR: SWCS

Lemhi and Custer Soil and Water Conservation Districts
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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

RESIDENT FISH:

Habitat

NPPC PROGRAM MEASURE:

7.7B.3

TARGET STOCK

Salmon River basin bull trout and cutthroat trout

Snake River summer steelhead

Snake River spring chinook salmon

LIFE STAGE

Spawning incubation, rearing, migration, and adult holding

All freshwater - spawning incubation, rearing, migration, and adult holding

All freshwater - spawning incubation, rearing, migration, and adult holding

MGMT CODE (see below)

N,P,W

L,N,S,W

L,N,S,W

AFFECTED STOCK

All stream/riparian dependent species

BENEFIT OR DETRIMENT

Beneficial

BACKGROUND

STREAM AREA AFFECTED

Stream name:

Lemhi, Pahsimeroi and East Fork Salmon Rivers

Stream miles affected:

150

Hydro project mitigated:

CUMULATIVE EFFECTS OF EIGHT COLUMBIA/SNAKE RIVER DAMS

Project is an office site only

LAND AREA INFORMATION

Subbasin:

Salmon River, Idaho

Land ownership:

70,000 agricultural and 1.7 million public and National Forest lands (small amount of private)

Acres affected:

Approx 70,000 acres / 1.7 million basin-wide

Habitat types:

STREAM/RIPARIAN

HISTORY:

Local involvement for anadromous fish recovery was initiated by the Lemhi SWCD. In the mid 1980's, fish habitat issues became a high priority throughout the region and was made part of the SWCD's five year conservation plan. Funding for habitat improvement projects has come from several sources: BPA funded the project coordination and the implementation of on-the-ground projects, IDFG through Challenge Grants and HIP projects, Shoshone-Bannock Tribes via the Salmon Corps, BOR has established a cooperative water demonstration project on the Lemhi, NRCS and IDFG funded a cooperative river basin study on water usage and moments. Additionally, the NRCS and IDFG have supported with engineering and technical assistance, SCC has assisted with administrative support and inventory work, and a multiple of agencies have provided staff for the technical committee.

1. The Dowton/Chewing Fencing Project along the Pahsimeroi. This project was completed in January of 1996 with approximately 1.5 miles of the river corridor fenced in critical rearing area. Funding was for materials only with construction by the Shoshone Bannock Tribes Salmon Corps.
2. Parkinson Foundation Seed Farm. This project was for a 50 percent cost-share and is 90 percent complete. The project opened up approx 5 miles of the Pahsimeroi River for spawning/rearing that was priviously dewatered.
3. The Big Flat Ditch Project changed a diversion canal to allow Carmen Creek to reach the Salmon River (previously dewatered) for steelhead and potential chinook use. Carmen Creek is important historical habitat but is curenly not occupied.

FY 1996

1. The Gary Ingram fence is construction on .75 mile of the East Fork (critical rearing section).
2. The Star Coleman fence for .75 miles of corridor fence along the Pahsimeroi has been submitted for funding and scheduled for construction by the Tribes in March of 1997 (critical rearing section).
3. The Wayne Baker fence for .75 miles of fence along the East Fork scheduled for construction by March of 1997 (critical spawning and rearing section).
4. The Lattimer and Cutler 1.5 miles of corridor fence along the Pahsimeroi has been submitted and scheduled for construction in March of 1997 (critical spawning and rearing section).
5. The Neibuer fence for 2.75 miles of fence along the Lemhi and Big Springs Creek is completed (critical spawning and rearing section).
6. The Kesl fence will be completed on .75 miles of the Lemhi in March of 1997.
7. The Thomas fence improving 1.25 miles of the Lemhi (critical spawning and rearing section).
8. Beyeler fence on 1.25 miles in active spawning and rearing section of the Lemhi River.
9. Cooperative project with BoR on five diversions on the lower Lemhi that dewater the river.
10. Hannah Slough project on the Salmon River to protect an important rearing secondary channel with significant historical significance.
11. Coordinated diversion consolidation with IDFG and BoR on five diversions above Challis (diversions significant obstructions to migrating fish the East Fork and the upper Salmon basin).

BIOLOGICAL RESULTS ACHIEVED:

The biological results are directly related to reducing the limiting factors to anadromous and resident fish habitat and migration passage. Most of the impacts occur on irrigated farmland in the upper Salmon River Basin. Measurable outcomes will include positive changes to habitat components(stream substrate, water temp, habitat type composition, bank stability, water quality, etc.).

Actions have been directed to the high priority stream segments in the Lemhi Pahsimeroi and East Fork as outlined in the Model Watershed plan and the recent habitat inventory. Fencing projects have so far treated approximately 5 miles in the Lemhi, Four miles in the Pahsimeroi and 3 miles in the East Fork. The Parkinson Project created seven miles of fair to good habitat previously blocked by an irrigation diversion and a previously de-watered section of the Pahsimeroi is now accessible full season. The total biological benefits are yet to be determined by future monitoring.

PROJECT REPORTS AND PAPERS:

Idaho's Model Watershed Plan for the Lemhi, Pahsimeroi and East Fork of the Salmon River (completed in 1995) and the Stream Habitat inventory Report for the Lemhi, Pahsimeroi and East Fork due out in 1997.

ADAPTIVE MANAGEMENT IMPLICATIONS:

Interest in salmon recovery in the model watershed area resulted in many initial habitat improvement projects. However, the keyt

o the effectiveness of these multiple actions has been the coordination of the local watershed interests. This project has demonstrated that coordination of activities to address identified objectives will ensure implementation in an orderly and prioritized method , as opposed to a sporadic approach. This orderly and coordinated progress in achieving the model watershed goals is essential to continuing this habitat improvement with local support. Funding of this initiative will mean the maintenance of at least forty miles of the most important habitat in the Lemhi, Pahsimeroi and East Fork of the Salmon. The stream segments targeted for funding produce approximately fifty (50) percent of the production of the endangered spring/summer chinook in the Upper Salmon River Drainage. Without funding this habitat will slowly degrade.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

1. Reduce water temperatures in streams through shading of the stream with improved vegetative cover.
2. Reduce erosion of streambanks to decrease fine silts in spawning gravels.
3. Increase cover of streambanks to improve quality and quantity of complex stream habitats for all life-stages.
4. Increased productivity of anadromous fish through increase egg to fry survival and fry to smolt survival.

CRITICAL UNCERTAINTIES:

Downstream impacts on fish survival will greatly influence the number of returning adults to the model watershed area, drought may reduce survival rates and reduction of federal grazing allotments may put more grazing pressure on the private floodplain areas. Also, participation from landowners to install BMPs to benefit the streamside vegetative cover and ultimately the fishery habitat of the targeted high priority stream segments is always uncertain. The current perception of the Soil and Water Conservation Districts is that if it can be designed to have benefits for the landowner as well as the fish habitat, the landowner will participate. This is providing it is voluntary and that strings attached to such a program are not so restrictive that they or their neighbor become regulated by them.

BIOLOGICAL NEED:

See Model Watershed Coordination Project # 9202603. The priority stream segments identified in the Model Watershed Plan and targeted for treatment with this program funding have consistently accounted for fifty percent of the redd counts for the upper Salmon River Basin. Maintaining and enhancing the productive capacity of these segments will continue to provide for diversity of habitat as well as improving the productive quality of the habitat. Streamside cover in these critical reaches have had increased pressure from livestock grazing as federal allotments have been trimmed in time and quantity. This habitat is slowly degrading with increases of sediment in the gravels, more unstable streambanks and increased stream bank erosion, and increases in water temperatures. Biologists have measured water temperatures as high as 70o F during the day with a fifteen degree early morning to late afternoon deviation.

Livestock grazers cannot afford to implement Best Management Practices (BMPs) on their own for the sole purpose of improving fish habitat. Because ninety percent of the habitat is on privately owned land, it is necessary to offer some incentives to get this improved management to provide for fishery benefits.

HYPOTHESIS TO BE TESTED:

The hypothesis is that by increasing the quantity and quality of vegetation along the sixty miles of fair to good quality habitat in the three river basins will increase the egg to smolt production of these waters from the current seven to nine percent to fifteen to twenty percent.

JUSTIFICATION FOR PLANNING:

Directly related to the coordination contract of the model watershed #9202603

METHODS:

Streamside vegetative cover quality and quantity is currently a result of the land use and management treatment. The main land uses in these three watersheds are pasture and hayland. The method used is long term contracting with property owners along the sixty miles of stream to apply Best Management Practices for the maintenance and enhancement of the streamside vegetative cover. This is modeled after the Natural Resources Conservation Service "Great Plains Program", Idaho Soil Conservation Commission's "State Agricultural Water Quality Program" and the Farm Services Agency "Agricultural Conservation Programs

Long Term Agreements". These are time tested methods of planning and getting conservation measures applied on the land for specific objectives. The Best Management Practices to be used are found in the Soil and Water Conservation District Technical Guide or in the Idaho Agricultural Pollution Abatement Plan. The BMPs could include but are not limited to the following:

1. Pasture and Hayland Management
2. Critical Area Treatment
3. Livestock Exclusion
4. Planned Grazing Systems
5. Heavy Use Area Protection
6. Livestock Crossing
7. Stream Bank Protection
8. Fencing
9. Livestock Water Development
10. Proper Grazing Use, Riparian Area

BMPs would be installed using a variable cost-share rate based on a fishery benefit criteria. BPA funding may even be used as match for other funding when the fishery benefits are extremely high.

PLANNED ACTIVITIES

SCHEDULE:

<u>Planning Phase</u>	<u>Start</u> FY96	<u>End</u> FY2002	<u>Subcontractor</u>
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Task Approximately thirty contracts would be developed covering 15,000 acres along forty to sixty miles of stream over the next five years. Practice application would begin immediately and be completed by 2002. The major task would be to get under contract the following land: 1. Land from Lemhi to Leadore. This includes approximately 20 miles of the Lemhi River and about six miles of Big Springs Creek. Big Springs Creek is a tributary to the Lemhi. 2. The land from the mouth of the Pahsimeroi to Hooper Lane. This includes approximately 20 miles of the Pahsimeroi plus numerous spring tributaries. Approximately three miles of this section will be treated by the end of FY 1996. 3. The private land in the East Fork from the IDFG weir to Herd Creek and Herd Creek (tributary of the East Fork of the Salmon River) This would cover about 15 miles of stream. These stream segments were given top priority in the Model Watershed Plan for maintenance and enhancement through streamside vegetative cover improvement.

<u>Implementation Phase</u>	<u>Start</u> FY96	<u>End</u> FY2002	<u>Subcontractor</u> SWCD
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PROJECT COMPLETION DATE:

2005

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

Risks are that you would plan and install the BMPs and the salmon would be extinct before the habitat benefits were achieved. Also inability of cooperating agencies to lend support, landowner reluctance to implement projects, and funding interruptions.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

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

The expected outcome of funding over the next five years would be treatment of seventy-five (75) percent of the priority stream segments to improve the quality and quantity of the streamside vegetative cover. The benefits would be improved spawning and rearing habitat on about sixty miles of stream in the Lemhi, Pahsimeroi and East Fork of the Salmon River watersheds.

Present utilization and conservation potential of target population or area:

Approx 1% of the 1960-65 chinook redds present in the model watershed area.

Assumed historic status of utilization and conservation potential:

960-65 chinook redd counts: Lemhi 1200, Pahsimeroi 700, and the East Fork 775 redds.

Long term expected utilization and conservation potential for target population or habitat:

960-65 chinook redd counts.

Contribution toward long-term goal:

Maintenance and enhancement of habitat for fish in the model watershed area including improvement in habitat quantity and quality, water temp reduction, water quality improvements, reduced sediment levels and fine sediment in stream substrate.

Indirect biological or environmental changes:

Improve stream/riparian habitat benefitting all riparian dependent species

Physical products:

Improvement of approx 60 miles of stream habitat with fencing, grazing systems, instream structure work, riparian vegetation planting and others.

Environmental attributes affected by the project:

Enhanced habitat, reduced water temp, improved substrate conditions and others.

Changes assumed or expected for affected environmental attributes:

Changes will occur at rates of streamside vegetative recovery and stream channel forming processes.

Measure of attribute changes:

Sedimentation will be reduced corresponding to streambank stabilization on 60 miles of habitat. No figures are available currently.

Assessment of effects on project outcomes of critical uncertainty:

Monitoring will be completed on all of the treated stream segments and partially on the untreated segments including photo-documentation, stream habitat type changes, water temp, substrate conditions and bank stability.

Information products:

Quarterly reports monitoring reports newsletters and articles, project area tours and videos.

Coordination outcomes:

This contract is in conjunction with the Idaho Model Watershed Project coordination contract #9202603 which is based on locally based advisory and technical committees and local govt agencies and groups. The Model Watershed Plan is the project guidance.

Stream inventories completed in 1994.

Preliminary project proposals developed in 1994.

Temporary livestock exclusion fencing around redds in Lemhi. Increased awareness and development of project proposals initiated by ranchers for riparian management.

Completed water conservation plan (consolidation and construction of permanent irrigation diversions with fish passage) in cooperation with Bureau of Reclamation and coordinated all land easement negotiations.

MONITORING APPROACH

Monitoring of habitat conditions will continue throughout the project duration to assess sediment levels in stream substrates, water temperatures, stream flows, streambank stability, water quality, and stream/riparian habitat conditions. The IDFG will continue to monitor fish populations in the model watershed area. Stream habitat conditions and riparian vegetative cover quality and quantity is currently a result of the land use (pasture and hayland).

Provisions to monitor population status or habitat quality:

Monitoring of habitat conditions will continue throughout the project duration to assess sediment levels in stream substrates, water temperatures, stream flows, streambank stability, water quality, and stream/riparian habitat conditions. The IDFG will continue to monitor fish populations in the model watershed area.

Data analysis and evaluation:

Monitoring reports will be completed to evaluate the effectiveness of the habitat enhancement projects.

Information feed back to management decisions:

Information will be presented to the model watershed advisory and technical committees to assess the effectiveness of management actions and how to best utilize future funding and habitat enhancement projects. It is difficult to correlate fish populations to habitat changes thus habitat monitoring will be the measurements of effectiveness.

Critical uncertainties affecting project's outcomes:

Establishment and continuation of good working relationships with the local landowners, county commissioners, and the various agency personnel and groups participating is crucial to the continuation of this effort. If the project funding is proposed without the coordination contract and position, the gains to fish and wildlife habitats will most likely fail. The emphasis must be kept to on-the-ground enhancement projects but also must be carried out in a coordinated and systematic way to efficiently utilize to funding.

EVALUATION

It is difficult to correlate fish populations to habitat changes thus habitat monitoring will be the measurements of effectiveness. Monitoring of habitat conditions will continue throughout the project duration to assess sediment levels in stream substrates, water temperatures, stream flows, streambank stability, water quality, and stream/riparian habitat conditions. The IDFG will continue to monitor fish populations in the model watershed area.

Incorporating new information regarding uncertainties:

New information will be discussed in the frequent advisory and technical committee meeting. If changes in the program need to be made, they will take place through the team approach established with these groups.

Increasing public awareness of F&W activities:

The project is already noted region-wide as a successful example of local involvement in addressing fish and wildlife concerns. Project coordination (part of the Idaho Model Watershed Project) does include an effective information component including newsletters, displays, professional presentations, and frequent tours to inform involved entities and the public of habitat enhancements achieved through cooperation.

RELATIONSHIPS

RELATED BPA PROJECT

9306200 Idaho Model Watershed Fish Passage Enhancement

RELATIONSHIP

Provides projects to improve fish migration in the model watershed area. The State of Idaho may also provide cost share for implementation.

9202603 Idaho Model Watershed
Administration/Implementation Support

Provides administrative and technical support for the model watershed work. Implementation funds for specific model watershed projects that are high priority in the watershed plan are included in 9401700. The State of Idaho may also provide cost share for implementation.

RELATED NON-BPA PROJECT

US Bureau of Reclamation

State Agricultural Water Quality Improvement Program.
This funding would become available in 1997 also and could be used to match BPA funding.

RELATIONSHIP

Consolidation of irrigation diversions and enhancement of stream flows through irrigation water management.

Both Lemhi and Custer Soil and Water Conservation Districts have applied to the State of Idaho for funding

OPPORTUNITIES FOR COOPERATION:

The success of this project is tied to continued funding for the Model Watershed Coordination project #9202603. Most importantly is the landowner cooperation to implement projects in high priority stream reaches. It is also dependent on staff support from the Idaho Soil Conservation Commission or from the other technical agencies such as NRCS, BLM, Shoshone Bannock Tribes, Forest Service. These agencies supply the needed technical assistance to develop the Resource Management System plan and then to write and administer the contract. These agencies must have a continued commitment for staff to work with private land owners to improve fish habitat.

COSTS AND FTE

1997 Planned: \$175,000

FUTURE FUNDING NEEDS:

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$350,000	10%	80%	10%
1999	\$400,000	10%	80%	10%
2000	\$400,000	10%	80%	10%
2001	\$350,000	10%	80%	10%
2002	\$350,000	10%	80%	10%

PAST OBLIGATIONS (incl. 1997 if done):

<u>FY</u>	<u>OBLIGATED</u>
1995	\$25,000
1997	\$5,075
TOTAL:	\$30,075

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

<u>FY</u>	<u>OTHER FUNDING SOURCE</u>	<u>AMOUNT</u>	<u>IN-KIND VALUE</u>
1998	Idaho State Ag Water Quality Program, the USFWS Partners for Wildlife Program, Bring Back The Natives Program, local cost-sharing and others	\$150,000	
1999	same as above	\$150,000	
2000	same as above	\$150,000	
2001	same as above	\$150,000	
2002	same as above	\$150,000	

OTHER NON-FINANCIAL SUPPORTERS:

The technical committee is essential to the project success including members from BLM, USFS, IDFG, Idaho DEQ, Shoshone-Bannock Tribes, NRCS, BoR, NMFS, USFWS, and others.

LONGER TERM COSTS:

Project implementation should decrease by 2003 but coordination and operation and maintenance and monitoring will continue for another ten years.

1997 OVERHEAD PERCENT: 10%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:

direct

CONTRACTOR FTE: 1 project implementation specialist

SUBCONTRACTOR FTE: none
