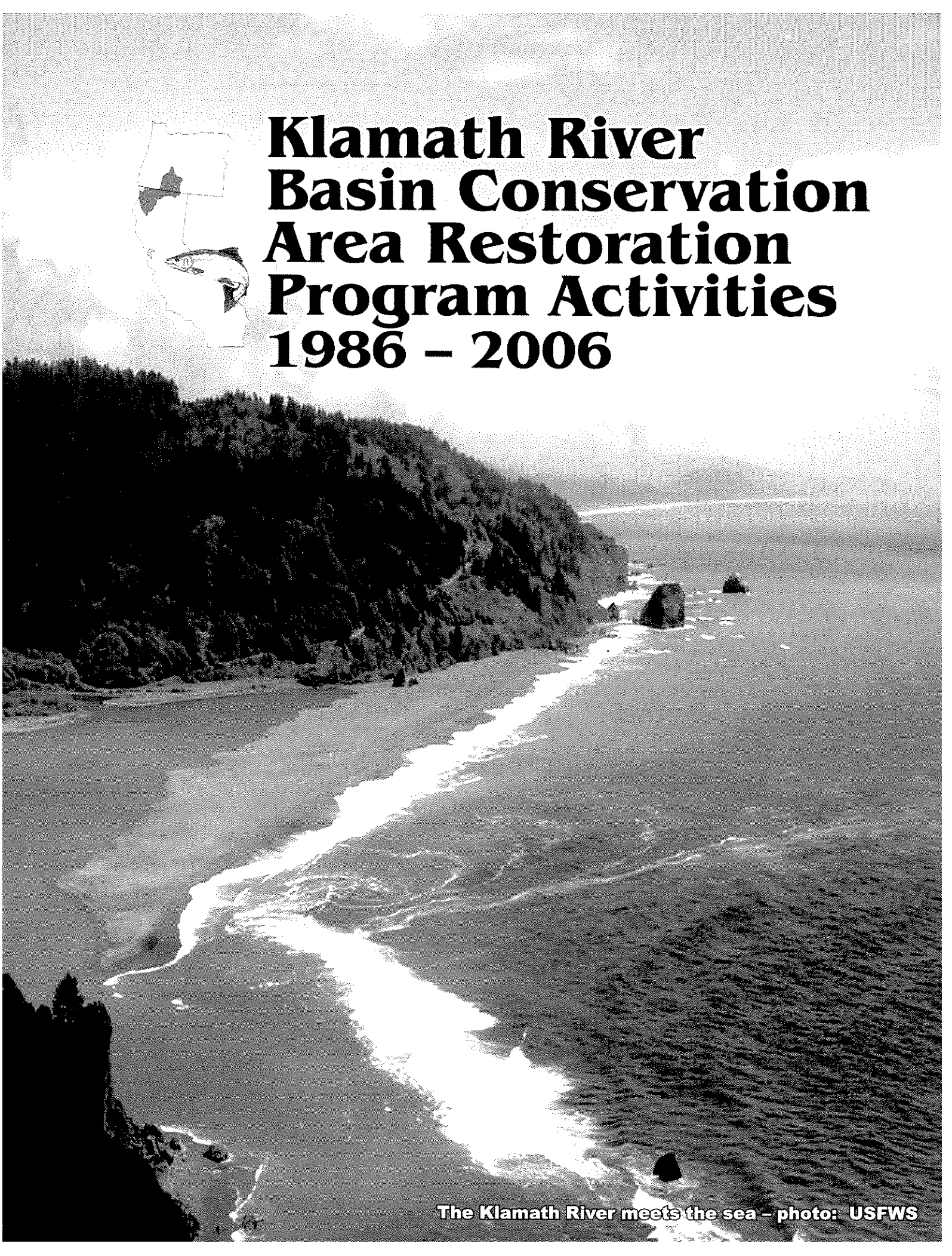


Klamath River Basin Conservation Area Restoration Program Activities 1986 – 2006

The Klamath River meets the sea – photo: USFWS

Program Partners

Photo: Siskiyou RCD

Congress envisioned that the Restoration Program would be implemented in partnership with Federal, Tribal, State, and local agencies. The Klamath Act stated that "50 percent of the cost of the development and implementation of the program must be provided by one or more non-Federal sources," including government, private donations and volunteer labor. The Klamath Task Force built these partnerships in several ways. It funded the five sub-basin co-ordinators, who brought together partners to develop projects, most of which were funded by sources outside the Restoration Program. The assessments, research, and monitoring funded by the Restoration Program allowed partners to collect information needed to develop project proposals that were then funded by other sources. The Restoration Program often granted partial funding to projects, and partners leveraged those funds to get matching grants from other sources.

Next Steps

The legacy of land and water use practices that altered the watershed functions of the Klamath River Basin has left us with much more to be done. Progress made during the 20 years of the Restoration Program provides a firm foundation for continued fishery restoration efforts. However, the total cost for restoring the Klamath River watershed is high relative to funding provided by the Klamath Act. As fishery restoration continues to move forward in the ensuing years, localized planning, education, and outreach will be critical to inform the public about fishery restoration goals and needs.

Photo: Siskiyou RCD

The Task Force's Long Range Plan for the Klamath River Basin Conservation Area Fishery Restoration Program, along with local watershed plans, provide the foundation for future restoration efforts. Fostering of local watershed groups has put into place localized infrastructures in many areas to plan, coordinate, and carry out restoration work. Collectively we have accomplished substantial habitat improvement and acquired a great deal of knowledge and experience from the 386 habitat restoration, education, assessment and research, and planning projects funded by the Restoration Program. Many of the remaining on-the-ground restoration needs are increasingly expensive and complex, and most will require multiple years to complete. Thus, sustained funding over time will be needed to accomplish restoration needs prioritized in the Long Range Plan and in local watershed plans. Examples include improving fish passage at agricultural diversion structures and elsewhere throughout the Basin, repairing dredger-mined channels, repairing or decommissioning forest roads, and reducing forest fuels to reduce fire related sediment input to streams. Fish passage, flow, water quality, and fish disease issues in the mainstem Klamath River also need to be addressed.

It should be noted that aquatic habitat restoration efforts in the Basin have expanded greatly beyond what was provided in the Act, primarily due to the efforts of State, Tribal, and Federal agencies and local groups. Those efforts need to continue and expand. With the continued participation of local communities and landowners, much more can be accomplished.

Assessment and Research

The Secretary of the Interior and the Klamath Task Force agreed that good science was essential to guide the Restoration Program. On-the-ground restoration was accompanied by efforts to understand problems and find better solutions.

Juvenile Fish Sampling -
Photo: Siskiyou RCD

The Restoration Program was one of only a few funding sources in the region for research and monitoring activities. Over the period of the program, 164 assessment and research projects were funded, totaling $4,677,550. The funds were distributed in the following way: 24% was spent on research projects that sought to answer questions using the scientific method for testing hypotheses; 24% was used for monitoring fisheries to gain essential information for Chinook harvest management; 26% was used for one-time assessments of habitat conditions, sediment sources, and anadromous fish populations; and 26% was used for continued monitoring of water quality and quantity, juvenile fish migrations, and fish diseases. This information improved harvest management, and helped define restoration priority areas and optimal treatments to get the "biggest bang for the buck".

Education

Developing and fostering an understanding by the local community of why fisheries and habitat restoration is important at the local level is critical, particularly where the voluntary participation of local landowners is necessary for success. The Klamath Task Force received a wide variety of suggestions from the public on strategies to increase understanding and knowledge of anadromous fish, their benefits, and needs. Some of these ideas were carried out as part of the activities of the sub-basin coordination groups, and others were funded as projects. The Restoration Program funded 47 such projects, totaling $711,303, including community workshops and events, education for young people in schools and camps, conferences, newsletters, displays, videos, and a watershed and fisheries library.

Agency-Landowners Field Trip -
Photo: USFWS

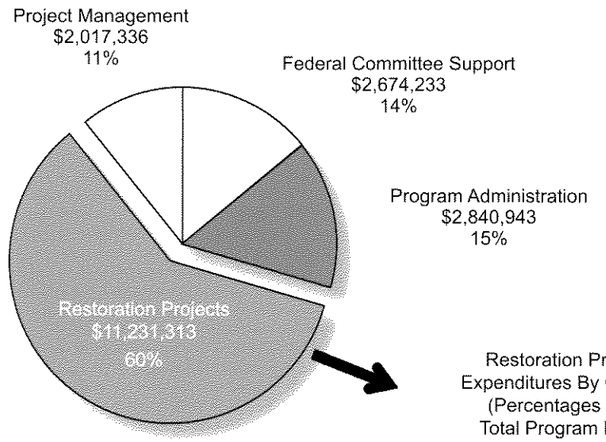
Youth Education project -
Photo: Salmon River Restoration Council

Program Expenditures

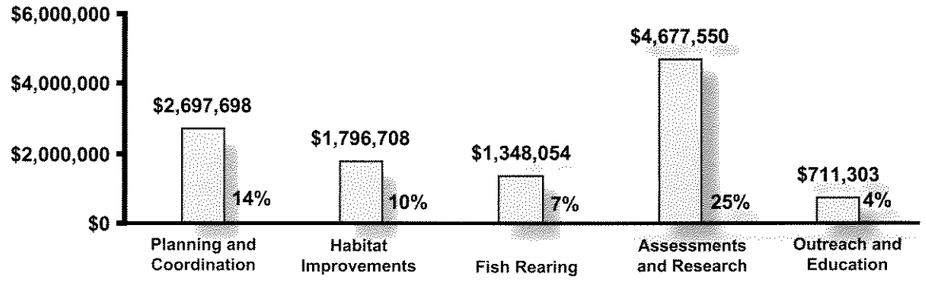
The total amount spent by the Department of the Interior on the Restoration Program through Fiscal Year 2006 was approximately $18,763,825. To administer the Restoration Program, the U.S. Fish and Wildlife Service established the Yreka Fish and Wildlife Office in 1987. In addition to carrying out the basic administration of a Federal program, the Yreka Fish and Wildlife Office managed many aspects of the restoration projects; including soliciting proposals, writing project contracts, obtaining environmental permits, and tracking finances and reports.

The Yreka office also supported the two Federal Advisory Committees (Klamath Task Force and Klamath Council), and ensured they complied with the rules of the Federal Advisory Committee Act. Expenses for the committees included the rental of meeting rooms, recording and distributing minutes, and paying travel costs for non-agency committee members.

The total amount spent on fisheries restoration in the Klamath River Basin by all agencies and groups during the life of the Restoration Program has not been estimated, but it far exceeds the amount spent by the Program itself.



Restoration Projects Expenditures By Category (Percentages are of Total Program Funds)



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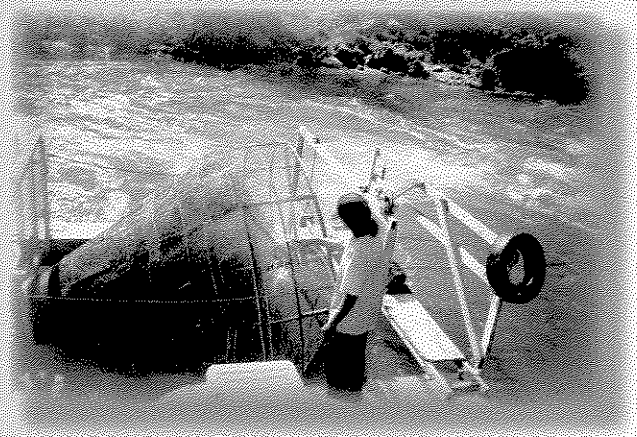

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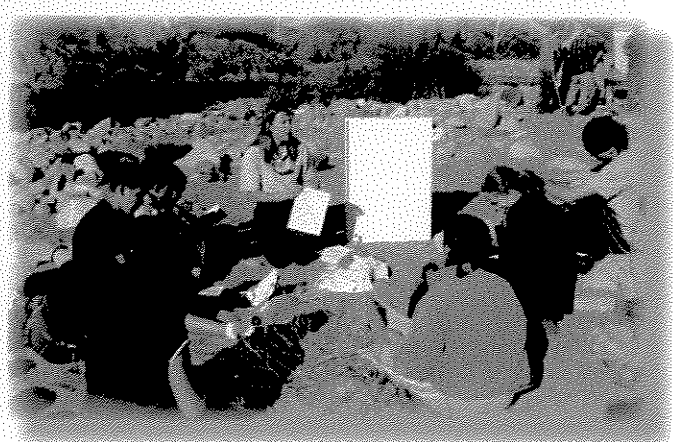

Youth Education project -
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Fisheries and Habitat Improvements

The Restoration Program has funded 84 fisheries and habitat improvement projects totaling $3,169,232. These projects included riparian restoration, in-stream restoration, fish rearing, water conservation and water quality improvements, and upland restoration.

Riparian Restoration

Trees and shrubs along stream corridors provide a host of benefits for fish, including food, cover, and shade. They stabilize stream banks and intercept sediment during floods. The Restoration Program dispersed its first funds for habitat improvement in 1989, for a project to stabilize the banks of Yreka Creek. The program subsequently funded 26 projects to protect and restore riparian areas, totaling $675,401. These were mainly livestock exclusion fences and tree plantings along streams.

Riparian planting project – Photo: USFWS

In-stream Protection and Restoration

Fish Screen on Agricultural Diversion Ditch – Photo: USFWS

Planning activities identified a variety of restoration needs throughout the lower Basin to improve in-stream habitat. These included increasing the number and depth of pools, increasing cover and spawning gravel, removing fish passage barriers, and installing screens to keep fish from entering irrigation ditches. The Restoration Program funded 20 projects to improve in-stream habitat, totaling $466,117.

Fish Rearing

The Klamath Act directed the Secretary of the Interior to *"implement an intensive, short-term stocking program to rebuild run sizes while maintaining the genetic integrity and diversity of the Area's sub basin stocks."* From 1989 to 1997, the Klamath Task Force directed $1,348,054 toward 20 small-scale hatchery and rearing projects in tributaries of the middle and lower Klamath River. Most of these projects collected eggs from spawning Chinook salmon in the Klamath River or selected tributaries, hatched the eggs in small facilities located on tributaries with depleted populations, and released the fish back into those tributaries. Several projects reared juvenile fish rescued from stranding, or hatched at the Iron Gate Hatchery, and released them in Middle Klamath tributaries.

Juvenile Coho Salmon – Photo: Siskiyou RCD

Kidder Creek – Photo: Siskiyou RCD

Water Conservation and Water Quality Improvement

The quality and quantity of water available to fish is an important part of their habitat requirements. The Restoration Program funded eight projects to improve the quality and quantity of water in streams. These projects took place on agricultural lands, and included implementing water conservation practices, and building systems to reuse irrigation water and prevent low quality runoff from entering streams. Total spending in this category was $180,382.

Upland Restoration

During the life of the Restoration Program, it became clear that in-stream habitat improvements would be washed away or buried by sediment unless problems in the uplands were addressed as well. The Restoration Program funded 10 projects, totaling $474,808, to address upland problems. They focused on reducing sediment entering streams by decommissioning or storm-proofing roads, and stabilizing slopes to reduce erosion. One project reduced forest fuels (dead and brushy vegetation) to prevent intense wildfires and resulting erosion.

Decommissioned Road Crossing– Photo: USFWS

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Program Achievements

The Klamath Task Force has promoted the development of fishery restoration solutions at the community level, and identified four types of efforts that were needed:

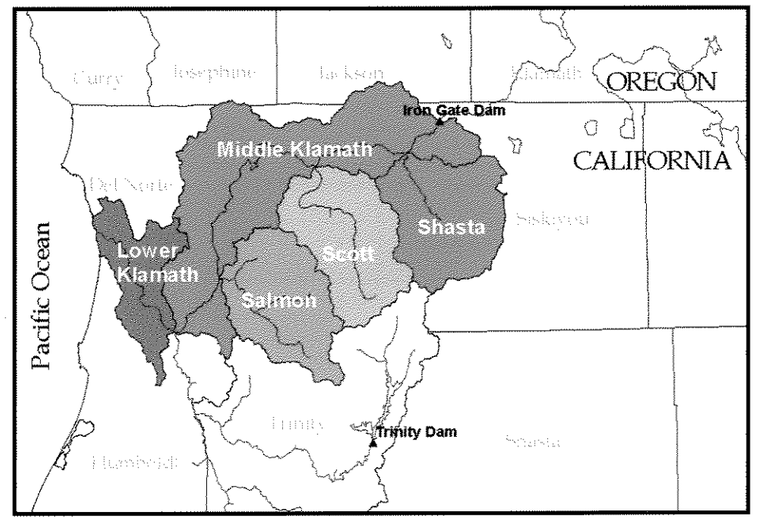
- *Restoration planning and coordination*
- *On-the-ground fisheries and habitat improvements*
- *Assessments and research*
- *Public outreach and education*

The responsibility for implementing the Restoration Program was delegated by the Secretary of the Interior to the U.S Fish and Wildlife Service, with annual advice from the Klamath Task Force. A request for project proposals was issued each year for the above-mentioned types of work. The Klamath Task Force established a Technical Work Group to assist in evaluating and ranking the proposals and providing technical advice. The projects selected for funding were implemented by community groups, Tribes, government agencies, and other partners.

Planning and Coordination

The Klamath Act directed the Klamath Task Force to *"...assist, and coordinate its activities with, Federal, State and local governmental or private anadromous fish restoration projects..."* This resulted in an emphasis on planning and coordination that distinguishes the Restoration Program from other programs.

The Klamath Task Force completed the Long Range Plan for the Klamath River Basin Conservation Area Fishery Restoration Program in 1991. The plan includes more than 200 actions to restore the biological productivity of the Klamath Basin to provide viable fisheries. The Plan is based on a watershed approach, and recognizes that the success of the Restoration Program depends upon the voluntary cooperation of the basin's landowners and water users. It called for ongoing habitat and fish population assessments, and argued that each distinct population group of anadromous fish in the Basin should be protected. In 1999, the Klamath Task Force commissioned a mid-term evaluation of the Restoration Program by an independent consultant, which led to plan revisions in 2004.



Lower Klamath River Sub-Basins

In addition to creating a fishery restoration plan for the entire Restoration Program area, the Klamath Task Force encouraged local watershed groups to develop detailed restoration plans. It designated five sub-basins within the range of anadromous fish, and supported groups to coordinate restoration projects. These groups were the Shasta River Coordinated Resource Management Planning Group (CRMP), the Scott River Watershed Council, the Salmon River Restoration Council, the Karuk Tribe of California, the Mid-Klamath Watershed Council, and the Yurok Tribe. Each group held local meetings, completed a watershed plan, submitted project proposals to a variety of funding sources, published newsletters, and organized outreach activities.

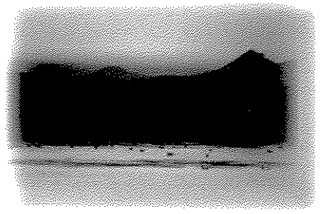
Today, these community groups guide fishery restoration activities in the sub-basins. Total funding given to these groups for planning and coordination over the life of the restoration program was $1,332,479. The sub-basin groups have leveraged funding provided under the Klamath Act to develop broader programs using funds from a variety of Federal, State, Tribal, and private sources. In many cases, this additional funding was considerably larger than the investments made by the Task Force. For example, in 2002 through 2006, nearly $1.9 million was spent by California Department of Fish and Game on a variety of projects in the Shasta River sub-basin.

These Projects were facilitated, at least in part, by planning and coordination funding provided to the Shasta CRMP by the Task Force. Total funding provided by the Task Force for planning, coordination, and restoration projects in the Shasta River sub-basin during that same period was just over $350,000. In addition to the funding provided to the sub-basin groups, $1,365,219 was expended for additional planning and coordination support for the overall restoration program, such as the development of the Klamath River Information System database, GIS support, and other related activities.

Outreach & Education ~

Research & Implementation~

Our Goal, Restoration~



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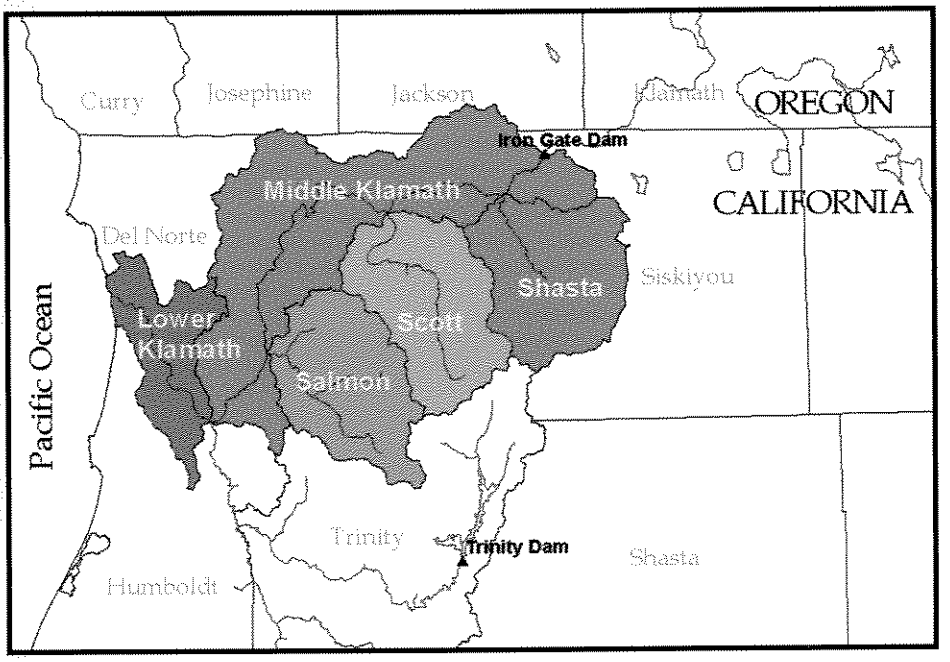


Lower Klamath River Sub-Basins

The Klamath Council
continued

The Klamath Council created a Technical Advisory Team to analyze the annual Klamath fall Chinook spawning run and forecast the abundance and allowable catch for the next season. This team also developed the Klamath Ocean Harvest Model, a sophisticated computer model that analyzes the impacts of proposed fishing regulations along the California and southern Oregon coasts on Klamath River fall Chinook. Based on the Team's technical analyses, the Klamath Council developed an escapement policy to conserve Klamath fall Chinook salmon not spawned within a hatchery. This policy is embodied in fishery management plans as a Conservation Goal that calls for a minimum number of 35,000 fall Chinook to spawn in the wild each year.

Loss of Fish Habitat

Declines in the populations of salmon and other Klamath River fish are attributed to habitat degradation resulting from various land-use practices over the past 150 years.

Gold mining began in the late 1840s. Hydraulic mining techniques, and later large bucket dredges destroyed aquatic habitat and altered stream channel morphology.

Following the gold rush came agriculture, timber harvesting and associated road construction. Timber harvest impacted salmon habitat by increasing erosion on slopes that deposited sediment in streams and blocked fish passage. Agricultural activities expanded as irrigation was developed, and in some locations, irrigation activities contributed to stream degradation.

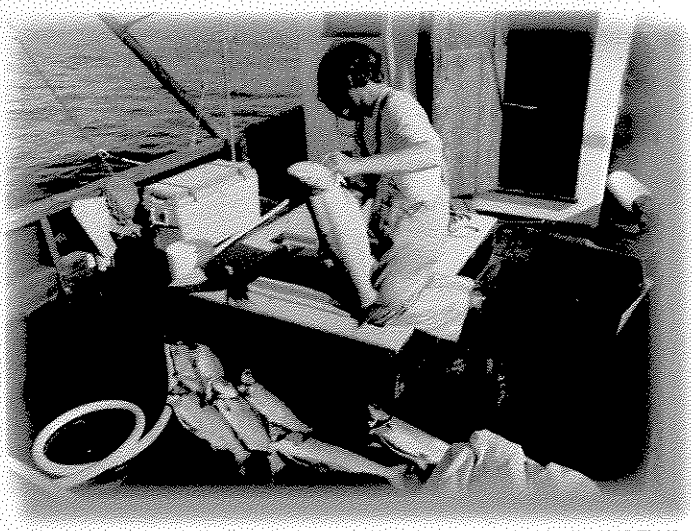
Hydraulic Gold Mining -
Photo: Siskiyou County Historical Society

Log-Skidding Down to the River –
Photo: Siskiyou County Historical Society

There are currently six dams on the mainstem river. Of these facilities, four (J.C. Boyle, Copco 1, Copco 2, and Iron Gate) are primarily for power generation, and two (Link River and Keno) are primarily for meeting irrigation needs. The first dam, Copco 1, was built in 1917, and blocked anadromous fish from reaching a large portion of the Upper Basin. Iron Gate Dam, built in the mid-1960s, is currently the lowermost dam in the system and has no fish passage facilities. Collectively, the series of dams block anadromous fish access to more than 400 miles of habitat in the Upper Klamath Basin.

Klamath River Fisheries
continued

In addition to their cultural and economic significance to Tribes, Klamath River salmon support non-Tribal commercial and sport fisheries in northern California and southern Oregon. Klamath River salmon intermingle in the ocean with salmon stocks from other river systems and are part of the larger coastal salmon fisheries. Salmon from the Klamath River are taken in the ocean by the commercial troll fishery, primarily between Fort Bragg, California, and Coos Bay, Oregon. Anglers pursue salmon and steelhead out in the ocean, and in the river during their spawning migration.



Commercial Fisherman at Work – Photo: USFWS

Fishery Management

Coastal and in-river salmon fisheries have been increasingly restricted to reduce impacts on Klamath salmon, resulting in substantial economic impacts to fishing-dependent communities. Klamath River salmon fisheries are co-managed by Tribal, State, and Federal governments. Fishery management plans that include Klamath salmon are developed by the Pacific Fishery Management Council, an advisory body that provides recommendations on ocean fisheries to the Secretary of Commerce. Fishery co-managers use those recommendations to assist in the development of fishery harvest regulations. Tribal fisheries are managed by each fishing Tribe. Fisheries in ocean waters more than 3 miles from shore are managed by fishery management plans prepared by the Pacific Fishery Management Council and implemented by the National Marine Fisheries Service. The California Fish and Game Commission manages non-Tribal fisheries in ocean waters within 3 miles of the shore, and in the river.

The Klamath Fishery Management Council provided advice to the fishery co-managers on harvest allocations among user groups, and on potential salmon fishery regulations related to Klamath River fish. The Klamath Council, like the Klamath Task Force, made all of its decisions by consensus. Its work in the sphere of harvest management has complemented habitat restoration.

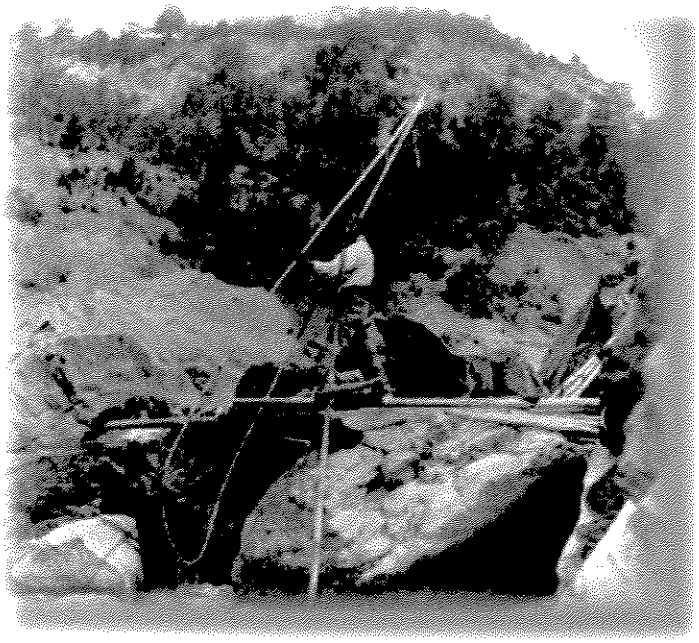
Salmon Traditionally Prepared at a Task Force Reception – Photo: USFWS

The Klamath Council:

- *Completed a "Long-Term Plan for Management of Anadromous Fish Populations of the Klamath River Basin" in 1992*
- *Provided annual advice on harvest managment to the Pacific Fishery Management Council, Tribes, and the States of Oregon and California*
- *Helped resolve harvest allocation issues involving Klamath River salmon*
- *Provided a public forum for salmon harvest issues*

Klamath Fishery Management Council

The Klamath Council was made up of 11 members representing the commercial salmon fishing industries of California and Oregon; the in-river and ocean sport fishing communities; the Pacific Fishery Management Council; the Hoopa Valley and Yurok Tribes; the California Department of Fish and Game, and Oregon Department of Fish and Wildlife; the National Marine Fisheries Service; and the Department of the Interior. The Act specified that the Klamath Council develop a long-term plan for the harvest management of Klamath River anadromous fish, and make annual harvest management recommendations to fishery management entities.

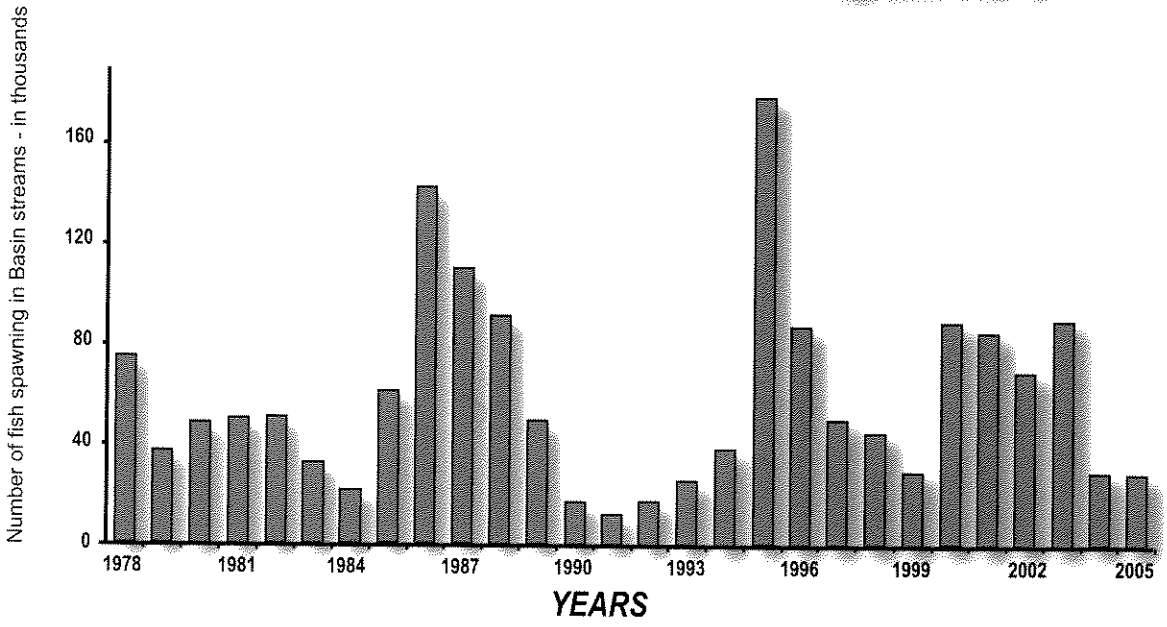


Tribal Fishing Using Dip Nets -
Photo: Siskiyou County Historical Society

Klamath River Fisheries

For thousands of years, the Yurok, Hupa, Karuk, and Klamath Tribes have depended on Klamath River fish for subsistence and ceremonial purposes. The Supreme Court in 1905 (U.S. v. Winans) recognized the importance of salmon to Pacific Northwest Tribes when it concluded that access to the fisheries was "not much less necessary to the existence of the Indians than the atmosphere they breathed."

Klamath River Fall Chinook Spawners



Source: California Department of Fish and Game

Restoration Program Goals Set by Congress

Implement a 20-year program to restore the anadromous fish populations of the Klamath Basin to optimum levels and to maintain such level.

General Program Activities:

- Monitor and coordinate research evaluating the Basin anadromous fish populations, and administer and evaluate the success of program activities.
- Improve and restore Basin habitats, and promote access to blocked habitats to support increased run sizes.
- Rehabilitate problem watersheds in the Basin to reduce negative impacts on fish and fish habitats.
- Improve existing Basin hatcheries and rearing ponds to assist in rebuilding natural populations.
- Implement an intensive, short-term stocking program to rebuild run sizes while maintaining the genetic integrity and diversity of sub-basin stocks.
- Improve upstream and downstream migration by removal of obstacles to fish passage andthe provision of facilities for avoiding obstacles.

The Klamath Act established two Federal Advisory committees to assist the Secretary of the Interior with implementation of the Klamath River Basin Conservation Area Restoration Program (Restoration Program). These were the Klamath River Basin Fisheries Task Force and the Klamath Fishery Management Council.

Klamath River Basin Fisheries Task Force

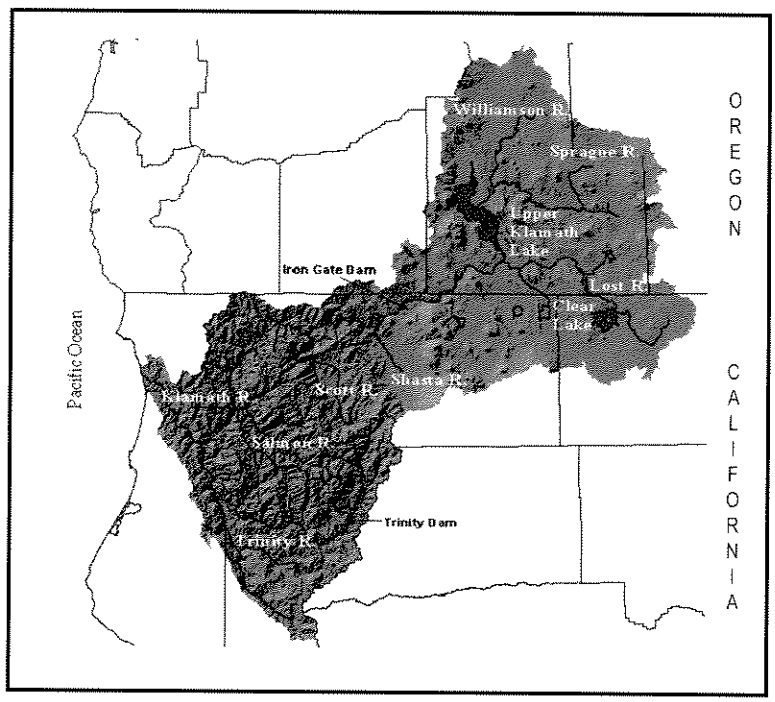
The Klamath Task Force initially was composed of 14 members, with 2 additional members from the Upper Klamath Basin added later. The members represented the California commercial and sport fishing industries; the California Department of Fish and Game and Oregon Department of Fish and Wildlife; the Hoopa Valley, Karuk, Klamath, and Yurok Tribes; the Supervisors of Del Norte, Humboldt, Klamath, Siskiyou, and Trinity Counties; the U.S. Departments of Interior and Agriculture; and the National Marine Fisheries Service. The Klamath Task Force's mission was to make recommendations to the Secretary of the Interior on the implementation of the Restoration Program through consensus-based decision making.

Task Force Meeting at Yurok Tribal Offices in Weitchpec, California – Photo: USFWS.

Klamath River Basin Conservation Area Restoration Program

The Klamath River Basin

The Klamath River is the second longest river in California. It drains an area of about 12,000 square miles while flowing more than 250 miles from Upper Klamath Lake in Oregon, to Requa, California. Its headwaters lie in a high-elevation basin containing wetlands, lakes, streams, forests, and sagebrush. From the upper basin, the Klamath River flows through rocky and forested canyons discharging to its estuary at the Pacific Ocean. Along the way, it is fed by the Shasta, Scott, Salmon, and Trinity rivers, and many smaller rivers and streams. Bountiful aquatic habitats made the Klamath River Basin the third largest salmon-producing watershed on the west coast of the United States, supporting large runs of fall-run and spring-run Chinook salmon, coho salmon, steelhead, sturgeon, eulachon, and Pacific lamprey.



Map of Klamath Basin

"In 1850 in this river during the running season, salmon were so plentiful, according to the reports of the early settlers, that in fording the stream it was with difficulty that they could induce their horses to make the attempt, on account of the river being alive with the finny tribe".

- R.D. Hume

The "Klamath Act"

Long-term declines in Klamath River salmon runs have brought economic hardship and conflict to fishing communities dependent upon those salmon. In response, the United States Congress adopted Public Law 99-552 (the "Klamath Act") in 1986, which established a 20-year-long Federal-State cooperative program to restore anadromous fisheries of the Klamath River Basin. Congress observed that *"floods, the construction and operation of dams, diversions and hydroelectric projects, past mining, timber harvest practices, and road-building have all contributed to the sedimentation, reduced flows, and degraded water quality which has significantly reduced the anadromous fish habitat."* The Act authorized the Secretary of the Interior to spend a total of $21 million (to be appropriated at the rate of $1 million annually through September, 2006) to implement the program.

Spawning Coho Salmon –
Photo: Salmon River Restoration Council

Program Partners

Photo: Siskiyou RCD

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Next Steps

The legacy of land and water use practices that altered the watershed functions of the Klamath River Basin has left us with much more to be done. Progress made during the 20 years of the Restoration Program provides a firm foundation for continued fishery restoration efforts. However, the total cost for restoring the Klamath River watershed is high relative to funding provided by the Klamath Act. As fishery restoration continues to move forward in the ensuing years, localized planning, education, and outreach will be critical to inform the public about fishery restoration goals and needs.

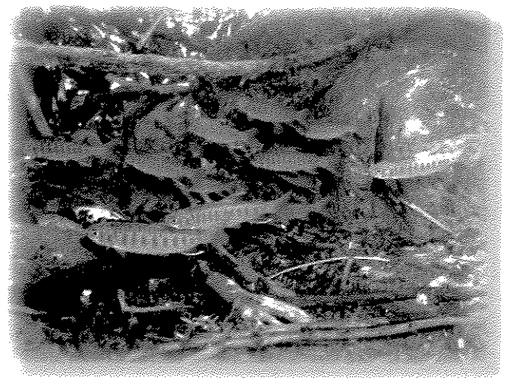


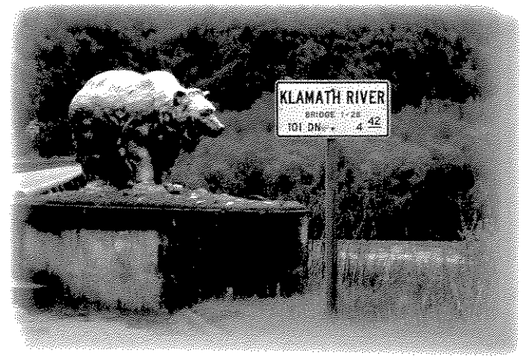
Photo: Siskiyou RCD

The Task Force's Long Range Plan for the Klamath River Basin Conservation Area Fishery Restoration Program, along with local watershed plans, provide the foundation for future restoration efforts. Fostering of local watershed groups has put into place localized infrastructures in many areas to plan, coordinate, and carry out restoration work. Collectively we have accomplished substantial habitat improvement and acquired a great deal of knowledge and experience from the 386 habitat restoration, education, assessment and research, and planning projects funded by the Restoration Program. Many of the remaining on-the-ground restoration needs are increasingly expensive and complex, and most will require multiple years to complete. Thus, sustained funding over time will be needed to accomplish restoration needs prioritized in the Long Range Plan and in local watershed plans. Examples include improving fish passage at agricultural diversion structures and elsewhere throughout the Basin, repairing dredger-mined channels, repairing or decommissioning forest roads, and reducing forest fuels to reduce fire related sediment input to streams. Fish passage, flow, water quality, and fish disease issues in the mainstem Klamath River also need to be addressed.

It should be noted that aquatic habitat restoration efforts in the Basin have expanded greatly beyond what was provided in the Act, primarily due to the efforts of State, Tribal, and Federal agencies and local groups. Those efforts need to continue and expand. With the continued participation of local communities and landowners, much more can be accomplished.

Special thanks to all of the partners who were funded by the Klamath Restoration Program, many of whom are listed here:

California Department of Fish and Game; California Department of Water Resources; California Polytechnic State University; California Salmon, Steelhead, and Trout Restoration Federation; California Conservation Corps; City of Yreka; Collier Interpretive & Information Center; Diane Higgins; Energy and Resource Advocates; Etna Elementary School District; Fruit Growers Supply, Inc.; Great Northern Corporation; Hoopa Valley Tribe; Humboldt State University; Karuk Tribe of California; Klamath Forest Alliance; Klamath River Inter-tribal Fish/Water Commission; Mid-Klamath Watershed Council; Native American Fish and Wildlife Society; Northern California Indian Development Council; Oregon State University; Orleans Rod and Gun Club; Pacific States Marine Fisheries Commission; PacifiCorp; Paula Yoon; Resource Management; Ronnie M. Pierce; Ross Taylor and Associates; Salmon River Restoration Council; Scott River Watershed Council; Shasta River CRMP; Shasta Valley Resource Conservation District; Siskiyou County Office of Education; Siskiyou Resource Conservation District; Tides Center; Tom Hesseldenz and Associates; Tupper Ansel Blake; University of California; U.S. Bureau of Indian Affairs; U.S. Forest Service; U.S. Geological Survey; Utah State University; Water Education Foundation; William Kier Associates; Yreka Union High School; Yurok Tribe; numerous private landowners; and many other volunteers.



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