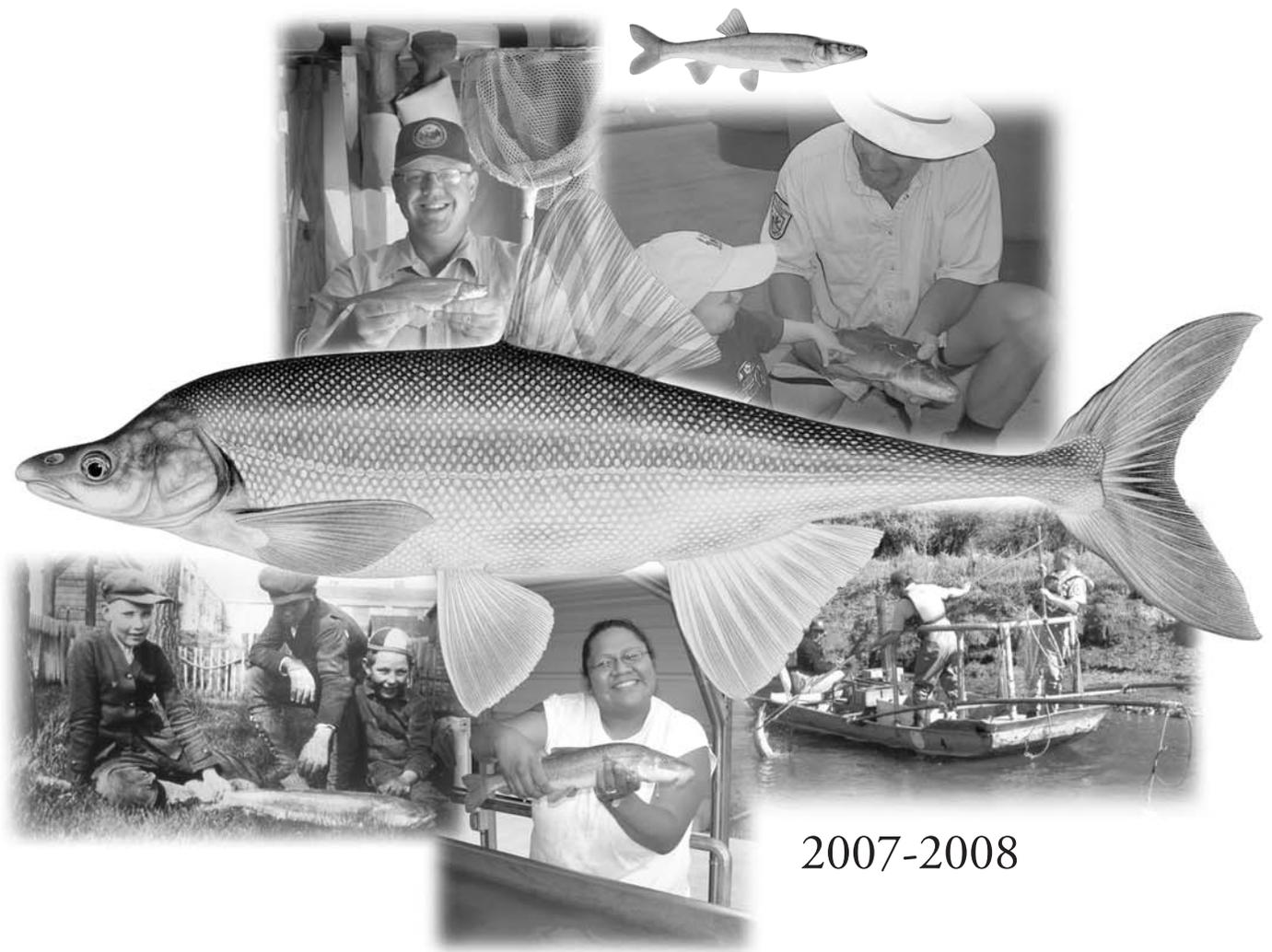


**Upper Colorado River Endangered Fish Recovery Program
San Juan River Basin Recovery Implementation Program**

Program Highlights



2007-2008



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

Balancing Species Recovery with Water Use and Development

Program Highlights 2007-2008

Partners of the Upper Colorado River Endangered Fish Recovery Program and the San Juan River Basin Recovery Implementation Program work cooperatively to recover endangered Colorado River fishes while water use and development continues to meet human needs in compliance with interstate compacts and applicable federal and state laws.

The recovery programs provide Endangered Species Act compliance for fulfillment of federal trust responsibilities

to American Indian Tribes and continued operation of federal water and power projects in accordance with project purposes. The Intermountain West is the nation's fastest-growing region and a critically important energy-producing area of the country. Recovery Program partners recognize that their collaborative conservation partnerships provide the most workable approach to recover endangered species while meeting energy and water demands.

Program Highlights is produced annually to document the recovery programs' progress toward recovery of the endangered fishes. This document is not a publication of the U.S. Department of the Interior or its agencies.



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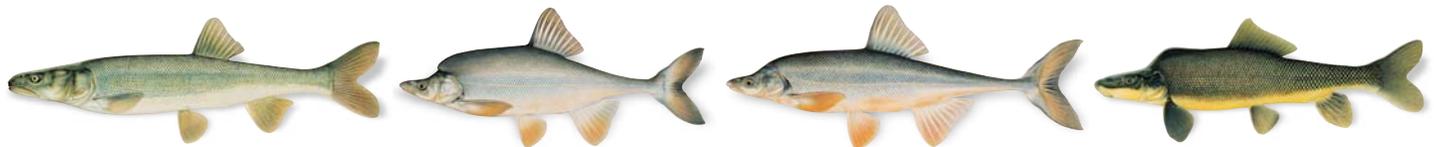
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Colorado Pikeminnow

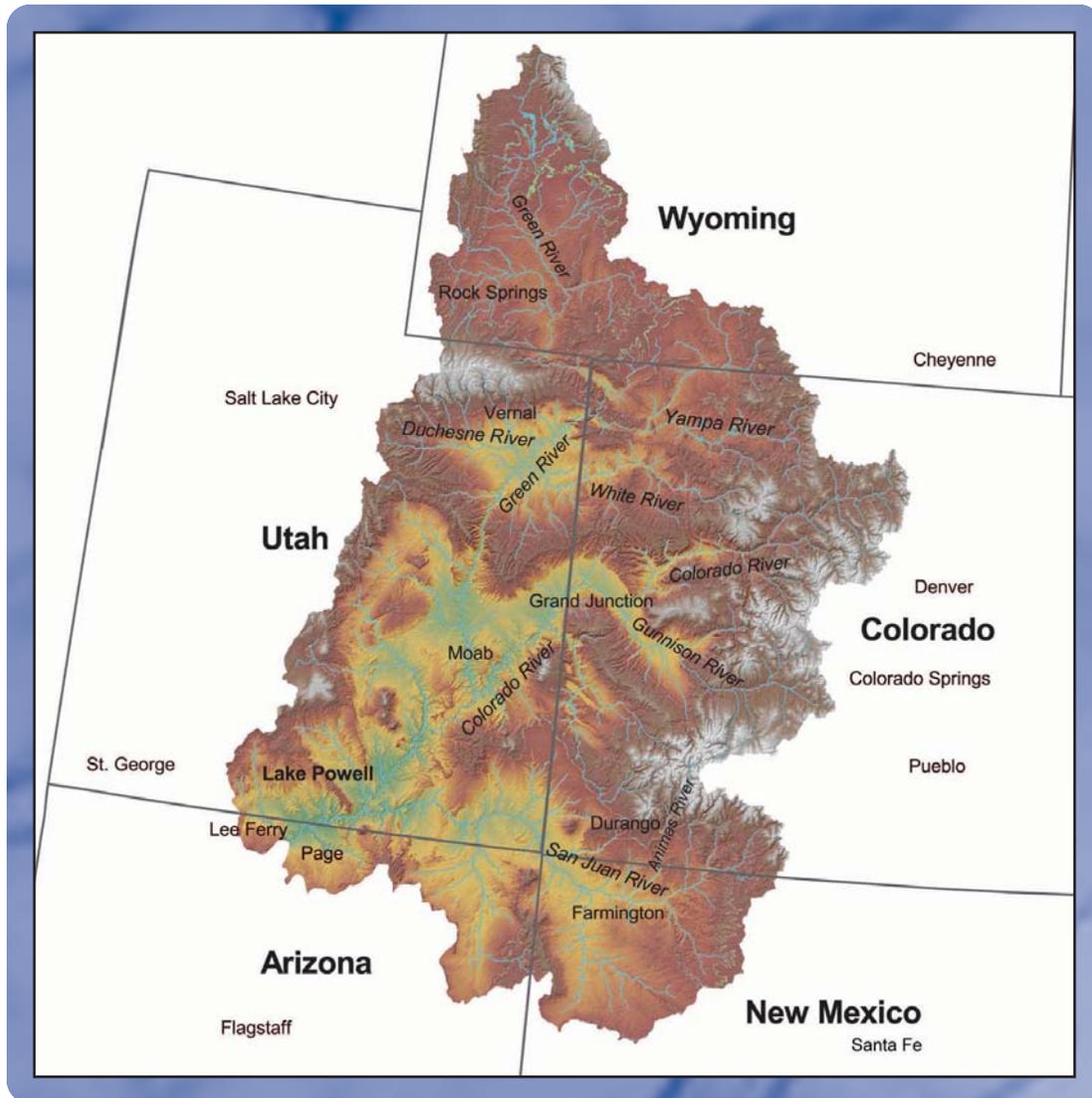
Humpback Chub

Bonytail

Razorback Sucker

Illustrations® by Joseph R. Tomelleri

Recovering Endangered Fishes in the Upper Colorado and San Juan River Basins



Geographic Scope:

The Upper Colorado River Endangered Fish Recovery Program is recovering humpback chub, bonytail, Colorado pikeminnow, and razorback sucker in the Colorado River and its tributaries in Colorado, Utah, and Wyoming. The Recovery Program was initiated in 1988 with the signing of a cooperative agreement by the Governors of Colorado, Utah, and Wyoming; the Secretary of the Interior; and the Administrator of Western Area Power Administration. In 2001, the cooperative agreement was extended through September 30, 2013.

The San Juan River Basin Recovery Implementation Program is recovering Colorado pikeminnow and razorback sucker in the San Juan River and its tributaries in Colorado, New Mexico, and Utah. The Recovery Program was established in 1992 with the signing of a cooperative agreement by the Governors of Colorado and New Mexico; the Secretary of the Interior; the Bureau of Indian Affairs, the Southern Ute Indian Tribe, the Ute Mountain Ute Tribe, and the Jicarilla Apache Nation. In 2006, the cooperative agreement was extended through September 30, 2023.

Partners' Active Commitment and Participation Key to Recovery Programs' Success

Given the Colorado River Basin's complex habitat changes and demands on water resources, Recovery Program partners recognize that collaboration is necessary to accomplish the dual objectives of recovering endangered fish species while providing water for human needs. Each partner fully participates in developing and implementing management actions leading toward delisting of the endangered Colorado River fishes. The recovery programs have earned accolades for their

management approach, their proven track record of accomplishments and their partners' long-term commitments of staff, time, and money.

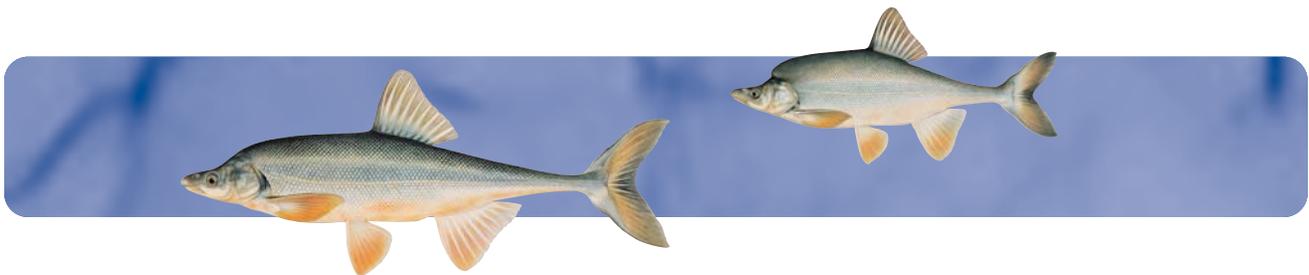
Congressional support and funding of agency involvement and program construction projects demonstrate the effectiveness of public and private conservation partnerships. The recovery programs' success is a direct result of the active commitment and participation of their partners.

Upper Colorado River Endangered Fish Recovery Program

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

San Juan River Basin Recovery Implementation Program

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



Demonstrated Achievements Draw Bipartisan Support for Endangered Fish Recovery Programs

The recovery programs demonstrate that public and private partnerships can effectively recover endangered species and resolve Endangered Species Act-related conflicts. State and federal leaders (including the Congress) continue to provide bipartisan and critically important support and funding for these programs in recognition of their proven effectiveness.

DEPARTMENT OF THE INTERIOR

“Faced with the need to manage the [Colorado] river for threatened and endangered fish and other wildlife, the Fish and Wildlife Service, the Bureau of Reclamation and many other partners developed the Upper Colorado River Endangered Fish Recovery Program, the Lower Colorado Basin Multi-species Conservation Program, and the San Juan River Basin Recovery Implementation Program. As a result we are making progress toward recovery of endangered fish, while addressing the demand for water development to support growing western communities.”

Secretary of the Interior Dirk Kempthorne, Dec. 15, 2006
Colorado River Water Users Association Annual Meeting
Las Vegas, Nevada

“Although the Fish and Wildlife Service is legally mandated to conserve species protected under the Endangered Species Act, we can’t do it alone. We know that success requires the power of effective partnerships—from State and Federal personnel to non-governmental organizations. The Upper Colorado River and San Juan River Basin recovery programs have succeeded in bringing stakeholders together, uniting conservation efforts, and striking the necessary balances between species conservation and human needs.”

U.S. Fish and Wildlife Service Director Dale Hall

COLORADO

“Balancing the needs of the environment with the beneficial use of our state’s water continues to be a challenge. Nowhere is this more evident than meeting our obligations under the Endangered Species Act. Colorado is implementing collaborative solutions through several Endangered Species Recovery Programs. On the Colorado River we are working to recover endangered fish, while protecting water users and ensuring the state can develop its entitlements under interstate compacts.”

Bill Ritter, 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 recovery programs have become national models for collaboratively working to recover endangered species while meeting water use and water development demands in compliance with the Endangered Species Act, state law, and interstate compacts in the Upper Colorado River Basin region of the Intermountain West.”

Dave Freudenthal, Governor, State of Wyoming



Federal Laws Authorizing Cost-Sharing Show Congressional Commitment to Species Recovery

Although Congressional authorization to fund capital construction projects and operation and maintenance has been enacted in federal law, the Upper Colorado River and San Juan River Basin recovery programs' continued success depends on obtaining sufficient funding to implement recovery actions.

CAPITAL FUNDS

Public Law (P.L.) 106-392 (2000) authorizes the Bureau of Reclamation (Reclamation) to cost-share capital construction projects for both recovery programs. Colorado River Storage Project (CRSP) power customers, water users, and the states of Colorado, New Mexico, Utah, and Wyoming provide non-federal cost-sharing funds.

P.L. 107-375 (2002) extends the period to complete capital construction to 2008. P.L. 109-183 (2006) authorizes an additional \$15 million for capital construction for the Upper Colorado River program and extends the capital construction period to 2010 for both programs.

Capital Construction Cost-Sharing for Upper Colorado and San Juan Programs		
Upper Colo. Rec. Program	\$108 million
San Juan Recovery Program	\$18 million
Total	\$126 million*
*Sources of Revenue		
Federal	Non-Federal	
Congress: \$61 million	Power Revenues:	\$17 million
	States:	\$17 million
	Water and Power:	\$31 million
		\$65 million

Power Revenues

The Secretary of Energy, acting through the Western Area Power Administration, is authorized to expend up to \$17 million of CRSP power revenues for capital projects construction. 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.

States Cost-Share Capital Projects

Capital Project Cost-Sharing by the States			
		Upper Colorado Rec. Program	San Juan Rec. Program
Colorado	\$9.146 M	\$8.065 M	\$1.081 M
New Mexico	2.744 M	0.000 M	2.744 M
Utah	3.422 M	3.422 M	0.000 M
Wyoming	1.688 M	1.688 M	0.000 M
Total	\$17.000 M	\$13.175 M	\$3.825 M

The states fund contributions in a variety of ways:

- ◆ **Colorado's** legislature created a Native Species Conservation Trust Fund in 2000 through which an annual "Species Conservation Eligibility List" is funded by a joint resolution of the State's General Assembly.
- ◆ **New Mexico's** legislature appropriated funds to meet the state's cost-share contributions.
- ◆ **Utah's** legislature created a Species Protection Account within the General Fund in 1997 which receives Brine Shrimp Royalty Act-created revenue. In 2000, Utah dedicated 1/16th of one cent general sales tax to water development projects and directed funding to the Upper Colorado River Program.
- ◆ **Wyoming's** legislature appropriated its funding share during its 1998 and 1999 sessions.

BASE FUNDS

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 programs. This provides up to \$4 million for the Upper Colorado River Program and up to \$2 million for the San Juan River Basin Program. The states, U.S. Fish and Wildlife Service, and water users also contribute substantial base funding each year. (See pages 18 and 19 for a budget summary of each program.)

Recovery Programs Rely on Recovery Goals to Guide Actions and Measure Success

The recovery programs rely on recovery goals as the foundation to develop and implement management actions and measure success as they work to recover the endangered fishes. The recovery goals provide objective, measurable criteria for downlisting to “threatened” and delisting (removal from Endangered Species Act [ESA] protection).

Recovery is based on reducing threats and improving a species’ status during the time it is listed under the ESA. Recovery goals identify the number and age of fish that comprise a specified number of self-sustaining wild populations (see pages 16-17). They also identify site-specific management actions that reduce threats to the species associated with the ESA’s five listing factors.

Endangered Species Act Listing Factors

- A. Present or threatened destruction, modification, or curtailment of habitat or range.
- B. Overutilization for commercial, recreational, scientific, or educational purposes.
- C. Disease or predation.
- D. Inadequacy of existing regulatory mechanisms.
- E. Other natural or manmade factors affecting continued existence.

The U.S. Fish and Wildlife Service (Service) will consider downlisting or delisting the endangered fishes once the required demographic and genetic standards for self-sustaining populations are reached, and the necessary management actions are achieved to reduce the threats that caused the fish to be listed.

The Service approved the initial recovery goals on August 1, 2002, with the requirement that they be reviewed and updated at least every five years to include any new information. This review is underway with completion slated for 2008. Results will be available for public review and comment in the *Federal Register*.

Actions to Recover the Fishes

The recovery programs implement management actions within five major program elements. They primarily address threats associated with present or threatened destruction, modification, or curtailment of habitat or range (*ESA listing factor A*) and disease or predation (*ESA listing factor C*).

The five program elements are:

- ◆ **Habitat Management** – Identify and provide adequate instream flows.
- ◆ **Habitat Development** – Construct and operate fish passages and screens at diversion dams and canals, and acquire and restore floodplain habitat.
- ◆ **Nonnative Species and Sportfishing** – Reduce the threat of certain nonnative fish species while maintaining sportfishing opportunities.
- ◆ **Endangered Fish Propagation and Stocking** – Produce genetically diverse fish in hatcheries and stock them in the river system.
- ◆ **Research, Monitoring, and Data Management** – Provide data on life-history requirements of the endangered fishes and monitor populations to measure progress toward achieving the recovery goals.

Highlights of recent accomplishments within each program element to recover the fishes are described on the following pages.



Management of nonnative fishes, like this northern pike, remains one of the greatest challenges to recovering the endangered fishes.

Implementing Innovative Solutions to Manage Water and Improve River Habitat

The recovery programs implement innovative solutions to meet water needs of growing western communities while providing adequate instream flows to restore river and floodplain habitat to benefit endangered fishes. Program partners cooperatively manage water resources in accordance with state water law, individual water rights, and interstate compacts. This is accomplished through water leases and contracts, coordinated water releases from upstream reservoirs, efficiency improvements to irrigation systems, and reoperation of federal dams and reservoirs. These actions benefit recreational, municipal, and agricultural water users, as well as the endangered fishes.



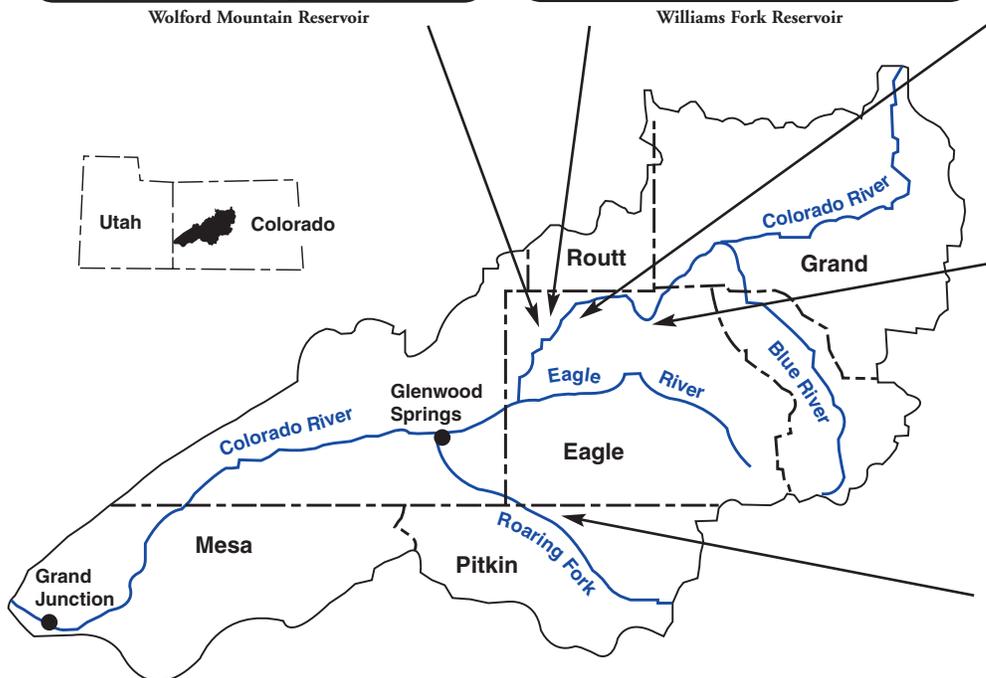
Woflord Mountain Reservoir



Williams Fork Reservoir



Green Mountain Reservoir



Dillon Reservoir



Ruedi Reservoir

Five Colorado reservoirs participate in coordinated reservoir operations in the Colorado River to voluntarily release water to enhance river spring peak flows and improve fish habitat without affecting those reservoirs' yields. Most of these reservoirs also contribute water for late-summer, base-flow augmentation. Since 2000, releases from upstream Colorado River reservoirs, averaging 48,000 acre-feet per year, enhanced summer base flows and improved endangered fish habitat (see table below).

Year	2000	2001	2002	2003	2004	2005	2006	2007
Water (acre-feet)	45,565	68,305	19,613	72,108	17,640	53,177	55,477	53,884

Continued on page 9

◆ Cooperative relationships help the recovery programs adapt to emergency and weather-related issues. Last summer, damage to Xcel Energy’s Shoshone Power Plant on the Colorado River in western Colorado threatened to interrupt downstream deliveries of water. Reservoir operators and private irrigation companies worked to quickly implement actions to meet all water users’ and endangered fish needs.

◆ Water users worked together in 2007 to meet a variety of flow requests for research and construction activities on the San Juan River that benefited fish and wildlife and recreational interests. Releases from Navajo Dam were reduced for a trout habitat improvement project and improvements to the diversion structure on a community irrigation ditch. Flows were provided for habitat mapping work in the endangered fish critical habitat area and to accommodate razorback sucker and Colorado pikeminnow stocking efforts.



The Bureau of Reclamation operates Navajo Dam to help recover endangered fishes.

Yampa River Community Celebrates Completion of Elkhead Dam and Reservoir Enlargement

The Upper Colorado River Endangered Fish Recovery Program participated in enlargement of Elkhead Dam and Reservoir in northwest Colorado. The project was dedicated on July 11, 2007, as a model of local, state, and federal cooperation to produce new water storage to benefit people and endangered fish in the Yampa River Valley.

The Recovery Program partnered with the Colorado River Water Conservation District and other state and local agencies on the 13,000 acre-foot, \$31 million project that almost doubled the size of the existing Elkhead Reservoir and brought the dam up to current safety standards.

More than 200 people gathered for the dedication while children played at the water’s edge and boats navigated the lake. Speakers stressed the precedence of a project that meets the needs of endangered species, people, industry, and recreation.

Colorado Department of Natural Resources Executive Director Harris Sherman shared Colorado Governor Bill Ritter’s appreciation for the importance of the project.

“This represents a win-win situation for the community and a balance between the needs of people and species conservation...” he said. “This is a model for what we ought to be doing in the other river basins in Colorado.”

The need to protect endangered fish in the Yampa River was a driving force in the creation of a project that balances the needs of people and the environment. The project sets a precedent in that 5,000 acre-feet of the new water storage were dedicated to, and financed by, the Upper Colorado River Recovery Program. Other water is set aside for future development in the Yampa Valley.

Additionally, the Recovery Program can access up to another 2,000 acre-feet of water for the endangered fish under a long-term water lease. During summer 2007, 5,000 acre-feet of permanent water was released into the Yampa River for the fish.



Colorado River Water Conservation District Board President Bill Trampe (left) welcomes Colorado Department of Natural Resources Executive Director Harris Sherman at the dedication of the Elkhead Dam and Reservoir enlargement.

Construction Projects to Improve River Habitat Nearly Complete

The recovery programs are working cooperatively with American Indian Tribes, water and power customers, and local landowners to improve fish habitat. Projects include constructing fish passages at diversion dams for endangered and other native fishes; screening diversion canals to keep fish from entering and becoming trapped, and acquiring and restoring floodplain habitat to serve primarily as fish nursery areas.

Upper Colorado River Endangered Fish Recovery Program

◆ **Fish passages and screens are in place at major diversion dams and canals in western Colorado.** The Redlands Diversion Dam on the Gunnison River, and the Grand Valley Irrigation Company and the Grand Valley Project diversion dams on the Colorado River no longer impede fish migration or present the risk of entrapment in canals.



The Price-Stubb Diversion Dam fish passage will be completed on the Colorado River near Grand Junction, Colorado, in March 2008, and become operational in April. Removal of this last barrier to fish migration will provide endangered fish access to an additional 52 miles of critical habitat that has been blocked since 1911.



The Grand Valley Project fish passage was completed in 2005. Full-time operation will begin with completion of the downstream Price-Stubb fish passage.

◆ **Redlands Diversion Dam fish passage restored access to 50 miles of Gunnison River critical habitat** for endangered fishes when completed in 1996. To date, 102 Colorado pikeminnows, 24 razorback suckers, 1 bonytail, and almost 86,000 other native fish have used the passage. Colorado pikeminnow and razorback sucker reproduction has been documented upstream of the fish passage.

◆ **Tusher Wash Diversion Dam canal fish screen** on the Green River in eastern Utah is scheduled to be constructed in 2010. Once completed, all major diversion canals identified in the recovery goals for the upper Colorado River system will be screened.

◆ **About 2,700 acres of restored floodplain habitat is managed** for all life stages of endangered fish.

Continued on page 11

San Juan River Basin Recovery Implementation Program

◆ Fish passages are being considered at the Arizona Public Service Company weir and the Fruitland Diversion Dam, which will provide endangered fish access to 180 miles of critical habitat.



Arizona Public Service Company weir

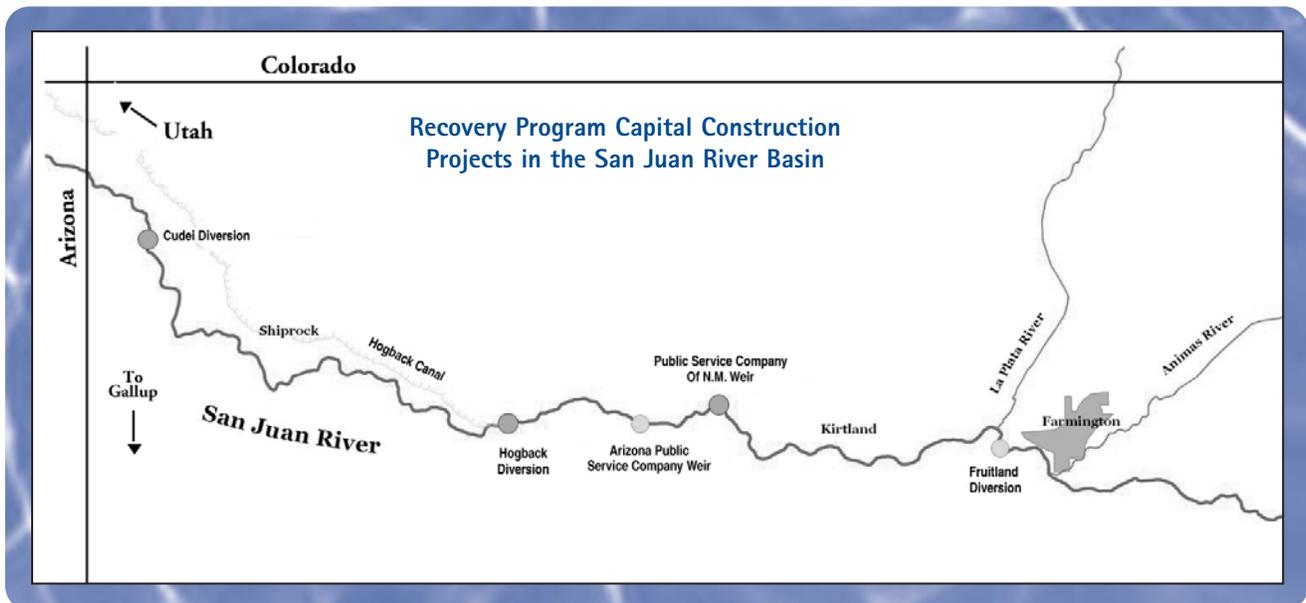


Fruitland Diversion Dam



The Navajo Nation operates the fish passage at the Public Service Company of New Mexico weir.

- ◆ A fish passage at the Public Service Company of New Mexico weir on the San Juan River has allowed 22 razor-back suckers, 29 Colorado pikeminnows, and more than 87,000 other native fish to move upstream since 2003.
- ◆ Hogback Diversion Dam canal fish screen construction is scheduled for completion in 2009.
- ◆ Fish access has been restored to an additional 36 miles of critical habitat on the San Juan River with the construction of passages at the Public Service Company of New Mexico weir and the Hogback Diversion Dam, and removal of the Cudei Diversion Dam.



Reestablishing Endangered Fish Populations through Propagation and Stocking

Hatchery-produced, genetically diverse stocked fish form the foundation to reestablish naturally self-sustaining populations of razorback sucker and bonytail in the upper Colorado River system and razorback sucker and Colorado pikeminnow in the San Juan River. Both recovery programs implemented new stocking plans in 2003 to expedite reestablishment of wild populations (*see population criteria on pages 17-18*).

The recovery programs fund six hatchery facilities to produce the fish necessary to meet the stocking targets: Dexter National Fish Hatchery and Technology Center, J.W. Mumma Native Aquatic Species Restoration Facility, Ouray National Fish Hatchery, Grand Valley Endangered Fish Facility, Uvalde National Fish Hatchery, and Wahweap Fish Hatchery.

- ◆ Since 1996, about 162,300 subadult razorback suckers, 295,250 subadult bonytails, and 8,000 subadult Colorado pikeminnows have been stocked in the upper Colorado River system.
- ◆ Since 2002, almost 1.8 million juvenile Colorado pikeminnows have been stocked in the San Juan River.
- ◆ Since 1994, about 48,300 subadult or adult razorback suckers have been stocked in the San Juan River.



U.S. Fish and Wildlife Service biologists remove razorback suckers raised at Uvalde National Fish Hatchery in south Texas to stock in the San Juan River.



The State of Colorado's J.W. Mumma Native Aquatic Species Restoration Facility in Alamosa, Colorado, raises bonytails and Colorado pikeminnows for stocking.



A biologist from the Ouray National Fish Hatchery near Vernal, Utah, stocks razorback suckers in the Green River.

Fish Stocked in 2006 and 2007 to Meet Annual River Stocking Targets

Species	River	Annual River Target	Fish Stocked 2006	Fish Stocked 2007
Colorado pikeminnow	San Juan	303,000	326,547	479,226
	Razorback sucker	San Juan	11,400	18,793
Bonytail	Colorado and Gunnison	9,930	11,559	10,098
	Middle Green	9,930	10,091	11,014
	Lower Green	9,930	10,313	8,539
	Colorado	5,330	5,554	5,570
	Middle Green	5,330	5,045	5,409
	Lower Green	5,330	3,270	5,404

Stocked Endangered Fish are Surviving and Reproducing

The recovery programs' stocking efforts have been successful in helping to reestablish endangered fish populations throughout the Upper Colorado River and San Juan River basins. The recovery programs continue to monitor survival and reproduction of stocked fish to evaluate and improve stocking strategies.

Razorback Sucker

- ◆ **Stocked razorback suckers are moving between the Green, Colorado, and Gunnison rivers.** This exchange of individuals between rivers suggests that razorback suckers may eventually form a network of populations or subpopulations.
- ◆ **Stocked razorback suckers are behaving as wild fish.** They have been recaptured or observed in reproductive condition at spawning sites in the Green and San Juan rivers.
- ◆ **Stocked razorback suckers are reproducing** in the Green, Gunnison, Colorado, and San Juan rivers based on captures of larval fish.
- ◆ **Razorback sucker larvae are surviving through the first year** in the Green, Gunnison, and San Juan rivers based on captures of juveniles. Numbers of larvae collected from the Green River in 2007 were the highest ever recorded.



A U.S. Fish and Wildlife Service biologist uses a light trap to collect razorback sucker larvae in Cliff Creek on the Green River near Jensen, Utah.

Colorado Pikeminnow

- ◆ **About 8,400 recaptures of stocked Colorado pikeminnows** were reported from the San Juan River in 2004-2006, with many of these fish reaching sexual maturity. Numbers of recaptures in 2005 and 2006 were higher than in previous years.
- ◆ **Recaptures indicate that stocked fish are surviving,** with many fish approaching adulthood. Biologists anticipate documenting natural reproduction through the collection of larvae in future years.

Bonytail

- ◆ **Over 60,000 subadult or adult bonytails have been stocked** according to the new stocking plan from 2003-2007.
- ◆ **Research is under way** to modify the stocking plan to improve bonytail survival.



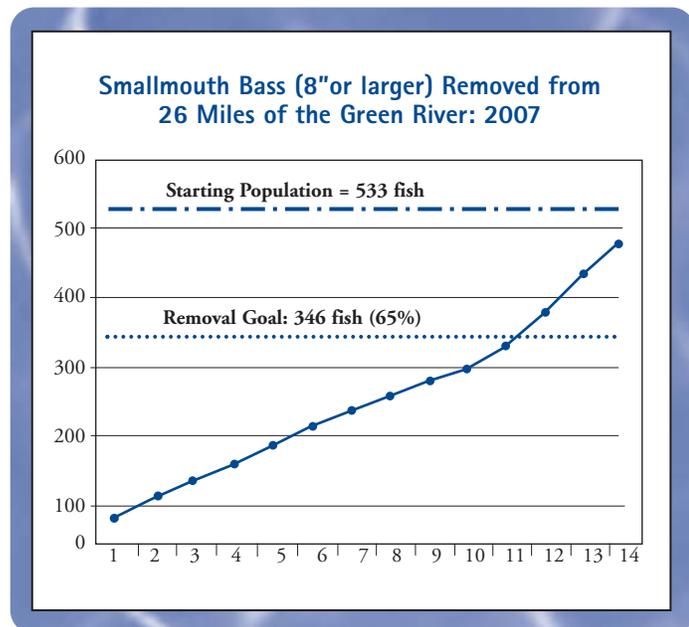
Almost 1.8 million juvenile or subadult Colorado pikeminnows have been stocked in the San Juan River since 2002.

Addressing Nonnative Fish Management Challenges

Pre- dation or competition by nonnative fish species is a serious threat to the endangered fishes and perhaps the most challenging to manage. Over the past 100 years, more than 50 nonnative fish species have been introduced into the Upper Colorado River Basin. The recovery programs are working hard to meet the challenge of nonnative fish management by removing the most problematic nonnative fishes from rivers and preventing nonnative fish from entering the river system in areas inhabited by endangered fish. These actions recognize the dual responsibilities of state and federal wildlife agencies to conserve native fish species while providing sportfishing opportunities. Where feasible, sportfish removed from rivers are translocated to off-channel ponds accessible to local anglers.

Upper Colorado River Endangered Fish Recovery Program

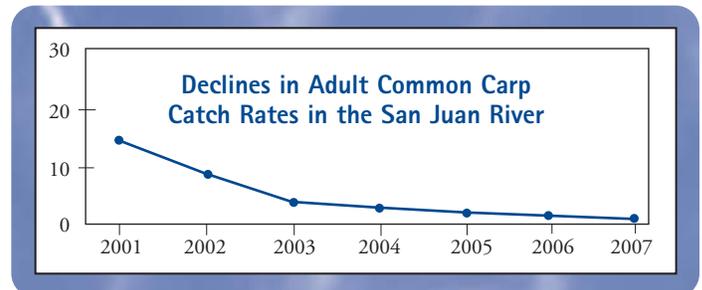
- ◆ **Efforts focus on northern pike and smallmouth bass,** the two species considered the most problematic.
- ◆ **Since northern pike removal efforts began in 1999, many of the larger, more predacious fish have been removed** from critical habitat in the Yampa River.
- ◆ **Smallmouth bass were removed from about 500 miles of river where the highest densities are known to occur.** In the most intensely sampled reach in the Green River, a collaborative effort of the U.S. Fish and Wildlife Service and Utah Division of Wildlife Resources exceeded the numerical goal for smallmouth bass reduction.



In 2007, 92% (492) of the estimated 533 adult smallmouth bass were removed during 14 sampling trips from the confluence of the Green and Yampa rivers to Split Mountain campground in Dinosaur National Monument.

San Juan River Basin Recovery Implementation Program

- ◆ **Active removal since 2001 has reduced the abundance of nonnative adult channel catfish** in high priority reaches: the upper and lower sections of the San Juan River where data showed channel catfish numbers were highest.
- ◆ **Removal efforts in 2008 will shift into a secondary phase.** Biologists will expand removal efforts into middle river reaches to manage the channel catfish population.
- ◆ **Active removal beginning in 2001 has reduced the abundance of nonnative common carp** to a level where collections of Colorado pikeminnows continued to outnumber common carp in 2007.



A nonnative channel catfish collected from the San Juan River. Fish of this size are seen less frequently since removal efforts began.

Reaching Out to Local Communities

The recovery programs work proactively to increase public support for endangered fish recovery. Wherever possible, the recovery programs involve local communities to help promote awareness of the endangered fishes and their recovery. As a result, innovative educational programs are now in place in many communities within the Colorado and San Juan river basins.



A new interpretive exhibit opened in 2007 featuring an aquarium with endangered fish at a visitor center in Steamboat Springs, Colorado.



Local annual water festivals include information about endangered fish.



The recovery programs provide information at major water conferences in Colorado, Nevada, Utah, and Wyoming.



The fish passage at the Public Service Company of New Mexico weir on the San Juan River continues to provide educational opportunities for students from local schools in New Mexico.



Fifth-grade classrooms established aquariums with endangered fish. During the school year students care for and help tag and release the fish into the river.

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



Research and Monitoring Track Endangered Fish Status and Support Adaptive Management

The recovery programs monitor reproduction, growth, survival, and abundance of endangered fish in the wild. Results are used to track progress toward achieving the recovery goals, assess the effectiveness of management actions, and adjust recovery efforts through adaptive management.

Downward trends in some humpback chub and Colorado pikeminnow populations and increased abundance of problematic nonnative fishes have been observed during dry weather and low river runoff conditions since 1999. The recovery programs implement management actions to reduce these impacts.

HUMPBACK CHUB

◆ **Five humpback chub wild populations inhabit sections** of the Colorado, Green, and Yampa rivers.

- About 3,000 adults occur in the Black Rocks and Westwater Canyon core populations on the Colorado River.
- About 1,000 adults occur in the Desolation/Gray Canyon core population on the Green River.
- Populations in Yampa and Cataract canyons are small, each consisting of up to a few hundred adults.

Population Criteria for Humpback Chub Recovery in the Upper Colorado River Basin

Downlisting

Over 5 years of monitoring:

- Maintain five populations with no net loss of fish
- One core population > 2,100 adults

Delisting

For 3 years after downlisting:

- Maintain five populations with no net loss of fish
- Two core populations, each > 2,100 adults



A survival study is being conducted on young-of-the-year *Gila* species from the Yampa River in Dinosaur National Monument in northwestern Colorado. Collected fish are being cultured at two hatchery facilities.

BONYTAIL

◆ **Stocking continues to reestablish bonytail populations** in the upper basin. Before stocking began, the species had nearly disappeared in the Upper Colorado River Basin.

- Stocking has expanded into floodplain wetlands to enhance growth and survival of the species (*see pages 12-13.*)
- Recaptures of stocked bonytails in several locations throughout the Green and Colorado rivers provide information about life-history and habitat requirements.

Population Criteria for Bonytail Recovery in the Upper Colorado River Basin

Downlisting

Over 5 years of monitoring:

- Maintain two reestablished populations, one in Green River system and one in Colorado River system, each > 4,400 adults, with no net loss of fish

Delisting

For 3 years after downlisting:

- Maintain two reestablished populations, one in Green River system and one in Colorado River system, each > 4,400 adults, with no net loss of fish



A biologist collects a stocked bonytail from the Green River.

Continued on page 17

COLORADO PIKEMINNOW

◆ **Wild Colorado pikeminnow populations occur in the Colorado and Green river systems of the Upper Colorado River Basin:**

- Abundance of adults in the upper Colorado River system increased from about 450 in 1992 to 870 in 2005.
- Abundance of adults in the Green River system declined from 3,100 to 2,300 in 2001 - 2003. Reproduction in 2006 was strong, and the next 3-year estimate of adult abundance will be completed in 2008.



Monitoring the age of Colorado pikeminnow provides insight on reasons for the downward population trends and guides actions to reverse these trends.

RAZORBACK SUCKER

◆ **Razorback sucker populations show success as stocked fish survive and reproduce (see pages 12-13).**

- Stocked razorback suckers in the Green and San Juan rivers have been captured at spawning sites in reproductive condition and captures of young fish in the Green, Gunnison, Colorado, and San Juan rivers demonstrate that these fish are reproducing.



A Navajo Nation Department of Fish and Wildlife technician moves a stocked razorback sucker from the fish passage at the Public Service Company of New Mexico weir on the San Juan River.

◆ **Stocking continues in the San Juan River to achieve requirements of the recovery goals (see pages 12-13).**

- Before stocking began, an estimated 19 wild adult fish remained in the San Juan River.
- The U.S. Fish and Wildlife Service concluded in 2005 that Colorado pikeminnow and razorback sucker populations in the San Juan River are more secure today than during the 1980s, and the threat of extinction has been reduced.

Demographic Criteria for Colorado Pikeminnow Recovery in the Upper Colorado River Basin

Downlisting	Delisting
<p>Over 5 years of monitoring:</p> <ul style="list-style-type: none"> • Maintain exchange of fish among populations • Maintain populations in Green and Colorado river systems with no net loss of fish • Green River system > 2,600 adults • Colorado River system > 700 adults and establish 1,000 subadults in San Juan River 	<p>For 7 years after downlisting:</p> <ul style="list-style-type: none"> • Maintain exchange of fish among populations • Maintain populations in Green and Colorado river systems with no net loss of fish • Green River system > 2,600 adults • Colorado River system > 1,000 adults or Colorado River system > 700 adults and the San Juan River > 800 adults

Population Criteria for Razorback Sucker Recovery in the Upper Colorado River Basin

Downlisting	Delisting
<p>Over 5 years of monitoring:</p> <ul style="list-style-type: none"> • Maintain two reestablished populations, one in Green River system and one in either Colorado River system or in San Juan River, each > 5,800 adults, with no net loss of fish 	<p>For 3 years after downlisting:</p> <ul style="list-style-type: none"> • Maintain two reestablished populations, one in Green River system and one in either Colorado River system or in San Juan River, each > 5,800 adults, with no net loss of fish



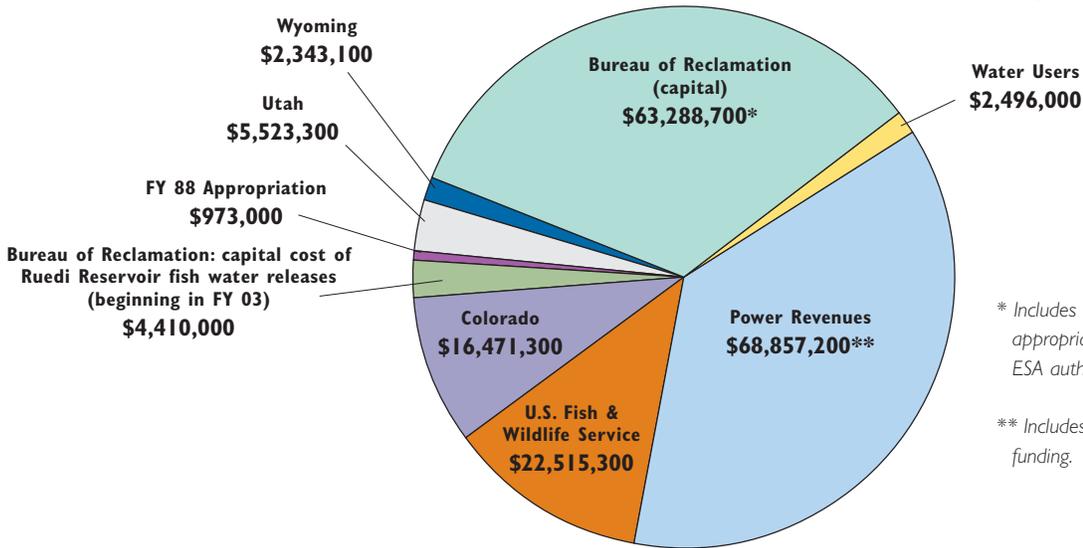
Stocked razorback suckers are being recaptured in the Green River.

Expenditures

Upper Colorado River Endangered Fish Recovery Program

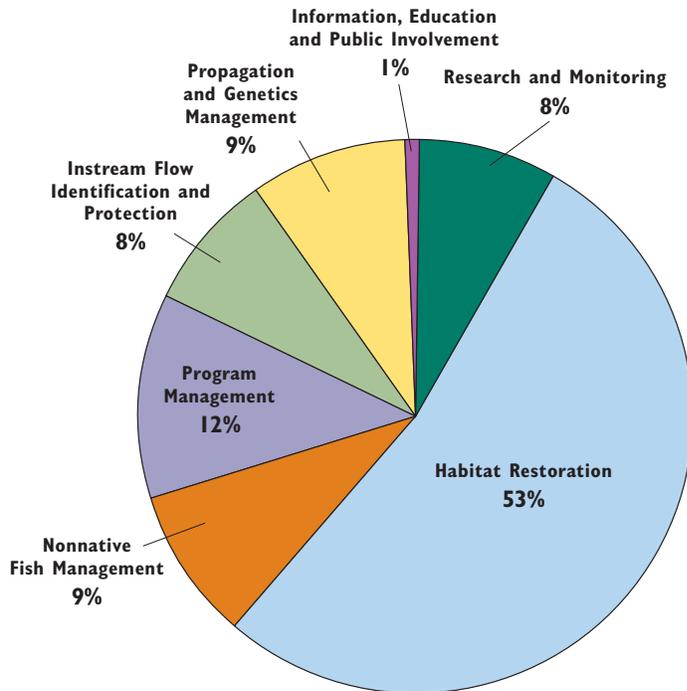
Total Partner Contributions = \$186,877,900 (FY 1989-2008)

**Partner Contributions
(FY 1989-2008)**



* Includes Reclamation capital appropriation of \$20,979,700 under ESA authorization prior to FY 1999.

** Includes both annual and capital project funding.



**Projected Expenditures
by Category
(FY 2008 only)**

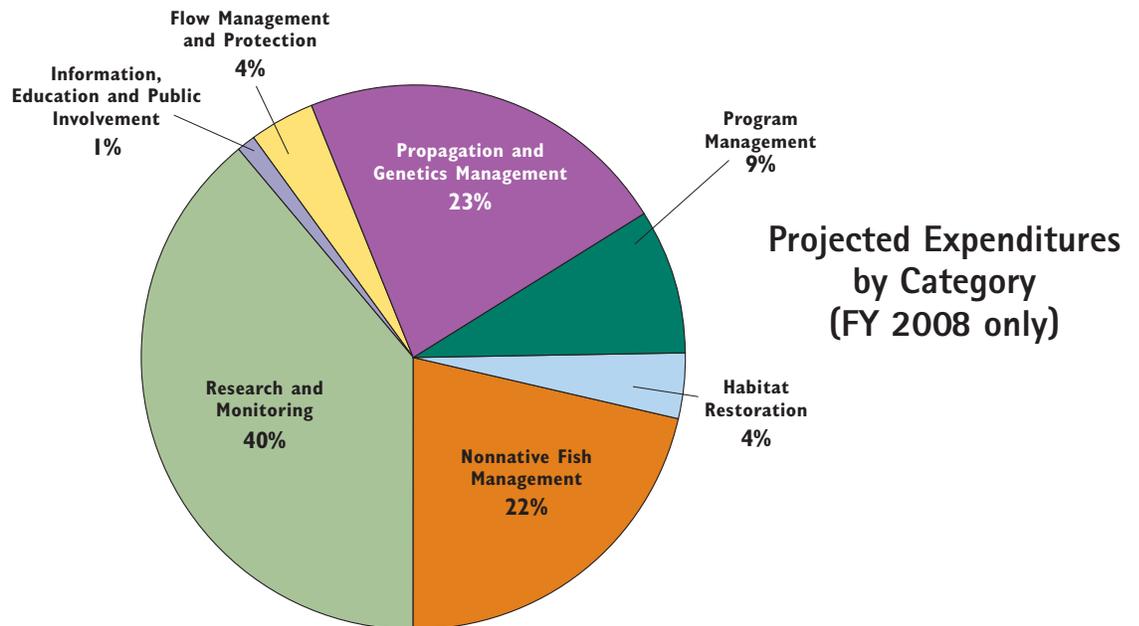
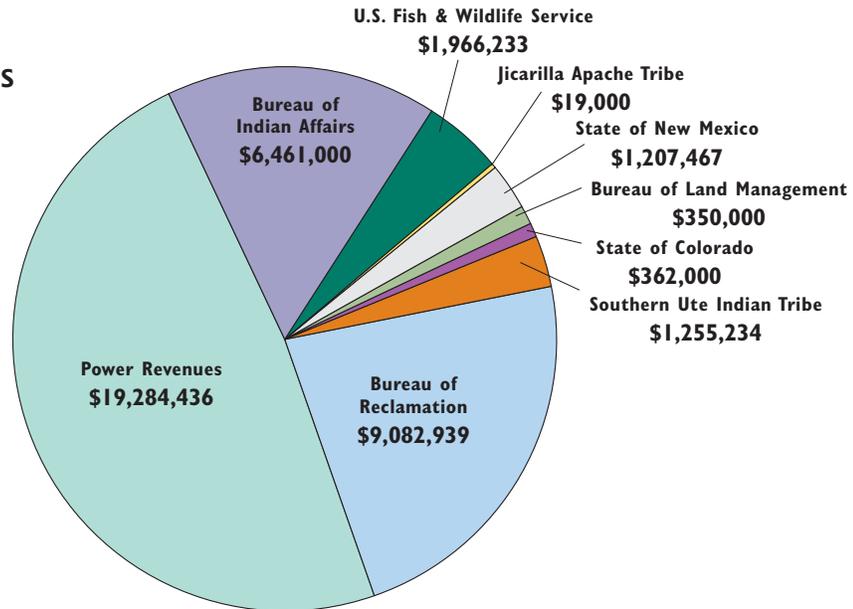
Expenditures

San Juan River Basin Recovery Implementation Program

Total Partner Contributions = \$39,988,309 (FY 1992-2008)

(Not including in-kind contributions)

**Partner Contributions
(FY 1992-2008)**



Providing Endangered Species Act Compliance for Water Projects

The Upper Colorado River and San Juan River Basin recovery programs respond 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. The programs' goal is to achieve full recovery (delisting) of the endangered fishes, not just to avoid jeopardy (offset impacts of water project depletions) under the Endangered Species Act (ESA). The recovery programs provide ESA compliance for water

development and management activities by all parties, including the federal government. Responsibilities to offset water project depletion impacts do not fall on individual projects or their proponents.

The recovery programs provide ESA compliance for more than 1,600 water projects depleting more than 3 million acre-feet per year. This is accomplished through cooperative efforts. No lawsuits have been filed on ESA compliance for any of these water projects.

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

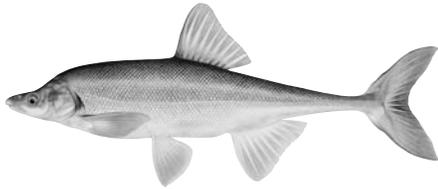
(1/1998 through 12/31/2007)

State	Number of Consultations	Historic Depletions	New Depletions	Totals
		Acre-feet/yr	Acre-feet/yr	Acre-feet/yr
Colorado	1,079	1,483,770	173,254	1,657,024
Utah	81	421,868	70,969	492,837
Wyoming	142	83,498	32,410	115,908
Regional*	238	(regional)	(regional)	0
Total	1,540	1,989,136	276,633	2,265,769

*Amount included in individual states' new depletions.

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

State	Number of Consultations	Depletions
		Acre-feet/yr
New Mexico	18	617,216
Colorado	94	217,456
Utah	12	9,140
Total	124	843,812



*Upper Colorado River Endangered
Fish Recovery Program*

Program Partners:

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

**Upper Colorado River Endangered
Fish Recovery Program**

P.O. Box 25486, DFC
Denver, CO 80225
303-969-7322
303-969-7327 Fax
coloradoriverrecovery.fws.gov



*San Juan River Basin Recovery
Implementation Program*

Program Partners:

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

**San Juan River Basin Recovery
Implementation Program**

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