Upper Colorado River Endangered Fish Recovery Program
and
San Juan River Basin Recovery Implementation Program

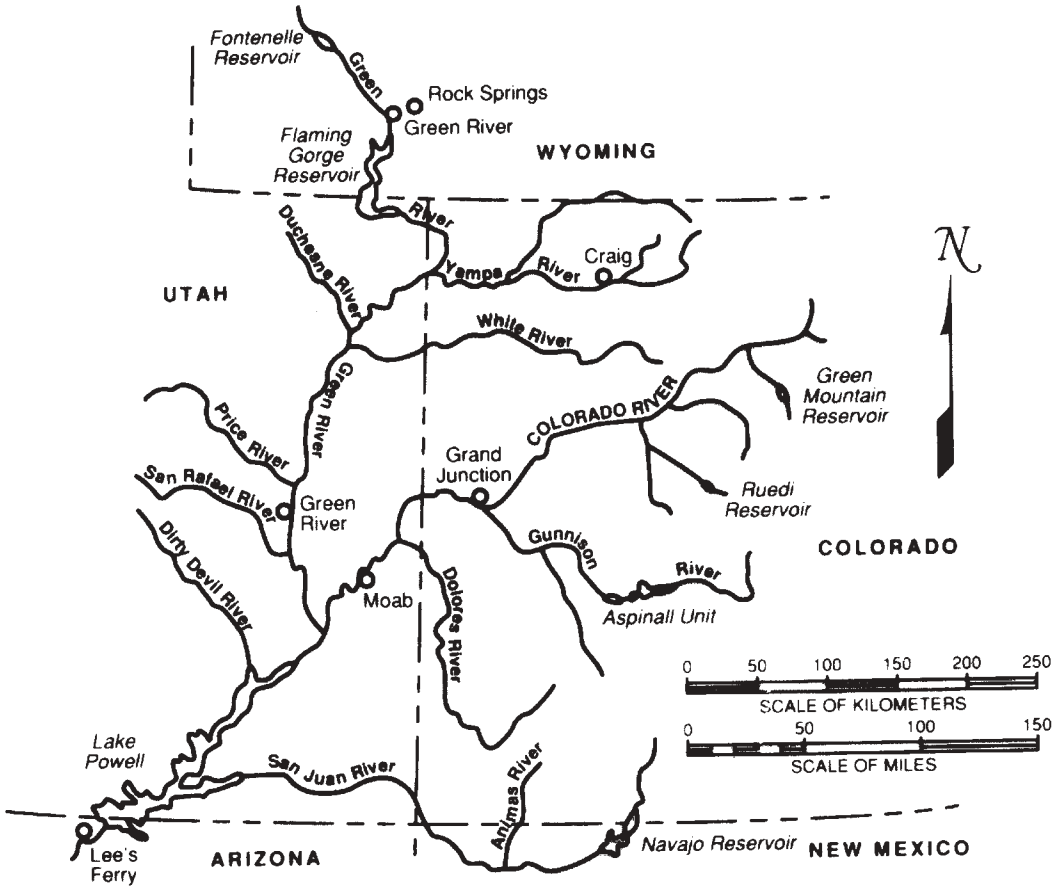
Program Highlights 2004-2005

Preserving the West's Heritage

The Upper Colorado River Endangered Fish Recovery Program and the San Juan River Basin Recovery Implementation Program are national models of cost-effective, public and private partnerships working to recover endangered species while water development continues in compliance with Federal and State laws. The programs' efforts will help ensure that the humpback chub, bonytail, Colorado pikeminnow, and razorback sucker remain an important part of the West's heritage.

Program Highlights is produced annually to provide current information on the progress these programs are making toward recovery of the endangered fishes. This document is not a publication of the U.S. Department of the Interior or its agencies.

Upper Colorado River Basin



The geographic scope of the Upper Colorado River Endangered Fish Recovery Program is the Colorado River and its tributaries in Colorado, Utah, and Wyoming. The geographic scope of the San Juan River Basin Recovery Implementation Program is the San Juan River and its tributaries in Colorado, Utah, and New Mexico.

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Endangered Fish Recovery Programs Continue to Garner Bipartisan Support

The ongoing progress of the Upper Colorado River Endangered Fish Recovery Program and the San Juan River Basin Recovery Implementation Program is recognized by State and Federal leaders.

Department of the Interior

"Meeting the needs of endangered species while respecting the legal rights of water users has been a priority of the Department of the Interior under this Administration. In the Upper Basin, we have had success building multi-stakeholder programs to address the needs of listed species. The Upper Colorado River Endangered Fish Recovery Program [is an example] of how a broad group of stakeholders - including Federal, State, tribal, and private interests- can work together to improve water management on the Colorado [River]." (Excerpted)

Secretary of the Interior Gale Norton, December 11, 2003
Colorado River Water Users Association Annual Meeting
Las Vegas, Nevada

Department of the Interior Secretary Gale Norton frequently cites the Upper Colorado River Endangered Fish Recovery Program as an example of a successful effort to recover endangered species while water development continues.

"The programs [San Juan River Basin and Upper Colorado River] are engaged in the hard, day to day work of recovering endangered species. They provide Endangered Species Act compliance for more than 800 water projects. The Upper Colorado program has become a national model for recovering endangered species while addressing the demand for water development to support growing western communities." (Excerpted)

Secretary of the Interior Gale Norton, January 28, 2005
Colorado Water Congress 47th Annual Convention
Denver, Colorado

COLORADO

"These Recovery Programs work through the strong partnership established between the States of Colorado, New Mexico, Utah, and Wyoming, Indian tribes, water and power developers, environmental interests, and Federal agencies…Endangered fish recovery efforts have been able to proceed while municipal and agricultural water users have put to beneficial use 1.7 million acre-feet of water constituting 756 projects. These projects have relied on the Recovery Programs as regulatory compliance for the Endangered Species Act, and all of this activity has been accomplished without a single lawsuit."

Bill Owens, Governor, State of Colorado

NEW MEXICO

"Congress enacted Public Law 106-392 with strong bipartisan support. Public Law 106-392 authorizes the Federal government to provide up to $46 million of cost sharing for the implementation of capital projects… The four participating States of New Mexico, Colorado, Utah, and Wyoming and their water users will contribute up to an aggregate of $17 million to the programs, and $17 million will be contributed from revenues derived from the sale of Colorado River Storage Project hydroelectric power….The substantial non-Federal cost sharing funds demonstrate the strong commitment and effective partnerships that are present in both the San Juan and Upper Basin programs."

Bill Richardson, Governor, State of New Mexico

UTAH

"The Recovery Program is a mutually supported partnership involving the States of Utah, Colorado, New Mexico, and Wyoming, as well as environmental organizations, power users, water users, and development interests. It is important to note that, because of the cooperation between the partners, water development along the river has continued to proceed without a single lawsuit."

Jon M. Huntsman, Jr., Governor, State of Utah

WYOMING

"These ongoing, highly successful cooperative programs… reflect the proper approach to providing endangered species conservation and recovery within the framework of the existing Federal Endangered Species Act, while concurrently resolving critical conflicts between endangered species recovery and the development and use of Compact-apportioned water resources."

Dave Freudenthal, Governor, State of Wyoming

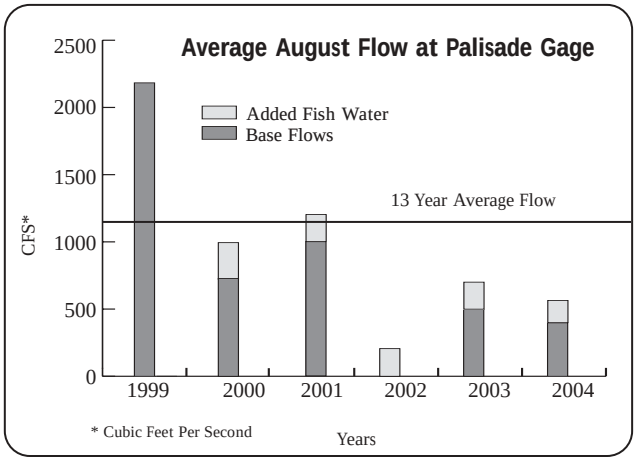
Cooperation Key to Wise Water Management

Wise management of water resources in the arid West is always important, particularly in times of drought. A five-year period of sustained drought continues to have serious impacts on people and wildlife. Water-year 2002 was the driest in more than 100 years in parts of the Upper Colorado River Basin, and drought's grip on the basin remained strong in 2004.

History tells us the effects of drought are persistent and may influence the Colorado River System for several more years. There are indications that the drought has negatively affected certain endangered fish populations and has increased the abundance and distribution of some problematic nonnative fish species in many river reaches.

The Upper Colorado River and San Juan River Endangered Fish Recovery Programs are responding to the challenge of water management by working cooperatively with local, State, Federal, and tribal agencies to meet the needs of people and endangered fish. A key to success is coordination among stakeholders to identify the greatest water needs at any specific time and adjust flows to meet those high-priority needs. Examples of recently implemented measures are:

- The U.S. Fish and Wildlife Service sets flow targets for the endangered fishes to provide sufficient habitat for survival during drought conditions. Contracts and leases are in place to provide supplemental late-summer low flows as needed. Over the past six years, over one-quarter million acre-feet of water has been provided for endangered fish augmentation in the upper basin.



Five years of sustained drought in the 15-Mile Reach of the Colorado River near Grand Junction, Colorado, required the Upper Colorado River Recovery Program to augment base flows with fish water secured through agreements with the U.S. Bureau of Reclamation, Denver Water, the Colorado Water Conservation District, and the State of Colorado.

- The fish ladder at the Redlands Diversion Dam on the Gunnison River in western Colorado is operated to share water shortages while still providing passage to help fish reach river reaches where water is available.

- The U.S. Bureau of Reclamation is near completion of the Grand Valley Water Management Project. With completion of the Highline Lake pump station in 2005 and full automation of the seven canal checks, an estimated 28,000 acre-feet of water will be saved each year.

- The Upper Colorado River Recovery Program partners have agreed to fund 5,000 acre-feet of a 12,000 acre-foot enlargement of Elkhead Reservoir in northwest Colorado to make water available to augment late-summer flows in the Yampa River. The Colorado River Water Conservation District will fund the remaining 7,000 acre- feet, which will help meet future human demands in the Yampa River Basin. Construction is slated to begin in 2005 with completion in 2007.

- State and Federal agencies, Indian tribes and water users continued to work together in 2004 to develop and implement recommendations to share water shortages in Navajo Reservoir and the San Juan River Basin. The organizations included the New Mexico State Engineer, U.S. Bureau of Reclamation, U. S. Bureau of Indian Affairs, U.S. Fish and Wildlife Service, and 10 major water users in New Mexico. This "shortage-sharing agreement" and its accompanying cooperation prevented what could have been catastrophic impacts for all water users, including the endangered fishes. Reservoir releases have been reduced to conserve water during winter. A similar water-sharing agreement is being developed for 2005.

Management of water to provide necessary habitat for the endangered fishes is an integral part of recovery efforts. Although many gains have been made, both Recovery Programs recognize that more needs to be done and they continue to seek innovative solutions to meet water needs.

Colorado State Parks

An agreement to share water shortages in Navajo Reservoir and the San Juan River prevented what could have been catastrophic impacts for all water users, including the endangered fishes, during the drought.

Program Overview

Upper Colorado River Endangered Fish Recovery Program

The Upper Colorado River Endangered Fish Recovery Program is a cooperative partnership created to recover the endangered humpback chub, bonytail, Colorado pikeminnow, and razorback sucker while water development proceeds in accordance with Federal and State laws. The Recovery Program was initiated in 1988 when a cooperative agreement was signed by the Governors of Colorado, Utah, and Wyoming; the Secretary of the Interior; and the Administrator of Western Area Power Administration. These parties signed a 10-year extension of the agreement in 2001, extending the Recovery Program through September 30, 2013.

Program Partners

- State of Colorado
- State of Utah
- State of Wyoming
- Colorado River Energy Distributors Association
- Colorado Water Congress
- National Park Service
- The Nature Conservancy
- U.S. Bureau of Reclamation
- U.S. Fish and Wildlife Service
- Utah Water Users Association
- Western Area Power Administration
- Western Resource Advocates
- Wyoming Water Association

Program Elements

- **Habitat management** includes identifying and acquiring adequate instream flows in accordance with State water laws and interstate compacts.

- **Habitat development** restores habitat to develop spawning and nursery sites, provide fish passage at dams and prevent fish from becoming trapped in diversion canals.

- **Nonnative species and sportfishing** implements actions to reduce the threat of certain nonnative fish species to endangered fish while maintaining sportfishing opportunities.

- **Endangered fish propagation and stocking** involves raising genetically diverse fish in hatcheries and stocking them into the river system.

- **Research, monitoring, and data management** provides critically important information about what the endangered fishes need to survive, grow, and reproduce in the wild. Population monitoring is also an important part of this element to monitor progress toward achieving the recovery goals (see page 8).

Rob Gebhart, Craig Daily Press

Mick Caldwell nets a northern pike in the Yampa River while Chris Smith (left) and Frank Pfeifer look on. The ball at the front of the boat emits a small electric charge that temporarily stuns fish so the U.S. Fish and Wildlife Service crew can catch them as part of a nonnative fish management effort.

Al Bertrand

Razorback suckers are swimming in a new aquarium next to 150 million-year-old dinosaur bones and fossils in Dinosaur National Monument's visitor center. The historic fish add a new dimension to the interpretive messages the monument provides.

San Juan River Basin Recovery Implementation Program

The San Juan River Basin Recovery Implementation Program was established in 1992 to protect and recover Colorado pikeminnow and razorback sucker in the San Juan River Basin while water development proceeds in compliance with all applicable Federal and State laws, including fulfillment of Federal trust responsibilities to Native American tribes. It is anticipated that actions taken under this Recovery Program to recover the Colorado pikeminnow and razorback sucker will also provide benefits to other native fishes in the basin and prevent them from becoming endangered in the future.

Program Partners

- State of Colorado
- State of New Mexico
- Jicarilla Apache Nation
- Navajo Nation
- Southern Ute Indian Tribe
- Ute Mountain Ute Tribe
- U.S. Bureau of Indian Affairs
- U.S. Bureau of Land Management
- U.S. Bureau of Reclamation
- U.S. Fish and Wildlife Service
- Water Development Interests

Program Elements

- **Protection of genetic integrity and management and augmentation of populations** maintains genetically diverse endangered fish species and raises new generations of fish to stock in the river system.
- **Protection, management, and augmentation of habitat** identifies important reaches of the San Juan River for different life stages of the endangered fishes and makes suitable habitat improvements, including providing fish passage around migration barriers.
- **Water quality protection and enhancement** monitors existing water quality conditions, and takes action to diminish or eliminate identified water quality problems that limit recovery.
- **Interactions between native and nonnative fish species** identifies nonnative fish species that most threaten the future of the endangered fishes and implements actions to reduce negative interactions.
- **Monitoring and data management** evaluates status and trends of endangered fishes as well as other native and nonnative species to assure the Recovery Program's overall success in achieving recovery goals (see page 8).

Ernie Teller, U.S. Bureau of Indian Affairs

Local students learn to identify native and nonnative fishes by helping biologists sort the day's catch at the fish passage at the Public Service Company of New Mexico Weir on the San Juan River.

U.S. Fish and Wildlife Service

U.S. Fish and Wildlife Service Biologist Steve Davenport weighs a channel catfish collected during nonnative fish removal efforts on the San Juan River in 2004.

Recovery Goals Provide Measures of Success

The U.S. Fish and Wildlife Service approved final, basin-wide recovery goals for the endangered humpback chub, bonytail, Colorado pikeminnow, and razorback sucker on August 1, 2002. The recovery goals were developed with collaborative input from public, private, and tribal stakeholders, and scientists from the Colorado River Basin. The goals are based on the best available science and provide reasonable assurances that recovery can be achieved and the species protected into the future.

The Upper Colorado River Endangered Fish Recovery Program and the San Juan River Basin Recovery Implementation Program are using this information to expand their efforts to bring the four fish species back from the brink of extinction. The Recovery Programs are stocking hatchery-produced fish, working to manage nonnative fishes, and improving habitat to maintain or restore populations.

Consistent with the governing documents of the Upper Colorado River and San Juan River Recovery Programs, the recovery goals adhere to State and Federal laws related to the Colorado River System ("Law of the River"), including State water law, interstate river compacts, and Federal trust responsibilities.

The recovery goals identify site-specific management actions to minimize or remove threats and specify the numbers of fish that comprise self-sustaining populations (see table below). Downlisting of the fishes from "endangered" to "threatened" and removing the species from Endangered Species Act protection (delisting) may be considered by the U.S. Fish and Wildlife Service once the necessary management actions are achieved and the fish populations reach the required demographic and genetic self-sustaining standards.

The recovery goals are comprehensive, biologically and legally sound, and provide specific criteria for recovery. Research-based adaptive management, however, may lead to future revisions of the recovery criteria. The recovery goals and the status of the species will be formally reviewed at least every five years. Monitoring of fish populations will help guide this process, and population estimates will serve as a starting point against which progress toward recovery is measured.

More information is available at:
mountain-prairie.fws.gov/ea/infopackets
or by calling 303-969-7322, ext. 225.

DEMOGRAPHIC CRITERIA FOR RECOVERY

Humpback Chub

DOWNLISTING

Over a 5-year monitoring period:
- Maintain the six populations ("no net loss")
- One core population in upper basin > 2,100 adults
- One core population in lower basin > 2,100 adults

DELISTING

For 3 years beyond downlisting:
- Maintain the six populations ("no net loss")
- Two core populations in upper basin > 2,100 adults
- One core population in lower basin > 2,100 adults

Bonytail

DOWNLISTING

Over a 5-year monitoring period:
- Maintain reestablished populations in Green River and Upper Colorado River Subbasins, each > 4,400 adults
- Maintain established genetic refuge of adults in lower basin
- Maintain two reestablished populations in lower basin, each > 4,400 adults

DELISTING

For 3 years beyond downlisting:
- Maintain populations in Green River and Upper Colorado River Subbasins, each > 4,400 adults
- Maintain genetic refuge of adults in lower basin
- Maintain two populations in lower basin, each > 4,400 adults

Colorado Pikeminnow

DOWNLISTING

Over a 5-year monitoring period:
- Maintain the upper basin metapopulation
- Maintain populations in Green River and Upper Colorado River Subbasins ("no net loss")
- Green River Subbasin population > 2,600 adults
- Upper Colorado River Subbasin population > 700 adults
- Establish 1,000 age 5+ subadults in San Juan River

DELISTING

For 7 years beyond downlisting:
- Maintain the upper basin metapopulation
- Maintain populations in Green River and Upper Colorado River Subbasins ("no net loss")
- Green River Subbasin population > 2,600 adults
- Upper Colorado River Subbasin population > 1,000 adults OR Upper Colorado River Subbasin population > 700 adults and San Juan River population > 800 adults

Razorback Sucker

DOWNLISTING

Over a 5-year monitoring period:
- Maintain reestablished populations in Green River Subbasin and EITHER in Upper Colorado River Subbasin or in San Juan River Subbasin, each > 5,800 adults
- Maintain established genetic refuge of adults in Lake Mohave
- Maintain two reestablished populations in lower basin, each > 5,800 adults

DELISTING

For 3 years beyond downlisting:
- Maintain populations in Green River Subbasin and EITHER in Upper Colorado River Subbasin OR in San Juan River Subbasin, each > 5,800 adults
- Maintain genetic refuge of adults in Lake Mohave
- Maintain two populations in lower basin, each > 5,800 adults

Water Project Consultations

Under Section 7 of the Endangered Species Act within the Upper Colorado River & San Juan River Recovery Programs

Table 1

Upper Colorado River Endangered Fish Recovery Program
Summary of Section 7 Consultations

(1/1988 through 12/31/2004)

		Historic Depletions	New Depletions	Totals
State	Number of Consultations	Acre-feet/yr	Acre-feet/yr	Acre-feet/yr
Colorado	424	1,032,420.04	139,211.52	1,176,747.57
Utah	40	433,604.74	60,393.95	495,127.77
Wyoming	101	41,176.79	14,752.52	56,878.44
Regional*	238	(regional)	(regional)	0.00
Totals	803	1,507,201.57	214,357.99	1,728,753.78

* Depletions included in historic projects.

Table 2

San Juan River Basin Recovery Implementation Program
Summary of Section 7 Consultations

	Depletions
State	Acre-feet/yr
New Mexico	617,216
Colorado	217,456
Utah	9,140
Arizona	10,010
Total	853,822

Endangered Fish Status

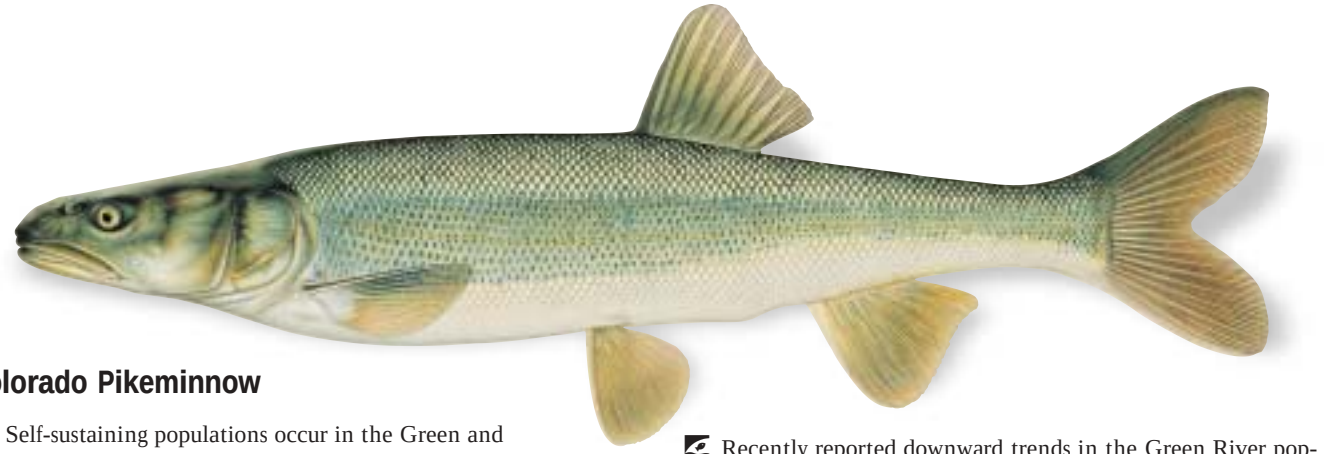
Upper Colorado River and San Juan River Recovery Programs

Humpback Chub

- Five self-sustaining populations occur in canyon-bound river reaches of the Upper Colorado River Basin. About 3,000 adults occur in the Black Rocks and Westwater Canyon populations near the Colorado-Utah border. The Yampa Canyon and Cataract Canyon populations are small, each consisting of a few hundred adults. The population in Desolation/Gray Canyons is estimated at about 1,000 adults.
- Monitoring and research efforts to track and better understand the status of humpback chub populations continue. The U.S. Fish and Wildlife Service and other Recovery Program partners are assessing the reliability of population estimates and sampling methods through adaptive management.
- Recently reported downward trends in some humpback chub populations may be attributed to drought conditions and increases in the abundance and distribution of certain nonnative fishes. The Recovery Program is conducting research and taking management actions to address these impacts.

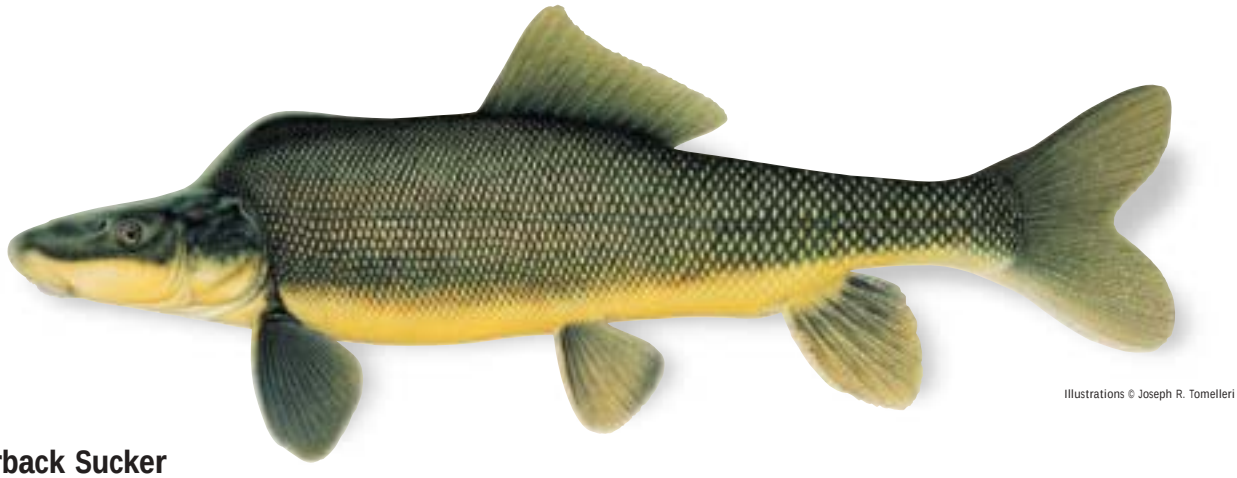
Bonytail

- This is the rarest of the four endangered Colorado River fish species. Before stocking began, the species had essentially disappeared in the Upper Colorado River Basin.
- Stocking efforts continue to reestablish two self-sustaining populations in the upper basin (see recovery goals, page 8).
- Stocked bonytail are being recaptured in several locations throughout the Upper Colorado River Basin. This information will be used to help determine the life-history and habitat requirements of the species.
- More than 250,000 bonytail have been raised and stocked in the Colorado and Green rivers. The Utah Department of Wildlife Resources stocked 6,600 bonytails greater than 6 inches and the Colorado Division of Wildlife stocked over 6,600 bonytails greater than 8 inches in the middle Green River system in fall 2004. These agencies also stocked over 8,200 bonytails greater than 7 inches in the Colorado River.
- Stocking has been expanded to place fish into floodplain wetlands along the Green River to enhance early growth and survival.



Colorado Pikeminnow

- Self-sustaining populations occur in the Green and Colorado river systems of the Upper Colorado River Basin.
- Since 1991, abundance estimates for adult Colorado pikeminnow in the Colorado River have continued to increase; the current population estimate is about 700 adults. Recent estimates in the Green River system place the number of adults at about 2,300.
- Monitoring and research efforts to track and better understand the status of Colorado pikeminnow populations continue. The U.S. Fish and Wildlife Service and other Recovery Program partners are assessing the reliability of population estimates and sampling methods through adaptive management.
- Recently reported downward trends in the Green River population may be attributed to drought conditions and increases in the abundance and distribution of certain nonnative fishes. The Recovery Program is conducting research and taking management actions to address these impacts.
- Over 3,000 juvenile Colorado pikeminnow were stocked in the Colorado and Gunnison rivers of western Colorado during 2004.
- Stocking efforts continue in the San Juan River to achieve requirements of the recovery goals. Over 668,000 juveniles have been stocked since 2002, and approximately 300,000 are scheduled to be stocked in fall 2005.



Razorback Sucker

- Genetic stocks of wild fish have been secured in hatcheries, and their offspring are being stocked to reestablish or enhance wild populations. Recovery goals require two self-sustaining populations in the upper basin (see recovery goals, page 8).
- Over 80,000 subadults have been raised and stocked in the Upper Colorado River Basin to date. In 2004, the Recovery Program stocked over 19,800 subadults. In addition, over 300,000 larvae were stocked in floodplain wetlands along the Green River for research on survival and growth.
- Stocked fish in the Green River have been captured at spawning sites in reproductive condition, and captures of larval razorback suckers suggest that these fish are successfully reproducing.
- Larval razorback suckers were discovered for the first time in the Gunnison River in 2002, and again in 2003, confirming that stocked fish are spawning.
- About 10,850 subadults and adults have been stocked in the San Juan River since 1994.
- Groups of stocked fish in reproductive condition have been observed at spawning sites in the San Juan River, indicating that they are establishing a wild population.
- Larval razorback suckers have been found in the San Juan River every year since 1998, and juveniles were found in 2002 and 2003, confirming that stocked fish are spawning and young are surviving.

Highlights of

Recovery Program Accomplishments

Habitat Management

Upper Colorado River Endangered Fish Recovery Program

- Since 1988, the U.S. Fish and Wildlife Service has consulted on 803 water projects depleting approximately 1,729,000 acre-feet per year in the upper basin using the Recovery Program as a reasonable and prudent alternative. The Service simplified the Section 7 consultation process, and waives depletion charges for water projects that deplete less than 100 acre-feet of water per year.

- The U.S. Fish and Wildlife Service entered a cooperative agreement in January 2005 with the Colorado River Water Conservation District and the States of Colorado and Wyoming to implement the *Management Plan for Endangered Fishes in the Yampa River Basin*. The plan will help ensure that current and future water needs are met for people and endangered fish in the Yampa River Basin in northwest Colorado.

- The Recovery Program will fund 5,000 acre-feet of a 12,000 acre-foot enlargement of Elkhead Reservoir in northwest Colorado to make water available to augment late-summer flows in the Yampa River. The Colorado River Water Conservation District will fund the remaining 7,000 acre-feet, which will help meet future human demands in the Yampa River Basin. Construction is slated to begin in 2005 with completion in 2007.

- A five-year lease for water from Steamboat Lake was completed with Colorado State Parks to support late-summer target flows in the lower Yampa River.

- The Grand Valley Project canal system in western Colorado was retrofitted with internal canal flow control structures and automation, which reduced irrigation diversions by 16% or 45,000 acre-feet in 2002, 12% or 33,000 acre-feet in 2003, and 10% or 29,000 acre-feet in 2004 while meeting all irrigation demands. These improvements play a major role in managing water resources to meet human and endangered fish needs (see page 5).

- The U.S. Bureau of Reclamation is near completion of the Grand Valley Water Management Project. With completion of the Highline Lake pump station in 2005 and full automation of the seven canal checks, additional water will be saved each year.

Debbie Felker

Representatives of cooperating agencies participated in a signing ceremony for agreements to enlarge Elkhead Reservoir. Pictured from left: Bob Muth, Carol DeAngelis, Stephen Mathis, Rod Kuharich, and Russell George.

- Local water irrigation companies, State and Federal agencies formed a work group to implement flow recommendations completed in 2004 for the Duchesne River in northeast Utah. A biological opinion is slated for completion in 2005.

- A final environmental impact statement (EIS) and biological opinion on the operation of Utah's Flaming Gorge Dam on the Green River to meet flow and temperature recommendations for the endangered fishes are slated for completion in spring 2005.

San Juan River Basin Recovery Implementation Program

- A final environmental impact statement (EIS) and biological opinion on operation of New Mexico's Navajo Dam and Reservoir to implement the San Juan River flow recommendations for endangered fish are slated for completion in fall 2005. The proposed preferred alternative in the EIS will fully meet the flow recommendations. The biological opinion will address the issue of "ongoing effects" of reservoir operations.

- The Recovery Program is evaluating the need for further habitat development for all life stages of the endangered fishes.

U.S. Fish and Wildlife Service

Studies are underway to determine if a fish passage, like this one at the Hogback Diversion Dam, are needed elsewhere in the San Juan River.

Habitat Development

Upper Colorado River Endangered Fish Recovery Program

- Construction was completed of a 373-foot-long fish passage at the Grand Valley Project Diversion Dam on the Colorado River near Grand Junction, Colorado. The passage will become fully operational once a fish passage is completed in spring 2006 at the Price-Stubb Diversion Dam five miles downstream. At that time, endangered fish will regain access to 56 miles of critical habitat that has been blocked for nearly a century.

- Fish screens will be constructed in 2005 at the Government Highline and Redlands power canals near Grand Junction, Colorado, to prevent endangered fish from entering the canals.

- Access to razorback sucker nursery habitats was restored at Thunder Ranch near Jensen, Utah, and at the Grand Valley Audubon's Lucy Ferril Ela Wildlife Sanctuary in Grand Junction, Colorado.

- A levee was lowered at the Walter Walker State Wildlife Area on the Colorado River near Grand Junction, Colorado, to enhance and maintain endangered fish habitat. This site has been identified as the "highest use" site for Colorado pikeminnow and razorback suckers in the Upper Colorado River Subbasin.

- Design of a fish screen for the Tusher Wash diversion canal on the Green River in eastern Utah is underway with construction expected to begin in 2006.

San Juan River Basin Recovery Implementation Program

- Flow regimes to restore and maintain native fish habitat are being implemented.

U.S. Fish and Wildlife Service

Endangered fish continue to use the fish passage opened in 2003 at the Public Service Company of New Mexico Weir.

- In 2004, 5 razorback suckers and 4 Colorado pikeminnow used the 400-foot fish passage at the Public Service Company of New Mexico (PNM) Weir. Some of the Colorado pikeminnow that used the passage in 2003 were collected more than once indicating that there was some "fallback" over the PNM Weir after fish were released upstream. All razorback suckers collected in the fish ladder in 2004 were first-time recaptures.

Nonnative Species, Sportfishing, and Public Information/Involvement

Upper Colorado River Endangered Fish Recovery Program

- Efforts increased in 2004 to manage nonnative northern pike and smallmouth bass to reduce their threat to the endangered fishes. Study results showed a depletive effect of some nonnative fish species in certain river reaches. Where feasible, nonnative fish are relocated to area ponds to provide sportfishing opportunities. This work will continue in 2005 (see page 19).

Kim Giffin, The Nature Conservancy

Dillon Monahan (left) was excited to help U.S. Fish and Wildlife Service Biologist Sam Finney place a large northern pike taken from the Yampa River into a pond at the Yampa State Wildlife Area.

- The Recovery Program adopted a policy to identify and implement nonnative fish management actions that are essential to achieve and sustain recovery of the endangered fishes (see page 19).

- A unique barrier net was replaced at Highline Lake State Park in western Colorado. Designed to control escapement of nonnative fish, the net ensures that sportfishing opportunities continue at this popular reservoir.

- The Recovery Program works with local communities to establish interpretive exhibits and participate in public events that offer opportunities to observe and learn about the endangered fishes. The Recovery Program also provides information at major water user conferences in Colorado, Nevada, Utah, and Wyoming.

- The Recovery Program holds public meetings and produces a wide range of educational materials, including newsletters, fact sheets, interpretive exhibits, and a web site. Considerable favorable press concerning the Recovery Program was observed in 2004 in local and regional newspapers in Colorado and Utah.

San Juan River Basin Recovery Implementation Program

- Efforts to control nonnative fishes have been underway since 1998 and are showing signs of success. Some species, such as channel catfish, striped bass, walleye, and common carp are being removed by raft-mounted electrofishing, whereas control of other species, such as red shiner, is being attempted through restoration of natural flow regimes and river habitat.

- The Recovery Program continues to work with both the Navajo Nation and the State of New Mexico to transplant channel catfish from the San Juan River to area lakes to enhance recreational fishing opportunities. Since 1998, over 9,000 channel catfish have been stocked by the New Mexico Department of Game and Fish and the Navajo Nation Department of Fish and Wildlife.

- The fish passage at the Public Service Company of New Mexico Weir continues to provide educational opportunities to students from local schools, the Shiprock Boys and Girls Club, and the local Headstart Program.

- The San Juan River Recovery Implementation Program invites full public participation through public meetings and maintains an updated web site.

U.S. Bureau of Indian Affairs-NIIP

Ernie Teller and Anthony Neskahi (Navajo Nation Department of Fish and Wildlife) load channel catfish into a stocking truck. Channel catfish are transported with cooperation of the New Mexico Department of Game and Fish and the Navajo Nation Fish and Wildlife Department to closed impoundments for recreational fishing.

Recovery Program Web Sites
Upper Colorado River:
ColoradoRiverRecovery.fws.gov
San Juan River: southwest.fws.gov/sjrip

Endangered Fish Propagation and Stocking

Upper Colorado River Endangered Fish Recovery Program

- The Recovery Program is implementing an integrated stocking plan for Colorado and Utah to expedite reestablishment of razorback sucker and bonytail populations.

- The Recovery Program funds operations of four hatchery facilities in Colorado and Utah:
  - The State of Colorado's J.W. Mumma Native Aquatic Species Restoration Facility (Alamosa, Colorado) is raising bonytails and Colorado pikeminnow for future stocking. Biologists stocked over 5,134, 8-inch bonytails in the Colorado River and 6,673 in the Green River during 2004. Facility personnel stocked over 3,000 Colorado pikeminnow in the Colorado and Gunnison rivers in 2004.
  - The State of Utah's Wahweap Fish Hatchery (Big Water, Utah) raised over 9,700 bonytails (greater than 6 inches) in 2004 that were stocked in the Colorado and Green rivers.
  - The Ouray National Fish Hatchery (Ouray, Utah) continues to raise over 27,000 razorback suckers to stock in the Green River. More than 12,000 (10-12 inches long) were stocked in 2004.
  - The Recovery Program's Grand Valley Endangered Fish Facility (Grand Junction, Colorado) raised and stocked 6,258 razorback suckers in the Colorado River and 1,569 in the Green River in 2004. Fish stocked were about 12 inches long.

Water Consult, Engineering and Planning Consultants

Congressional staffers toured the Grand Valley Endangered Fish Facility to learn about endangered species recovery.

San Juan River Basin Recovery Implementation Program

- The San Juan River Biology Committee finalized genetics and augmentation plans for both the Colorado pikeminnow and the razorback sucker in 2003. These plans outline key specifics for the population augmentation efforts, including the size and number of fish that will be stocked to help achieve the self-sustaining population numbers needed to meet the recovery goals (see page 8).

- To date, about 10,850 subadult and adult razorback suckers have been stocked in the San Juan River. Larval razorback suckers, which have been found in the river for the last seven years, indicate that previously stocked fish are surviving and spawning at separate locations in the river.

- Since 2002, over 668,000 juvenile Colorado pikeminnow have been stocked in the San Juan River, and about 300,000 are scheduled to be stocked in fall 2005.

U.S. Bureau of Indian Affairs-NIIP

U.S. Fish and Wildlife Service Biologist Jason Davis stocks young Colorado pikeminnow in the San Juan River.

Research, Monitoring, and Data Management

Upper Colorado River Endangered Fish Recovery Program

- Collections of young razorback suckers and Colorado pikeminnow in the Green and Yampa rivers were used to help manage releases from Flaming Gorge Dam. Seasonal releases from the dam are patterned to enhance habitat conditions for endangered fishes.

- Cooperative efforts by State, Federal, and private agencies resulted in obtaining current and reliable abundance estimates for endangered fish populations. In 2004, mark-recapture population estimates were conducted for populations of Colorado pikeminnow in the Colorado River, and for humpback chub in the Yampa, Green, and Colorado rivers. Results are used to measure progress toward achieving recovery criteria for self-sustaining populations (see page 8).

- Data presented at an August 2004 population estimates workshop will be used to guide future research and management. Development of an overall framework for research on environmental variables and life-history traits influencing Colorado pikeminnow and humpback chub populations will be a priority beginning in 2005.

U.S. Fish and Wildlife Service

U.S. Fish and Wildlife Service Biologist Matt Toner collects data on a humpback chub in Black Rocks in western Colorado for population estimate analysis.

San Juan River Basin Recovery Implementation Program

- Studies to evaluate the success of Colorado pikeminnow stocking efforts continued in 2004 to determine protocols that will result in higher survival and retention of stocked fish.

- The Recovery Program is integrating monitoring data collected during 1999 through 2003 into a final report slated for completion in 2005. The monitoring program documents the response of the physical and biological components to the observed flow regime. The results will be used to evaluate and update flow recommendations as well as the standardized monitoring and long-range plans.

- During 2005, a peer review panel will continue to help the Biology Committee integrate research findings and monitoring data to assess response of the endangered fishes and habitats to Recovery Program activities, including flow recommendation implementation, stocking, and nonnative species control.

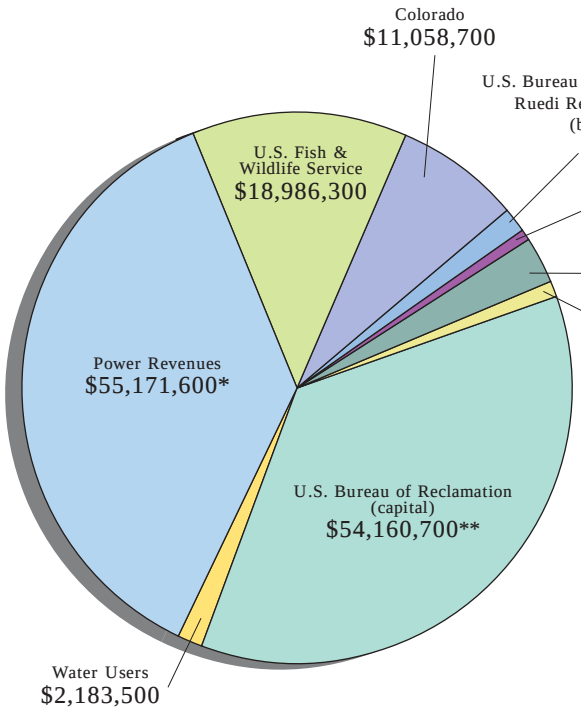
- The U.S. Bureau of Reclamation, in coordination with the Hydrology Committee, completed development of the Third Generation San Juan Recovery Implementation Program Hydrology Model in 2004. Testing of the model is scheduled to be completed in 2005. The model will allow better evaluation of flows in the San Juan River to benefit the endangered fishes.

Expenditures

Upper Colorado River Endangered Fish Recovery Program

Total Agency Contributions = $150,262,900 (FY 1989-2005)

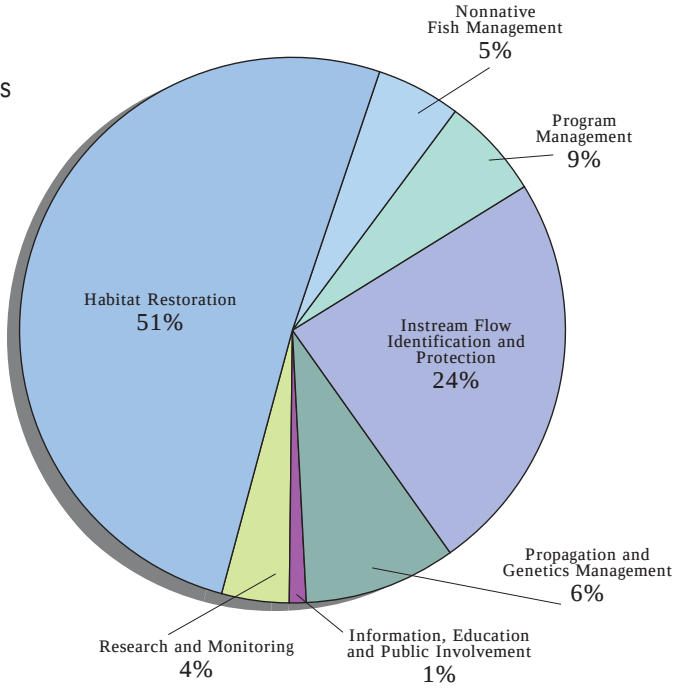
Agency Contributions
(FY 1989-2005)



* *(Includes capital appropriations beginning FY 2001)*

** *(Includes Reclamation capital appropriation of $20,979,700 under ESA authorization prior to FY 1999. FY 1999-2005 appropriation under PL 106-392=$33,181,000)*

Projected Expenditures
by Category
(FY 2005 only)



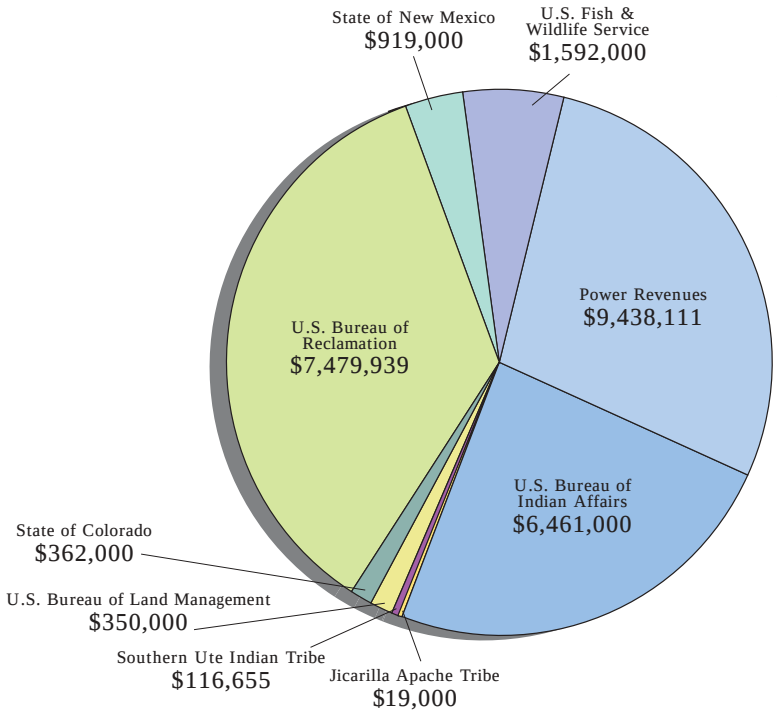
Expenditures

San Juan River Basin Recovery Implementation Program

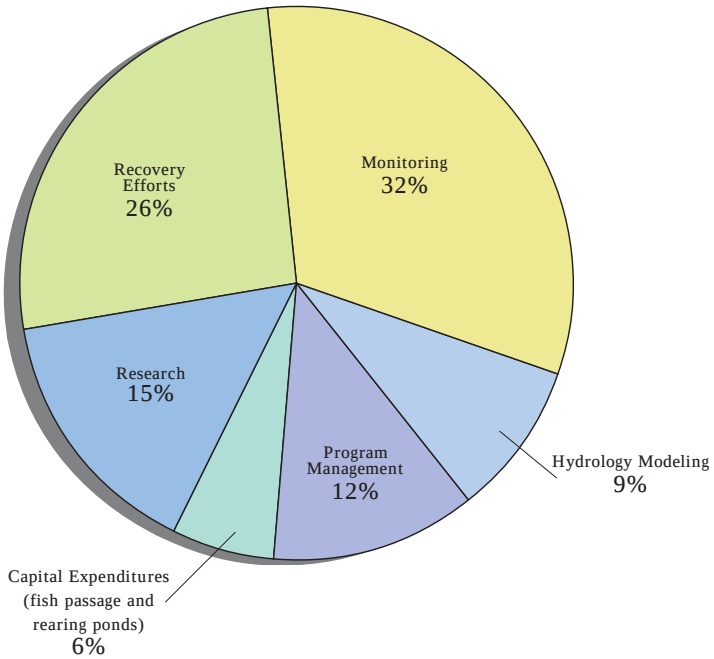
Total Agency Contributions = $26,737,705 (FY 1992-2005)

(Not including in-kind contributions)

Agency Contributions
(FY 1992-2005)



Projected Expenditures
by Category
(FY 2005 only)



Fish Passage Provides Access to River Habitat Blocked for Nearly a Century

Nearly a century ago, one of the nation's largest irrigation projects was completed to provide water to cultivate 50,000 acres in the Grand Valley on Colorado's western slope. The unusual, concrete roller dam is 15 feet high and spans 546 feet across the Colorado River in Debeque Canyon about 8 miles east of Palisade, Colorado. The level of the river behind the Grand Valley Project Diversion Dam, also known as the Roller Dam, is controlled by raising or lowering large steel cylinders, called rollers.

Unique in design, the Roller Dam is modeled after an experimental German design. According to an article in the *Grand Valley Gazette**, the rollers were fabricated in Germany under the direction of engineers in that country familiar with the necessary specifications. The German vessel carrying those vital parts to the United States met an untimely fate at the hands of a British warship. The German ship – and the rollers for the dam – ended up on the bottom of the Atlantic Ocean. New rollers were fabricated in the United States and the dam was completed in 1916.

Until this year, the dam consisted of six roller gates that are each 70 feet long by 10 feet in diameter and one sluiceway that is 60 feet wide with a roller gate that is 15 feet high. Each gate operates independently with a massive cog and chain drive system to control the amount of water that passes over the dam.

This year, the roller located next to Interstate 70 was raised and a 12 foot wide notch was cut in the dam's concrete crest to facilitate construction of a 373 foot long concrete fish passage. It took nine months and 2,800 cubic yards of concrete

Bureau of Reclamation

The Grand Valley Project Diversion Dam was completed in 1916.

Debbie Felker

The new fish passage under construction in May 2004.

(enough to fill 350 concrete trucks) to construct the passage which is the largest of its type in the Colorado River Basin. The Upper Colorado River Endangered Fish Recovery Program funded the $4.5 million construction project.

The fish passage is a cooperative effort of the Grand Valley Water Users Association and the Recovery Program. The U.S. Bureau of Reclamation designed and oversaw construction. The U.S. Fish and Wildlife Service will operate the ladder.

The fish passage will become fully operational once a fish passage is completed at the Price-Stubb Diversion Dam which is 5 miles downstream. Construction is scheduled to begin in winter 2005 with completion in spring 2006. At that time, endangered fish will regain access to 56 miles of critical habitat that has been blocked for nearly a century.

The Grand Valley Project Diversion Dam is part of the larger Grand Valley Project -- a unique water delivery system that includes the dam which diverts irrigation water from the Colorado River, a power plant, two pumping plants, two canal systems totaling 91 miles, 166 miles of laterals and 113 miles of drains. Laterals deliver water from the main canals directly to the intended recipients. Drains return unused water back to the river.

"The vitality of the entire Grand Valley remains dependent on the continued successful operation of the Roller Dam and of the Grand Valley Project," said Dick Proctor, manager, Grand Valley Water Users' Association.

**Grand Valley Gazette – A Journal of Mesa County History, Issue 3, November, December, January -- 1975-76.*

Progress Made to Manage Nonnative Fish

Negative interactions with certain warmwater nonnative fish species have contributed to declines in endangered and other native fish populations. Scientific evidence demonstrates that northern pike, smallmouth bass and channel catfish are nonnative fish species that pose significant threats to survival of endangered fish because they prey upon them and compete for food and space.

U.S. Fish and Wildlife Service

Kim Giffin of the Nature Conservancy's Carpenter Ranch, was amazed at the size of northern pike that biologists removed from the Yampa River.

For the past several years, the Upper Colorado River and San Juan River Recovery Programs have been working cooperatively with their State and Federal partners to identify management actions to minimize the threat of nonnative fishes to survival of the endangered fishes.

In 2004, the Upper Colorado River Recovery Program revised its nonnative fish management program using what was learned in 2002 and 2003. Biologists from the States of Colorado and Utah, U.S. Fish and Wildlife Service, and Colorado State University conducted work in 480 miles of sections of the Colorado, Green, and Yampa rivers in Colorado and Utah to reduce the abundance of northern pike and smallmouth bass. Efforts to manage channel catfish continued in Yampa Canyon, where effective removal has been demonstrated, but were postponed in other river reaches until methods to improve sampling efficiency are developed.

Management of northern pike in the Yampa and Green rivers in 2004 again showed signs of success. Biologists reported a 60 to 68 percent within-year decrease in the abundance of northern pike in the targeted river sections. Looking ahead to 2005, biologists will implement projects to determine if these reductions will endure, or if northern pike populations will rebound as fish are replaced through natural production or movement into the targeted river sections from upstream areas.

Efforts in 2004 to manage smallmouth bass had mixed results. Depending on the section of river and methods being employed, within-year reductions in numbers of smallmouth bass ranged from 8 to 69 percent. To improve the overall catch rates in 2005, biologists will use different sampling methods to increase capture efficiency. These changes will include the use of new sampling gear to collect fish more effectively in shallow-water habitats and during times of low river flows, extending the sampling period into the fall when smallmouth bass are more vulnerable to capture, and expanding management efforts to include smaller smallmouth bass.

The San Juan River Recovery Program has been managing channel catfish since 1996, with more intensified removal sampling beginning in 2001. Results indicate that those efforts have successfully reduced the river-wide abundance of channel catfish to the lowest level ever observed, changing the size structure of the channel catfish population to one now dominated by juvenile fish, thereby lessening the potential for channel catfish reproduction.

"Nonnative fish management is one of our biggest challenges and one of the most important for recovery of the endangered fish species," said Upper Colorado River Recovery Program Director Bob Muth. *"There are no easy or quick solutions because of the large numbers of nonnative fish occupying the same areas as the endangered fish. The Recovery Program is committed to using the best scientific information to determine future management actions needed to achieve our goal of recovery."*

Recovery Program Partners Develop Landmark Policy

In spring 2004, Upper Colorado River Endangered Fish Recovery Program partners adopted a policy to identify and implement nonnative fish management actions needed to recover the endangered fish.

"This was a landmark event because it clearly demonstrates that these diverse organizations recognize that management of nonnative fish is essential to achieve and sustain recovery of the endangered fishes," said U.S. Fish and Wildlife Service Mountain-Prairie Regional Director Ralph Morgenweck, who also chairs the Recovery Program's Implementation Committee. *"The policy also recognizes the dual responsibilities of State and Federal fish and wildlife agencies to conserve listed and other native fish species while providing recreational sportfishing opportunities."*

Programs are Authorized in Federal Law

Enactment of Public Laws 106-392 and 107-375 Provide Construction Authorities and Ongoing O&M Funding for the San Juan River and Upper Colorado River Recovery Programs.

Continuing success of both Recovery Programs depends on obtaining sufficient funding to implement recovery actions such as those identified in the Upper Colorado River Endangered Fish Recovery Action Plan. Public Law (P.L.) 106-392, signed on October 30, 2000, authorizes the U.S. Bureau of Reclamation (USBR) to provide cost sharing for capital construction projects for the Upper Colorado River and San Juan River Recovery Programs. Non-Federal cost-sharing funds are provided by the Upper Basin States (Colorado, New Mexico, Utah, and Wyoming); and by water users and Colorado River Storage Project (CRSP) power users.

P.L. 107-375, signed on December 19, 2002, extends the authorization period for the Secretary of Interior to complete the capital construction projects (and to expend non-Federal funds) from 2005 to 2008 for the Upper Colorado River Program and from 2007 to 2008 for the San Juan River Program. Pursuant to this Federal authorization, the programs' capital construction costs are not to exceed $100 million: $82 million for the Upper Colorado River Program and $18 million for the San Juan River Program. P.L. 106-392 recognizes the contribution of $20 million that has been incurred as a portion of replacement power costs due to modified operations at the CRSP power facilities and the capital cost of water storage in Wolford Mountain Reservoir (Colorado) to benefit the endangered fishes.

Established Cost-sharing of Capital Construction for the Upper Colorado and San Juan Recovery Programs

Upper Colorado Recovery Program	$ 82 million
San Juan Recovery Program	$ 18 million
Total	$ 100 million

Sources of Revenue (Cost-sharing)

Federal		Non-Federal	
Congress:	$ 46 million	Power Revs:	$ 17 million
		States:	$ 17 million
		Water & Power:	$ 20 million
Total	$ 46 million	Total	$ 54 million

Base Program (O&M) Funding

P.L. 106-392 also provides up to $6 million per year (adjusted annually for inflation) of CRSP power revenues for base (non-capital) funding for the two Recovery Programs. Through 2011, annual "base" funding of up to $4 million may be provided for the Upper Colorado Program and up to $2 million may be provided for the San Juan Program. After 2011, CRSP power revenues may be used only to operate and maintain the capital projects and for monitoring, unless Congress authorizes additional funding. In the event there are insufficient funds in the Upper Colorado Basin Fund to meet Western Area Power Administration (WAPA) and USBR obligations under the CRSP Act of 1956 for a three-year period, WAPA and the USBR shall request appropriations to meet base funding obligations.

Capital Funding

The four participating States and CRSP power revenues each are contributing $17 million for these projects.

State Funding

The States' ongoing financial participation in these efforts has been funded through several unique and creative means. In Colorado, HB 98-1006 created the Native Species Conservation Trust Fund, through which an annual "Species Conservation Eligibility List," submitted by the Department of Natural Resources, is approved by a joint resolution of the General Assembly. The New Mexico Legislature has chosen to appropriate funds into the State's "operating reserve," thus making them available at any time and not tied to a specific calendar year. Application of the funds is subject to approval by the New Mexico Interstate Stream Commission.

Cost-sharing by the Four Participating States

		Upper Colorado River Rec. Program	San Juan Rec. Program
Colorado	$ 9.146 M	$ 8.065 M	$ 1.081 M
Utah	3.422 M	3.422 M	0.000 M
New Mexico	2.744 M	0.000 M	2.744 M
Wyoming	1.688 M	1.688 M	0.000 M
Totals	**$17.000 M**	**$13.175M**	**$3.825M**

The Wyoming State Legislature appropriated its funding share during its 1998 and 1999 sessions. The Utah State Legislature has pursued a twofold approach by creating in 1997 a restricted Species Protection Account within the General Fund, which receives revenue generated by the Brine Shrimp Royalty Acts' brine shrimp tax and by the dedication in 2000 of 1/16th of one cent of the Utah sales tax to water development projects such as the Upper Colorado River Program.

Power Revenues

The Secretary of Energy, acting through the WAPA, is authorized to use up to $17 million of CRSP power revenues for capital projects. These revenues are treated as a non-Federal contribution, but are reimbursable costs assigned to power for repayment under section 5 of the CRSP Act. P.L. 106-392 requires that the power revenue and State funding match on a rolling two-year basis. Power revenue funding may be provided in part from loan(s) provided to WAPA from the Colorado Water Conservation Board's Construction Fund, as permitted by the programs' Federal authorizations.