



**U.S. Fish & Wildlife Service**

# **KLAMATH RIVER BASIN CONSERVATION AREA RESTORATION PROGRAM**



**Working to Restore Anadromous  
Fisheries of the Klamath River Basin  
FY 2002 Annual Report**

## *Introduction to the Klamath River Basin Conservation Area Restoration Program*

The Klamath River Basin Fisheries Task Force (Task Force) was established by the Klamath River Basin Fishery Resources Restoration Act of 1986 (P.L. 99-552) to provide recommendations to the Secretary of the Interior on the formulation, establishment, and implementation of a 20-year program to restore the anadromous fish populations of the Klamath River Basin Conservation Area to optimal levels and to maintain such levels. The Klamath River Basin Conservation Area Restoration Program (Klamath River Restoration Program) is administered for the Department of Interior by the U.S. Fish and Wildlife Service office in Yreka, California. Congress authorizes \$1 million per year to implement this program until 2006, when authorization will cease.

To administer the Klamath River Restoration Program, the Yreka Fish and Wildlife Office performs the following functions: [1] provides staff support to the two Federal advisory committees: the Task Force, which provides guidance on implementation of the Klamath River Restoration Program; and the Klamath Fishery Management Council, which provides recommendations on the regulation of harvest; [2] coordinates, funds and assists restoration planning and implementation of restoration projects; [3] monitors and coordinates research evaluating anadromous fish populations; and [4] promotes partnerships that help to leverage additional funding for restoration in the Klamath River Basin. Each year, restoration projects are funded as recommended by the Task Force and using other Fish and Wildlife Service program funds including: 1) Jobs in the Woods Program, 2) Partners for Fish and Wildlife Program, and 3) Section 319(h) of the Clean Water Act (see description of these programs in the inset). This Annual Report summarizes restoration projects that were completed in 2002. Full reports of each project are available from the Yreka Fish and Wildlife Office.

The Jobs in the Woods Program is part of the U.S. Fish and Wildlife Service's contribution to the Northwest Forest Plan to participate in watershed restoration activities in northern California, Oregon, and Washington. The goals are to: 1) Support watershed restoration efforts on nonfederal lands, 2) contribute to the recovery of fish, wildlife, plant species, and their habitats, 3) complement ongoing watershed restoration efforts on federal lands, 4) provide employment and training opportunities to timber-dependent community workers, and 5) support a cooperative approach to watershed restoration.

The Partners for Fish and Wildlife Program is a technical and financial assistance program working with private landowners to restore wetlands, streams and river corridors, fish and wildlife habitats. The Program provides advice on the design and location of potential restoration projects, as well as financial assistance to implement the projects.

From 1995 to 1999, the Task Force was awarded funding by the California Water Resources Control Board under Section 319(h) of the Clean Water Act to conduct water quality restoration projects in the Klamath River Basin.

## California Conservation Corps: Cooperative Lower and Middle Klamath Sub-basin Steelhead and Coho Salmon Habitat Restoration 97-HR-01

The California Conservation Corps (CCC), Klamath Service District was funded on October 1, 1996 by the Klamath River Basin Fisheries Task Force to improve fish habitat along four creeks in the Klamath River watershed. The CCC Klamath Service District was commissioned to plant approximately 6,000 trees on Indian and Clear Creek, revegetate 20 acres of landslides on Bluff Creek, and place 25 rootwads in a one mile section of China Creek. In the winter of 1997 tree planting occurred on Indian Creek and Clear Creek. However, due to the New Years Storm of 1997, stream conditions changed dramatically from the time the proposal was written, making Clear Creek unsuitable for rootwad placement, and the Bluff Creek revegetation sites inaccessible.

In order to compensate for the loss of restoration project sites, the US Forest Service (USFS) and the CCC developed a project to prevent erosion on abandoned roads in the Grider Creek watershed. The Grider Creek Watershed Protection by Hand Crews was created as a replacement project that would benefit salmonids in the mid-Klamath watershed. This project was collaboratively designed by



CCC corpsmembers are shown digging DPD using assorted hand tools. Note water flowing through ditch from spring located on road prism.



The above photo is the finished Diversion Prevention Ditch. The DPD is placed just below the hillside's natural drainage and spans the width of the road cut. The DPD is designed to quickly collect and move water across the road cut, prevent water from flowing down the length of the road. Such occurrence causes gullying, erosion, and could eventually undermine the road completely, delivering massive amounts of sediment to the creek below.

the CCC and USFS personnel. Restoration efforts took place on public lands managed by the Happy Camp Ranger District.

The Grider Creek Watershed Protection by Hand Crews Project was initiated to restore watershed function and processes in the Grider Creek watershed to the greatest extent possible. Road treatments were identified by USFS in the Road Sediment Source Inventory and Risk Analysis for Grider Watershed (Westside II Project- KNF 2002). The CCC provided the crew time necessary to hydrologically decommission two non-system roads and stormproof a segment of Pacific Crest Trail that is located on a section of non-system road. A total of 57 erosion prevention structures were installed among the three sites; six diversion prevention ditches (DPD) and two waterbars on road 46N66.1, 14 DPD's and four waterbars on 46N66.3, and 31 waterbars on a portion of the Pacific Crest Trail (road 45N78A.1). Erosion prevention sites were designed to prevent catastrophic failure of the road prism, thus decreasing the amount of sediment that could potentially be delivered into Grider Creek.

**California Conservation Corps: Riparian Restoration Project at  
Four Locations in the Middle Klamath Sub-basin  
98-HR-05**

The California Conservation Corps (CCC), Klamath Service District was funded in November 1997 by the U.S. Fish and Wildlife Service Klamath River Basin Fisheries Task Force to implement riparian restoration measures on Indian Creek, Clear Creek and Stanza Creek, all in the middle Klamath Sub-basin. The Riparian Restoration Project on Four Locations in the Middle Klamath Sub-basin was a cooperative effort undertaken by the CCC, California Department of Fish and Game, U.S. Forest Service, and the U.S. Fish and Wildlife Service. Restoration efforts took place on lands owned and operated by the U.S. Forest Service. Two major flood events and a fire had left much of Indian Creek, Stanza Creek and Clear Creek devoid of healthy riparian zone and upslope areas. This restoration project, as well as past projects on these creeks, was implemented in order to reduce sedimentation and improve future large woody debris recruitment for development of pools, sorting of spawning gravels and instream cover for depressed populations of salmon and steelhead.

Restoration efforts on Indian Creek, Stanza Creek, and Clear Creek were implemented by CCC crews using hand labor and power tools. Four crews of up to fifteen young men and women logged a total of 960 hours on the stream and unstable up-slope areas. In the end, 11,200 conifer and hardwood seedlings were planted on more than 61 acres of riparian and upslope habitats. At least five miles of salmonid stream habitat will directly benefit from this project. The restoration of Stanza Creek, Clear Creek, and Indian Creek will improve spawning and rearing conditions for coho and Chinook salmon, as well as steelhead.

**Salmon River Restoration Council: Salmon River  
Sub-Basin Strategic Plan  
01-PC-05**

The Salmon River Restoration Council (SRRC) has been working with the U.S. Forest Service (FS) on a Salmon River Restoration Strategy, and with numerous partners on a Salmon River Sub-basin Fire Management Strategy. The Salmon River Sub-basin Restoration Strategy effort has been ongoing since 1997. The SRRC and the FS produced a draft Salmon River Sub-basin Restoration Strategy (Strategy) in December of 1999. Since then, comments and changes have trickled in. The Strategy identified the development of a Fire Management Strategy as a high priority in the sub-basin. As a result, a Fire Management Strategy has been under development since 1999, funded largely by this grant. As part of the Fire Management Strategy, the SRRC developed a Fire Safe Council that meets regularly and has many stakeholders as members. Through the Fire Safe Council and this grant, a Phase I Draft Fire Management Strategy has been completed.



## Salmon River Restoration Council: Salmon River Community Restoration Program 01-PC-10

The Salmon River Restoration Council (S RRC) has performed the following tasks identified in our cooperative agreement for the Salmon River Community Restoration Program (CRP) for fiscal year 2001 (FY 01).

During FY 01, the S RRC continued to enlist community members in a variety of watershed awareness, restoration, and protection activities. The S RRC held a series of E cosystem Awareness Workshops and Volunteer T raining Workdays in the S almon River sub-basin that continued to broaden the awareness and increase the commitment of the S almon River community.

The workshops focused on: 1) fisheries management, 2) fire planning & management, 3) native plant nurseries, 4) watershed education in the schools, 5) forest management, 6) road management, 7) noxious weed control, 8) community watershed education, 9) sub-basin restoration planning, 10) S RRC-annual Community Action

Plan development, 11) river clean-up, and 12) water temperature monitoring. S RRC continued to sponsor an E conomic Development Committee, promoting development of local capacity to perform restoration work. S RRC was represented by staff and community support in a number of project/resource monitoring efforts, restoration strategy planning meetings, meetings with government agencies, and resource user outreach efforts. T wenty grant proposals for restoration work were submitted to public and private funding sources, including



Klamath River Basin Fisheries Task Force Project  
five to the Klamath River Basin Fisheries Task Force.

Community cooperation and support for watershed restoration is expanding and compliments S RRC's work. In the 132 events sponsored by S RRC, community and resource users contributed 212 volunteer person days to help restore the Salmon River sub-basin. At \$10.00 an hour plus the value of implied benefits (at 12.81%), the value of community in-kind service contribution was \$14,834.51 (of which \$5,415.75 was attributed to the CRP in FY 01). Including technical and other services contributed by non-federal agencies, schools, and community members, the total in-kind match for the project period was \$103,355.97.



Above: Road Rehabilitation before

Left: Road Rehabilitation after.



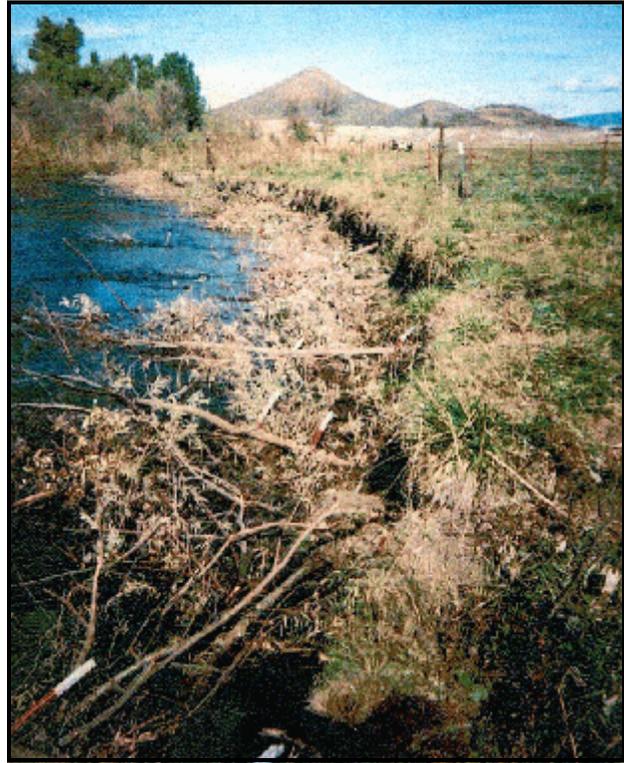
## Great Northern Corporation: Kuck Bioengineered Bank Protection 00-HR-04

Private property restoration work to protect salmon and steelhead along the Shasta River takes many forms. On the Kuck Ranch, previous work included livestock exclusion fencing and limited tree planting. After several years, it became apparent that significant stretches of the excluded area were not significantly improving, primarily due to accelerated erosion resulting from years of livestock impacts and recent river movement.

Temporary hardening of the bank was accomplished using bioengineered techniques, followed by planting of tules and willows.

Bioengineered bank protection will function much like rock rip-rap for about 10 years, by which time it will have rotted. During that period, the unstable areas will be planted and colonized by naturally-recruited riparian

and emergent plants. In all, 1,500 feet of unstable bank were treated with a dense coverage of willow mattresses made up of approximately 6,100 individual bundles of willows 14-12 feet long, and inter-planted with 35 cubic yards of tule root balls. During the late winter following installation of the matting, 1,250 willow whips were planted immediately above the matting. Funding for this project was provided by the Klamath River Basin Fisheries Task Force and the California Department of Fish and Game SB 271 program.



Long vertical bank with matting newly completed.

## Great Northern Corporation: Fiock Bioengineered Bank Protection 00-HR-05



The Klamath River Basin Fisheries Task Force has a history of funding projects along the S hasta River that improve water quality and habitat. Previous projects in this stretch of the S hasta River include riparian exclusion fencing of cattle, fish screen installation, installation of pumps to facilitate removal of diversion dams, and construction of rock groins for bank stabilization.

This bioengineered bank stabilization project protects and begins restoration of 310 feet of eroding riverbank. The placement of willow wattles protects against erosion for 5-10 years, allowing time for the tules and willow whips, planted as part of this project, to establish themselves. This will continue the recovery being achieved by livestock exclusion fencing and continues the commitment by the Task Force to improving water quality and habitat.



**Great Northern Corporation: Shasta River  
Engineering & Design Dam Removal  
00-PC-02**

The Shasta River has long been recognized as one of the most important spawning tributaries in the Klamath Basin. Due to declines in spawner returns of fall Chinook, the Shasta River Coordinated Resource Management Plan (CRMP) was formed. The goal of the Shasta River CRMP was to improve the survival of salmon and steelhead in the Shasta River and its tributaries.

The CRMP has determined that irrigation diversion dams along the Shasta River may be contributing negatively to water quality for fish. The CRMP plans to assist willing landowners with removal of, or improvement to, irrigation diversions to improve water quality. The ultimate goals are to remove impediments to the passage of anadromous fish and reduce the potential for warming of the stream.

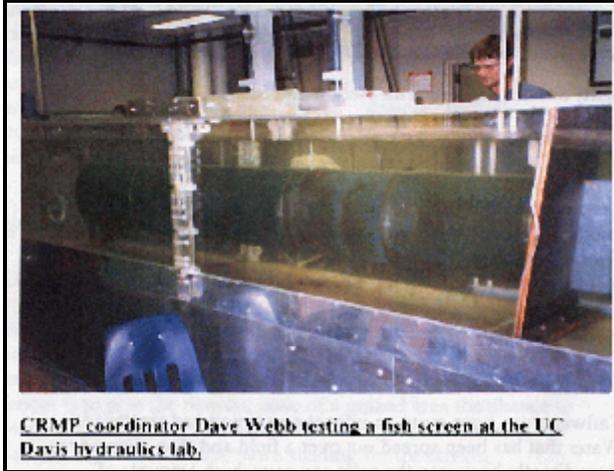
Cascade Earth Sciences (CES) was retained by the Great Northern Corporation, in cooperation with the U.S. Fish and Wildlife Service, to evaluate options for removal or improvement of five of these dams relative to fish passage and screening. The five dams evaluated in this report are: 1) Hole in the Ground Dam, 2) Grenada Irrigation District Dam, 3) Novy Dam, 4) Shasta Water Association Dam, and 5) Norman Flock Dam.

In addition to the five dams evaluated above, CES evaluated improvements to two diversions on the Little Shasta River. These diversions included the following: 1) the Hart Diversion and 2) the Blair Smith Diversion.

**Great Northern Corporation/Shasta CRMP: Shasta River  
CRMP Coordinator  
01-PC-09**

This report is a summary of the efforts and accomplishments of one person employed in the part time staff position for the

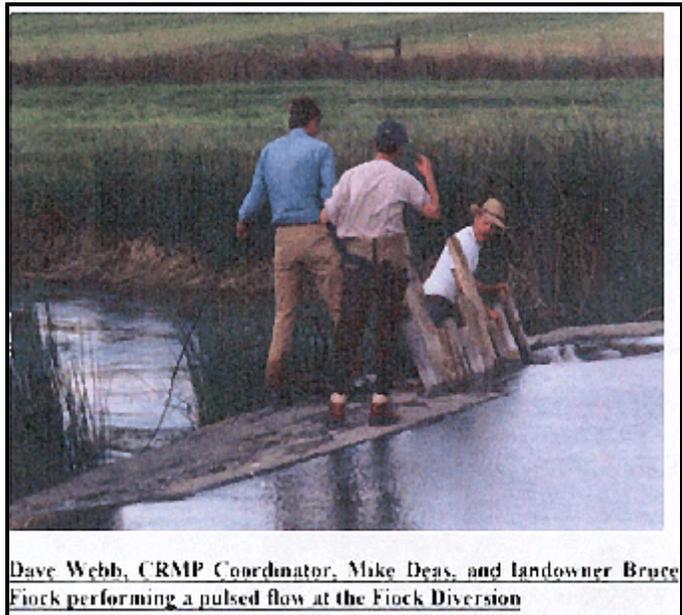
Coordinated Resources Management and Planning (CRMP) group working on salmonid and water quality issues in the Shasta Valley in Northern California during 2001.



CRMP coordinator Dave Webb testing a fish screen at the UC Davis hydraulics lab.

Activities in 2001 included community outreach; ongoing meetings with landowners, agencies and political figures; preparation of materials for inclusion in a planned revision of the Watershed

Restoration Plan; fish screen fabrication; and the preparation and oversight of restoration projects. Funding for this work was provided by the Klamath River Basin Fisheries Task Force, with matching funds for this and additional work provided by the California Department of Fish and Game with SB 271 bond act funds.

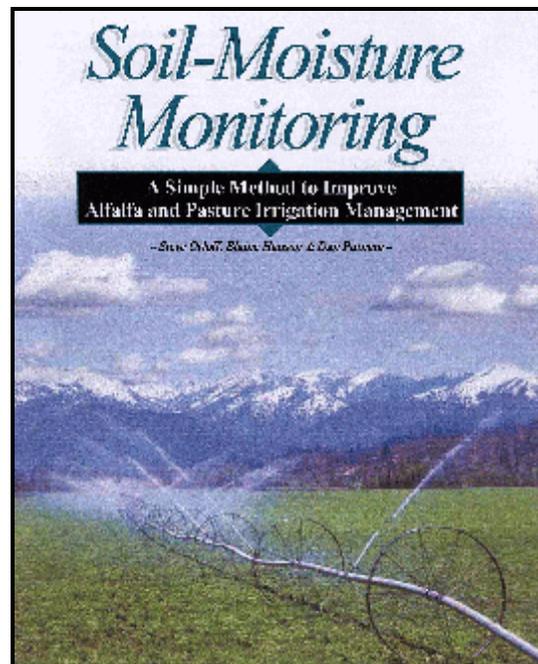


Dave Webb, CRMP Coordinator, Mike Deas, and landowner Bruce Fiock performing a pulsed flow at the Fiock Diversion

## **Siskiyou Resource Conservation District: Water Conservation Through Improved Irrigation Management Practices 99-HR-03**

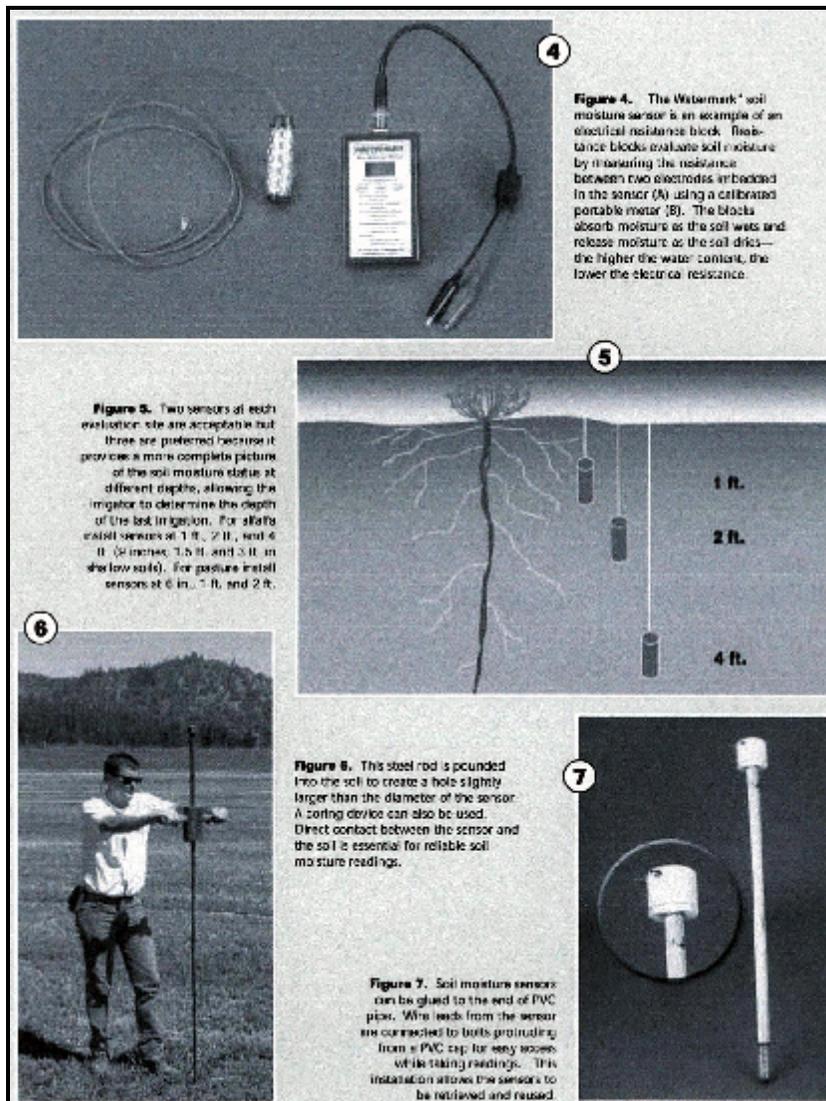
The objectives of this study were as follows:

1. Evaluated the efficiency of existing irrigation systems/practices of 10 different growers per year (20 total).
2. Develop a theoretical optimum irrigation frequency using information on soil type, the irrigation system, and historical crop evapotranspiration data. To compare the theoretical irrigation frequency with current grower practices.
3. Identify areas where irrigation system improvements are warranted.
4. Use a "hands on" approach to inform growers when to irrigate specific fields and the correct amount of water to apply.
5. Train growers and Resource Conservation District employees on the use of soil moisture sensors and irrigation scheduling techniques to conserve irrigation water and optimize irrigation efficiency.
6. Develop a brochure on irrigation scheduling using soil moisture sensors to increase the adoption of improved practices, especially designed for growers that are not cooperators in the project.
7. Hold a workshop at the end of the two-year period for cooperators and project managers to share the results and the technology. (In fact there were two)



Nearly all of the above objectives have been met. The brochure has not been developed within the proposed time line, but the high quality resulting from extra efforts and extra costs

incurred by the UC Extension should make up for the delay. Also, because this is one project that has multiple RCD project coordinators, the training of RCD employees to be able to help growers in the future with this technique (Objective 5) was limited to only one employee who was a participant as well. However, John Bennett, the project technician, has forged long-term relationships with the growers. As it is his business to provide the equipment for this project as well as other agricultural projects, his continued cooperation with growers is assured.



## Siskiyou Resource Conservation District: South Fork Road Erosion Reduction 99-HR-04

The South Fork Road Erosion Reduction Project resulted in the successful “storm-hardening” of 14.4 miles of highly erosive roads with a history of sediment delivery to important habitat for both anadromous salmonids and resident trout. Of this total, 1.9 miles of heavily damaged road and/or road segments not needed for future access by the landowner, Fruit Growers Supply Co., were decommissioned, stabilized, and abandoned. Total project costs were \$88,282, with 92 percent of this going directly for road repairs. Equipment use (including operators) accounted for 74 percent and materials for 18 percent of the cost. The balance was spent in project development, layout, permits, and reporting. The Siskiyou Resource Conservation District (RCD) project management expenses were \$7,797. Priorities for road rehabilitation were identified using an area-wide road erosion inventory, funded by Fruit Growers Supply Co. and Timber Products Co., and implemented by the Northern California Ecosystem Training Center (NORCET). This project is only one in a series of road upgrading efforts by the RCD within high-risk, older upland road networks. Fruit Growers Supply Co. has been our most frequent partner. The Scott River Ranger District of the Klamath National Forest was an active cooperator, and consultation was provided by the Land Committee of the Scott River Watershed Council (Council). Fifty individual drainages or crossings were



Above: Before Erosion Reduction Project  
Below: After Erosion Reduction Project



treated and stabilized. Methods employed included road reshaping and out sloping; removal of outside berms and construction of rolling dips; the removal or resizing of nonfunctional culverts; cleaning of inlets and outlets and rock armoring of culverts; construction and armoring of rock fords; installation of a flat-car bridge and decking at Fox Creek; water barring and out-sloping of decommissioned roads; use of barrier cloth to stabilize unconsolidated fill material; excavation of fill to narrow road running surfaces; and the application of straw mulch and grass erosion seeding. Photo monitoring stations were installed at five major sites. Monitoring of stream sediment using the method, however, has yet to be done. This must be a followup action of both the RCD and Council. The implementation of repairs and the degree of cooperation by Fruit Growers Supply Co. were both more than satisfactory. Problems encountered during the project involved: a) A two year time delay in project completion and some very unrealistic early expectations; b) Despite active outreach to a South Fork landowners group by the Council, only the two industrial timberland companies became project participants; c) Specifications and measurable standards for road repairs were not clearly defined, so an inexperienced or uncooperative operator would have presented a problem for project administration; and, d) The aforementioned sediment monitoring has not been done.

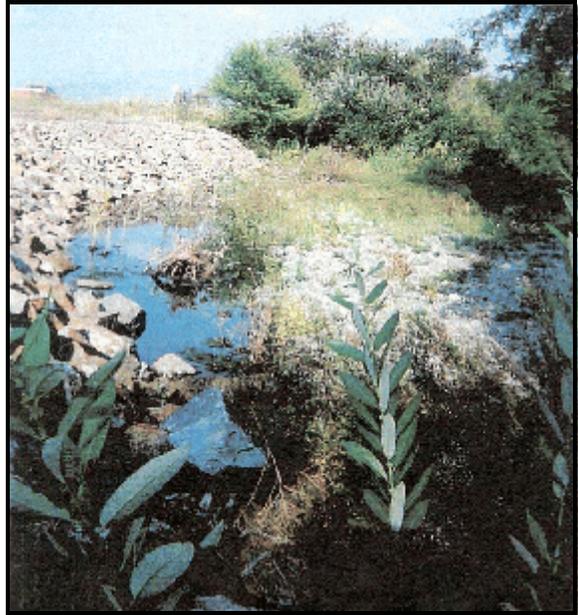
## Siskiyou Resource Conservation District: Patterson Creek Enhancement Project 01-HR-01

The Siskiyou Resource Conservation District (RCD) is a special district run by a board of property owners who are working to address resource-use issues within the Scott River watershed. Agriculture within Scott Valley has focused on beef cattle, wheat and alfalfa production. For over a decade, the Siskiyou RCD and the Scott River Watershed Council (SRWC) have worked together to develop and implement numerous projects that conserve resources as well as improve management of property and livestock in Scott Valley.

The Patterson Creek Enhancement Project focused on a reach within Patterson Creek, a tributary to the Scott River. The reach has year-round flows that become very low in the summer but remain cool. The project reach is currently in good condition, but could be significantly improved and protected with the installation of several project components. Prior to implementation of the project, the reach had good riparian establishment and diversity, but management practices of an existing diversion had created an erosion site that had eroded through the riparian area and



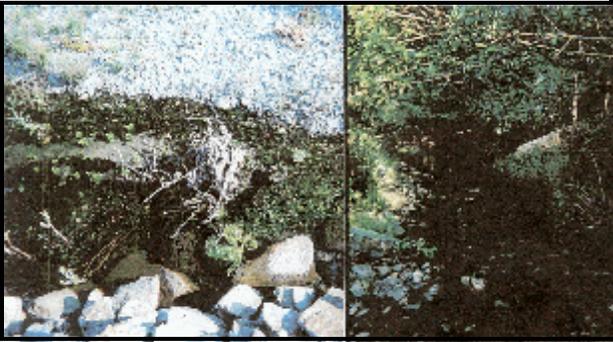
In-stream project is just beginning. Excavator is removing gravel berm from center of channel. The gravel was used to divert water but aided in bank erosion.



Project one year after implementation during August during low flow.

Klamath River Basin Fisheries Task Force Project

was unraveling the stream bank. The previous diversion method was to push up a gravel dam to divert water. The diversion operated for irrigation purposes until early July when flows decreased to the point that irrigation was not possible. From early July through the fall, the diversion was used to provide water for livestock. This required diverting most all of the remaining flows out



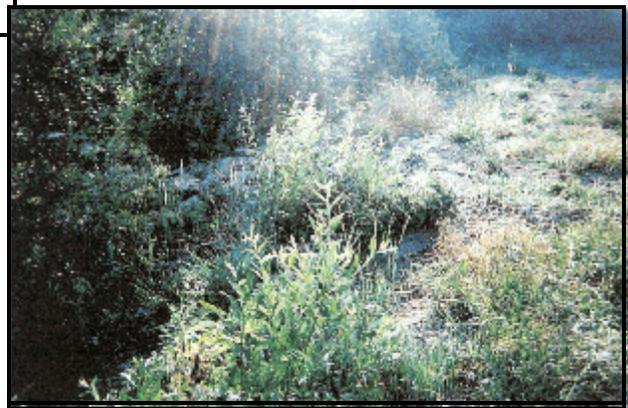
Left: Tree with root wad in developing lateral scour pool placed by the RCD. Right: Typical channel condition below project site with increased summer flows due to implementation of livestock watering system.

Wildlife Service (USFWS), Natural Resources Conservation Service and California Department of Fish and Game. Significant in-kind labor was provided by participating property owners. The project focused on improving water quality and quantity by installing an efficient livestock watering system that eliminated the need to divert surface flows from Patterson Creek



Vortex weir installed at base of stream bank stabilization/ in-stream enhancement work. Fish friendly weir created plunge pool and acts as a diversion structure. Diversion culvert can be seen at top of photo

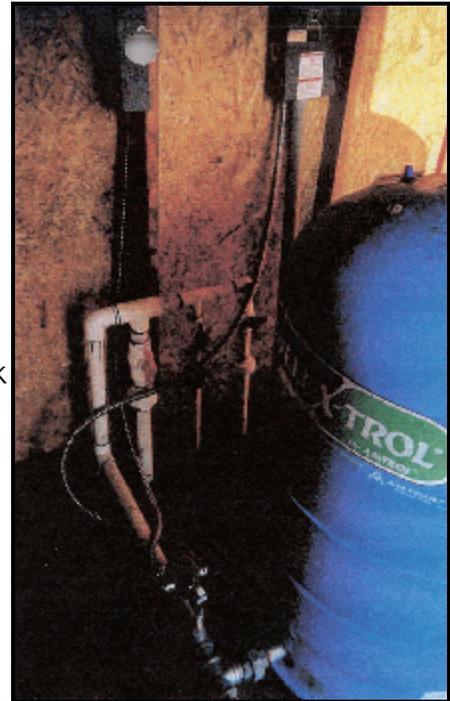
of the stream. This diversion was one of two unscreened diversions in the project reach. The Patterson Creek Enhancement Project was a multi-discipline project that will provide long-term benefit and protection for the project reach of Patterson Creek. The effort was funded by the U.S. Fish and



Riparian plantings located near the weir and in-stream channel work.

Klamath River Basin Fisheries Task Force Project

for livestock water. The project also improved in-stream habitat conditions in Paterson Creek by limiting bank erosion using large boulders and trees with root wads to enhance in-stream conditions. A vortex weir was also installed to create a plunge pool and grade control. This was done to reduce the amount of in-stream activity that previously occurred in order to divert water. Two fish screens were installed on diversions off of Patterson Creek within the project reach to complete the project. The project is an excellent example of using a comprehensive approach to address impacts and improve management. This report focuses on the project phases funded by the US FWS. Phases funded by the US FWS include the installation of the alternative stock watering system and the bank stabilization/in-stream enhancement components of the project.



Above: Pressure tank, panels, switches and valve system in pump house constructed for the livestock watering system.

Below: Typical livestock watering trough set on a concrete pad. Braces prevent tank from moving and damaging plumbing and valve which enter trough through center of the tank.



## **Yurok Tribe: Lower Blue Creek Watershed Restoration and Implementation 00-HR-09**

From August 2001 through the end of October 2001, the Yurok tribe conducted a Watershed Restoration Implementation and Training Program within the Blue Creek drainage basin. Funding was obtained from the U.S. Fish and Wildlife Service, California Department of Fish and Game, and Simpson Timber Company. This is the first year of a multi-year restoration effort in Blue Creek, which is intended to remedy road-related sediment sources from 30 tributary sub-basins, within the Lower Klamath River Basin.

The Blue Creek Watershed Implementation and Training Program employed four Tribal members within the Yurok Tribes Watershed Restoration Department. First Aid and CPR training was provided by the Eureka Red Cross. Advanced training in road restoration layout, site supervision, and heavy equipment operation/coordination was also provided throughout the heavy equipment field season. The training included actual road decommissioning along prioritized roads and stream crossings within the Blue Creek watershed. In the Blue Creek watershed, approximately 1.6 miles of road were decommissioned, preventing an estimated 38,699 cubic yards of road fill material from entering surrounding streams. The roads decommissioned in the Blue Creek watershed during the project include the B-922, B-922A, B-922C, & B-922D.



## U.S. Forest Service, Karuk Tribe, & Yurok Tribe: Mid-Klamath River Chinook Spawner Escapement Survey 01-FP-07

The Forest Service (FS), California Department of Fish and Game (CDFG), Karuk Tribe of California, and the Yurok Tribe conducted Chinook salmon (*Oncorhynchus tshawytscha*) spawning ground surveys within the Salmon River Sub-basin, Scott River Sub-basin, and mid-Klamath River tributaries. Volunteers consisted of the Salmon River Restoration Council and students from local schools. A combination of redd counts and mark-and-recapture carcass counts, were completed to assess spawner escapement and habitat utilization on these water bodies. This report summarized the redd count portion of the survey. A separate report will be prepared by CDFG biologists for the carcass count portion of the survey.



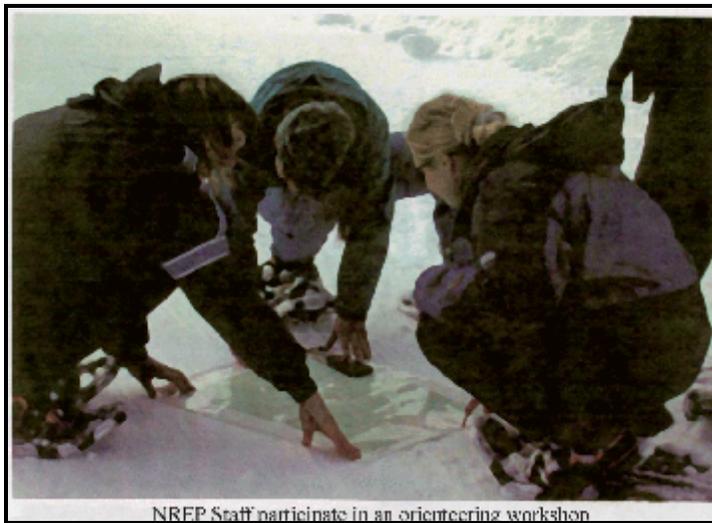
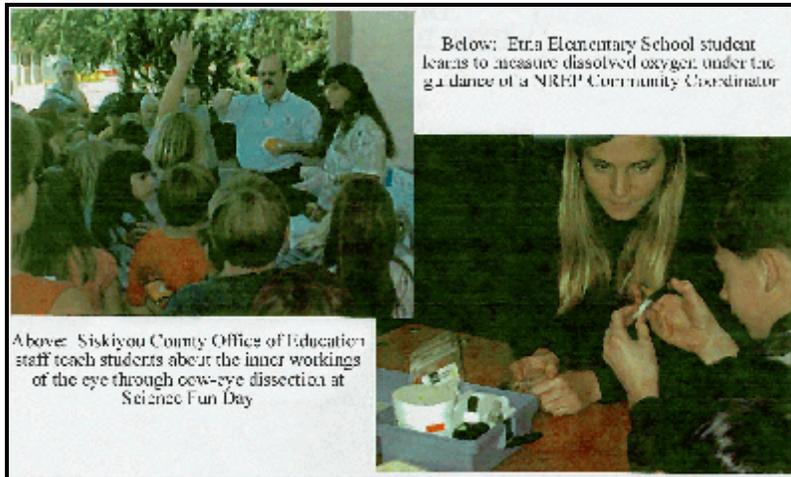
## Siskiyou County Office of Education: Siskiyou Natural Resources Education Program

01-E-03

In 1994, the AmeriCorps Watershed Project (AWP) was created to educate students state wide about the

importance of their local watershed. Siskiyou County was provided with eight AmeriCorps members to work in area schools. Each member worked with teachers and resource professionals to develop real hands-on science projects for students. The member worked with the

community to educate them by inviting them to work with the students on these projects. The members became an integral part of the community. In 2001, we received notice that our AmeriCorps funding would not be renewed for the 2000-2003 funding cycle.



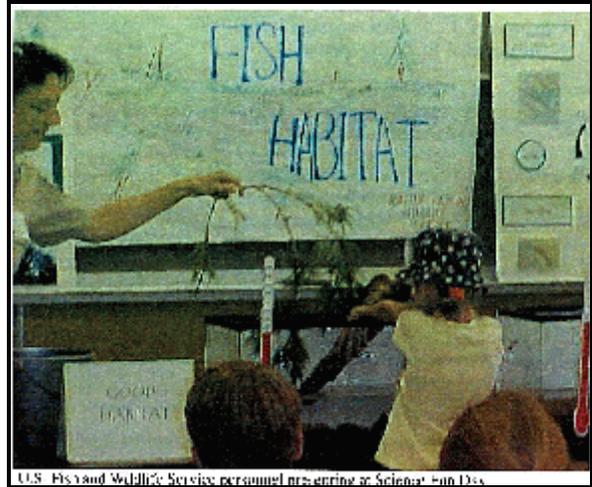
The AWP served Siskiyou County schools for 6 years. It was the uniqueness of the program that enthused schools. Not only did the program provide natural resources and watershed education, but it provided the schools with a person to help plan and implement these programs. During these six years, over 40,000 students and 1,000 teachers were served by the program.

Klamath River Basin Fisheries Task Force Project

The Siskiyou County Office of Education (SCOE) saw it necessary to continue the program after the AmeriCorps program was discontinued.

With funding support from the SCOE, area schools, and the Klamath River Basin Fisheries Task Force, the Natural Resources Education Program (NREP) was created.

The goal was to continue a program similar to the AWP by providing schools with a person to plan and implement natural resources education programs. During our first year (2000/01), we were able to reach our goal of providing a Community Coordinator to each participating school. We served over 11,000 students (many were involved in more than one project), worked with over 200 teachers, and recruited 625 volunteers, with those volunteers donating more than 2,000 hours.



In 2000/01 the NREP program continued its support of the Aquarium Incubator Project, salmon surveys, aquatic insects, water quality studies, and the Student Watershed Forum. We took the lead on Science Fun Day, held at College of the Siskiyou, and many in-class and field activities. With the success of this year's program, NREP plans on expanding its area of service for the 2001/02 year.

**Salmon River Restoration Council: Salmon River Riparian  
Ecosystem Enhancement Project**

**98-JIT W-21**

This project has enlisted private property owners from the community to steward their lands over time in a fashion that is consistent with ecosystem management over the larger landscape. The Salmon River Restoration Council (Council) has provided a crew of displaced timber workers from the community to construct fuel break systems, restore damaged riparian and wetlands habitat, reduce road-caused erosion problems, and perform project inventory and monitoring tasks on several parcels of private property in the Salmon River sub-basin. Restoration activities have taken place on approximately 56 acres. Detailed acreage is in a GIS Report.

Tasks in this project have been performed in consultation with the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the Karuk Tribe of California. This collaborative approach is a major component of a comprehensive fuels reduction program on the Salmon River. This project has expanded community and agency support for the Council and will aid in the recovery and protection of the Salmon River sub-basin.

**Salmon River Restoration Council: Salmon River  
Fuels Reduction Project**

**98-JIT W-21**

This project has enlisted private property owners from the community to steward their lands over time in a fashion that is consistent with ecosystem management over the larger landscape. The Salmon River Restoration Council (SRRC) has provided a crew of displaced timber workers from the community to construct fuel-break systems, restore damaged riparian and wetlands habitat, reduce road-caused erosion problems, and perform project inventory and monitoring tasks on several parcels of private property in the Salmon River sub-basin.

Restoration activities have taken place on approximately 71 acres. Location details are shown in the GIS data attached to the full report.

Tasks in this project have been performed in consultation with the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the Karuk Tribe of California. This collaborative approach is a major component of a comprehensive fuels reduction program on the Salmon River. This project has expanded community and agency support for the SRRC and helped in the recovery and protection of the Salmon River sub-basin.

**Great Northern Corporation: Shasta River Biotechnical Bank  
Stabilization Project  
98-JITW-41**

Long standing livestock impacts to the banks of the Shasta River appear to be a predominant source of problems currently affecting the Shasta, along with the impacts of irrigation water withdrawal and tail-water return. These impacts have resulted in high water temperatures, low levels of dissolved oxygen, excessive sediment load, reduced rearing habitat for salmonids, and reduced instream flows.

The Shasta CRMP is assisting landowners in developing land management plans that minimize impacts to the health of the Shasta River watershed and salmonid habitat. A comprehensive riparian protection rehabilitation effort is underway on the Freeman Ranch. The recent bank stabilization work performed under this agreement was needed to complete the rehabilitation effort. The work accomplished included approximately 470 linear feet of vertical bank protected with the installation of willow matting and the planting of approximately 3,200 willow whips and stakes.



This report was prepared for the  
Klamath River Basin Fisheries Task Force

**U. S. Fish and Wildlife Service**  
**Yreka Fish and Wildlife Office**

For more information see our website at <http://pacific.fws.gov/yreka>

or contact: Phil Detrich or Laurie Simons at  
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