Razorback Sucker
San Juan River

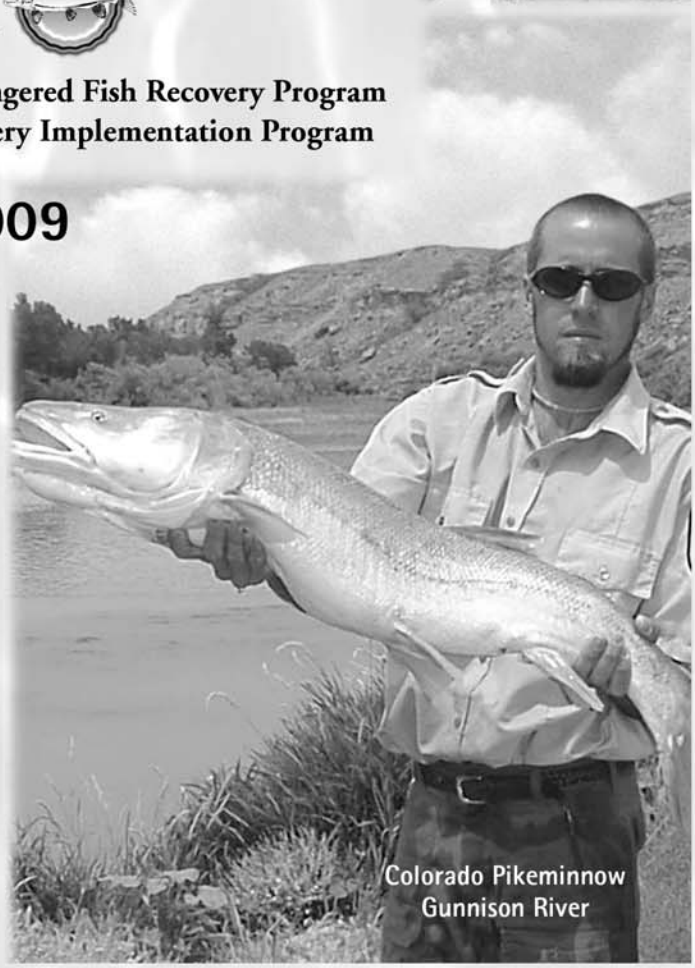
Humpback Chub
Green River

Program Highlights

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

2009

Bonytail
Green River



Colorado Pikeminnow
Gunnison River

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 2009

Partners of the Upper Colorado River Endangered Fish Recovery Program and the San Juan River Basin Recovery Implementation Program collaborate with public and private interests to recover endangered Colorado River fishes while meeting human needs for water and energy.

The Department of the Interior recognized the recovery programs with a Cooperative Conservation Award in 2008, citing the programs' excellence in conservation through collaboration and partnerships.

The Intermountain West is the nation's fastest-growing region and a critically important energy-producing area. 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. Adaptive management enables the programs to continually evaluate and revise management actions as new information becomes available.

***Program Highlights 2009* features milestones achieved since the inception of each Recovery Program.**

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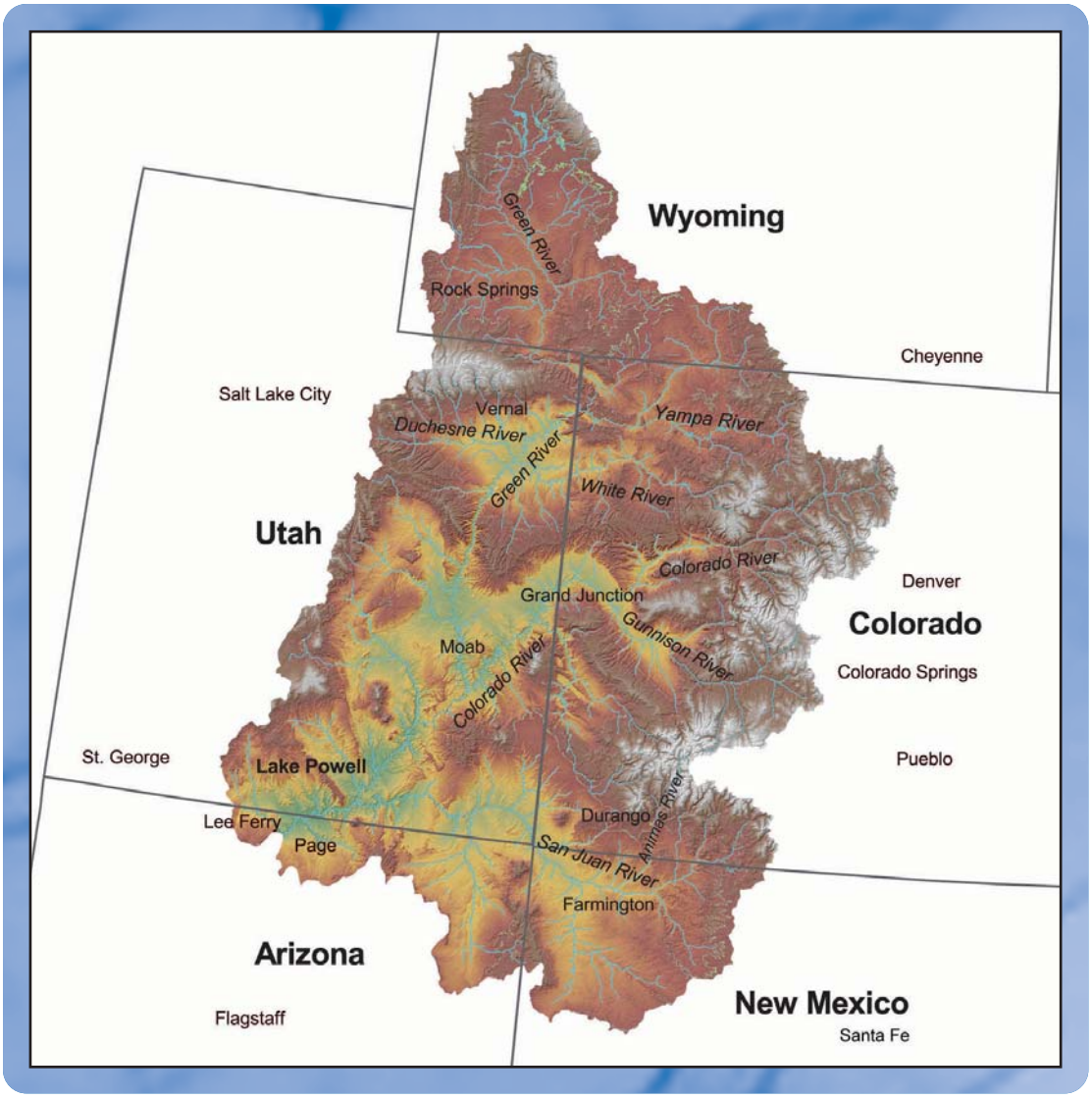
Recovering Endangered Fishes in the Upper Colorado and San Juan River Basins



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 Indian Tribe, and the Jicarilla Apache Nation. In 2006, the cooperative agreement was extended through September 30, 2023.

Partners' Active Commitment, Participation, and Support for Appropriations Key to Recovery Programs' Success

The Upper Colorado River Endangered Fish Recovery and San Juan River Basin Recovery Implementation Programs have a broad range of partners – and an even broader range of supporters. Recovery Program partners recognize and have embraced the fact that collaboration and broad grassroots support are essential given the Upper Colorado River Basin's complex and significant habitat changes, continuing additional demands on water resources, and the long-term commitments required for species' recovery efforts. **Each partner fully participates in developing and implementing management actions leading toward delisting of the endangered Colorado River fishes.**

Upper Colorado River Endangered Fish Recovery 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

San Juan River Basin Recovery Implementation Program Partners

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

Members of Congress representing Colorado, New Mexico, Utah, and Wyoming demonstrate strong bipartisan support each year through joint delegation funding support letters submitted to the Appropriations Subcommittees. **Testimony supporting appropriations has been submitted to Congress by:**

- State of Colorado
- State of New Mexico
- State of Utah
- State of Wyoming
- Navajo Nation
- Southern Ute Indian Tribe
- Ute Mountain Ute Tribe
- The Nature Conservancy
- Arizona Public Service
- BHP Billiton
- Central Utah Water Conservancy District
- City of Aurora, Colorado
- City of Colorado Springs, Colorado
- Colorado River Water Conservation District
- Colorado Water Congress
- Denver Water
- Dolores Water Conservancy District
- Grand Valley Water Users Association
- Northern Colorado Water Conservancy District
- Pueblo Board of Water Works
- Public Service Company of New Mexico
- San Juan Water Commission
- Southwestern Water Conservancy District
- Tri-County Water Conservancy District
- Uncompahgre Valley Water Conservancy District
- Upper Gunnison Water Conservancy District
- Utah Water Users Association
- Wyoming Water Association

Two Decades of Recovery Programs' Achievements Earn Longstanding Bipartisan Support

The recovery programs demonstrate that public and private partnerships can effectively work toward recovery of endangered species and resolve Endangered Species Act-related conflicts. State and federal leaders continue to recognize the recovery programs' effectiveness and provide bipartisan support and funding.

Interior Secretaries Praise Programs

"The restoration of endangered fish populations in the Upper Basin is an ongoing success story … [A]s a successful cooperative environmental recovery program; it could provide a pattern for both funding and collaboration on the Multi-Species Conservation Program (MSCP) in the lower basin."

Secretary of the Interior Bruce Babbitt, December 14, 2000

"When this program began 12 years ago, it was the first of its kind. Never before had such a mix of State and Federal organizations come together formally to work side-by-side with private water and power developers and environmental organizations. I commend all of the program's partners for developing creative and effective ways to meet the dual goals of endangered species recovery and water development."

Secretary of the Interior Gale Norton, December 1, 2001

"…in the Upper Colorado River Basin, the Fish and Wildlife Service has now consulted on nearly 1,400 water projects, using the Recovery Program as a reasonable and prudent alternative under the Endangered Species Act. This allows these projects to go forward while ensuring the conservation of the fish."

Secretary of the Interior Dirk Kempthorne, Dec. 15, 2006

Participating States' Governors Endorse the Programs' Efforts Year After Year

"Since 1988, the Endangered Fish Recovery Programs ... have proved to be the means to resolve endangered species conflicts, promote species recovery, and allow ongoing development and use of Compact-apportioned water resources throughout the West."

Bill Owens, Governor, State of Colorado

"Balancing the needs of the environment with the beneficial use of our state's water continues to be a challenge … 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

"The ongoing drought in Utah, as well as the rest of the western United States, underscores the importance of these programs as they allow water users in Utah to both maintain existing water use and develop new supplies while protecting the environment."

Michael O. Leavitt, Governor, State of Utah

"The Recovery Program is a mutually supported partnership … It is important to note, 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

"During the 106th Congress, Public Law 106-392 was enacted with strong bipartisan support ... Each of the four participating states has appropriated non-Federal cost sharing funding. These facts demonstrate the strong commitment and effective partnerships that are present in both of these ongoing programs."

Bill Richardson, Governor, State of New Mexico

"These ongoing, highly successful, cooperative programs ... reflect the proper approach to providing endangered species conservation and recovery … while concurrently resolving critical conflicts between endangered species recovery and the development and use of Compact-apportioned water resources in … the Intermountain West."

Dave Freudenthal, Governor, State of Wyoming

Recovery Goals Guide Management Actions

The recovery programs rely on recovery goals as the foundation documents 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 reduction of threats and improvement of 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. They also identify site-specific management actions that reduce threats to the species.

The U.S. Fish and Wildlife Service will downlist or delist 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 2009.

The recovery goals can be found at:
http://mountain-prairie.fws.gov/crrip/rg.htm.

Actions to Recover the Fishes

The recovery programs implement management actions within five major program elements:

◇ **Habitat Management** – Identify and provide adequate instream flows.

◇ **Habitat Development** – Construct and operate fish passages and screens at diversion dams, and acquire and restore floodplain habitat.

◇ **Nonnative Species and Sportfishing** – Reduce the threat of certain nonnative fish species while maintaining sportfishing opportunities.

Biologists are working to reduce the numbers of nonnative fish such as northern pike.

◇ **Endangered Fish Propagation and Stocking** – Produce genetically diverse fish in hatcheries and stock them in the river systems to reestablish populations.

◇ **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.

Public information and outreach actions are integrated into each program element. The recovery programs proactively work to increase public support for endangered fish recovery and invite full public participation and understanding of program activities.

Operated by the Navajo Nation, the fish passage at the Public Service Company of New Mexico Weir provides educational opportunities for students from local schools in New Mexico.

Providing Endangered Species Act Compliance for Water Projects

The Upper Colorado River and San Juan River Basin recovery programs respond to the challenges of water management by working 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 1,700 water projects depleting more than 3 million acre-feet per year. 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

(1/1988 through 12/31/2008)

		Historic Depletions	New Depletions	Totals
State	Number of Consultations	Acre-feet/yr	Acre-feet/yr	Acre-feet/yr
Colorado	1,091	1,483,770	176,725	1,660,495
Utah	191	517,670	75,509	593,179
Wyoming	155	83,498	33,067	116,566
Regional [a]	238	(regional)	(regional)	0
Total	**1,675**	**2,084,938**	**285,301**	**2,370,240**

[a] *Amount included in individual states' new depletions.*

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

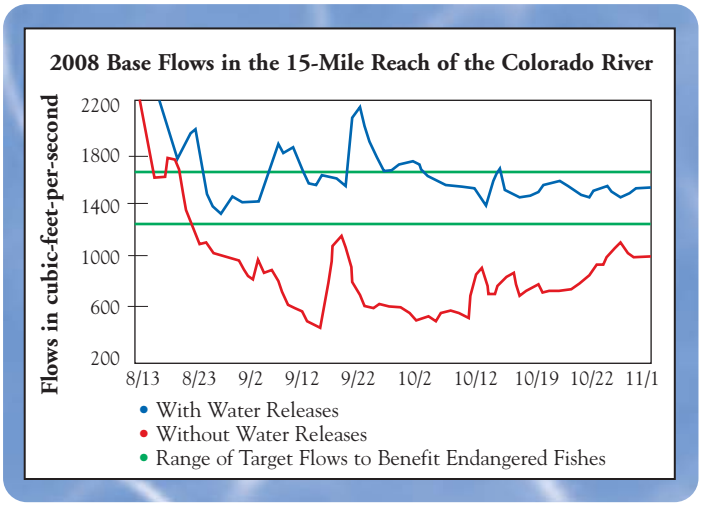
		Depletions
State	Number of Consultations	Acre-feet/yr
New Mexico	18	617,216
Colorado	94	217,456
Utah	12	9,140
Total	**124**	**843,812**

Implementing Innovative Solutions to Manage Water and Improve River Habitat

Actions accomplished by the recovery programs within this recovery element focus on identification and provision of instream flows necessary to achieve recovery of the endangered fishes. Research, monitoring, and adaptive management identify, evaluate, and revise flow recommendations to meet the flow-related life-history and habitat requirements of the endangered fishes.

Recovery Program partners cooperatively manage water in accordance with state water law, individual water rights, and interstate compacts to provide adequate instream flows for the endangered fishes while meeting water needs of growing western communities. This is accomplished through water leases and contracts, coordinated water releases from upstream reservoirs, efficiency improvements to irrigation systems, and re-operation of federal dams and reservoirs.

Coordinated, voluntary releases of water from upstream reservoirs (including Denver Water's Williams Fork Reservoir, pictured) enhance spring peak flows in the Colorado River for the endangered fishes. In 5 years during 1997-2008, releases ranged from 7,000 (in 2008) to 40,000 (in 1999) acre-feet of water.



Releases of water from upstream reservoirs, averaging 56,000 acre-feet per year since 2000, enhance late-summer and fall base flows in the Colorado River for the endangered fishes. The amount of water released in 2008 (shown above) was the greatest to date, totaling 114,255 acre-feet.

Contributing to the enhanced base flows in the Colorado River is water conserved by improvements to the Grand Valley Project Canal System in western Colorado completed in 2002, which have reduced water diversions by 10 to 16 percent (29,000 to 45,000 acre-feet) while meeting irrigation demands.

A 13,000 acre-foot enlargement of Elkhead Reservoir in northwest Colorado completed in 2006 makes up to 5,000 acre-feet of permanent water and 2,000 acre-feet of leased water available each year to enhance base flows for endangered fish in the Yampa River.

The Bureau of Reclamation changed operations at Flaming Gorge Dam on the Green River (left) and Navajo Dam on the San Juan River (right) in 2006 to help meet flow recommendations for the endangered fishes while meeting the projects' authorized purposes.

Local water users, American Indian Tribes, and state and federal agencies work together to implement agreements to share water shortages in Navajo Reservoir and the San Juan River Basin among human uses and endangered fish needs. Navajo Reservoir releases are reduced in winter to provide more water in the spring and summer.

Improvements at the Myton Diversion Dam on the Duchesne River are funded by a Water 2025 Challenge Grant to the Uintah Indian Irrigation Project and matching funds from the Upper Colorado River Program. Improvements will ensure delivery of full water rights and help implement flow recommendations for endangered fishes.

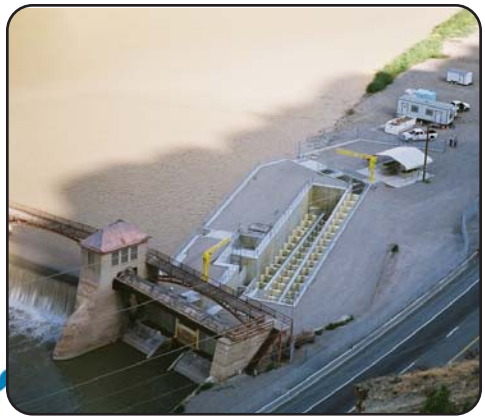
An environmental impact statement on re-operation of Aspinall Unit dams on the Gunnison River to assist in recovery of the endangered fishes is being prepared, with a record of decision anticipated by 2010. The Aspinall Unit is comprised of three reservoirs – Crystal, Blue Mesa (pictured), Morrow Point.

The recovery programs participate in local annual water festivals that teach students about endangered fish and water conservation.

Construction Projects Key to Improving Fish Habitat

The recovery programs work cooperatively with American Indian Tribes, water and power customers, and local landowners to improve endangered fish habitat. Habitat restoration and maintenance includes "undoing" habitat fragmentation through construction and operation of fish passages at irrigation diversion dams; preventing fish from entering and becoming trapped in irrigation diversion canals through construction and operation of fish screens; and acquisition, restoration, and management of floodplain habitat to serve primarily as fish nursery areas.

Price-Stubb Fish Passage, 2008



Grand Valley Project Fish Passage, 2004

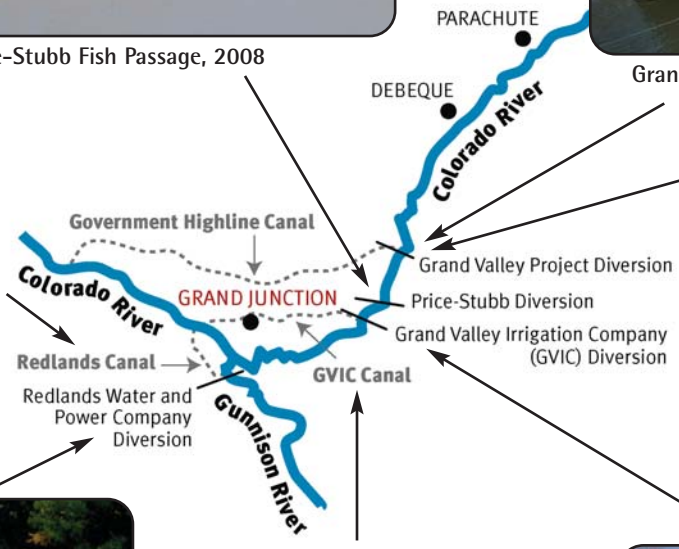
Redlands Fish Screen, 2005

Grand Valley Project Fish Screen, 2007

Redlands Fish Passage, 1996

GVIC Fish Screen, 2002

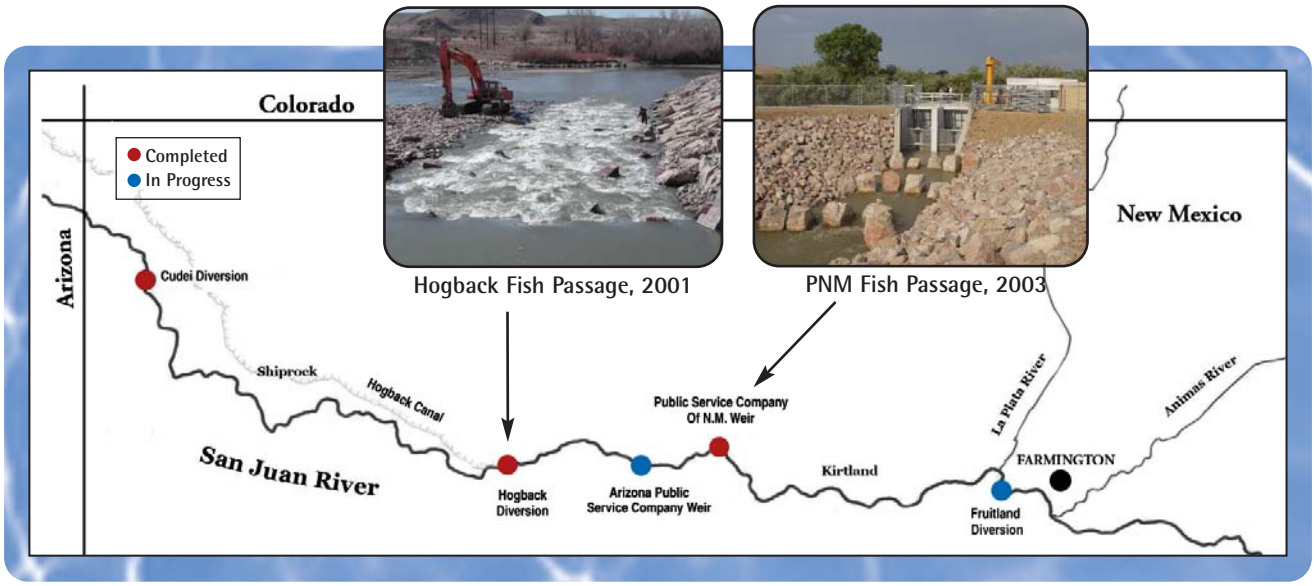
GVIC Fish Passage, 1998



Fish passages and screens are completed and operational at the Redlands Water and Power Company, Grand Valley Irrigation Company, Grand Valley Project, and Price-Stubb irrigation diversions near Grand Junction in western Colorado. These fish passages provide endangered fish with unimpeded access to about 340 miles of designated critical habitat in the Colorado and Gunnison rivers.

About 2,700 acres of restored floodplain habitat in the Upper Colorado River Basin are managed for all life stages of endangered fish.

Construction of a fish screen at the Green River's Tusher Wash Diversion Canal is slated to begin in 2010. Once completed, all major diversion canals identified in the recovery goals for the upper Colorado River system will be screened.



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 (PNM) Weir and the Hogback Diversion Dam, and removal of the Cudei Diversion Dam.

Construction of a weir wall to prevent fish from entering the Hogback Irrigation Canal will begin in 2009.

Fish passages are being considered at the Arizona Public Service Company Weir (pictured) and the Fruitland Diversion Dam to provide endangered fish continuous access to 180 miles of critical habitat in the San Juan River.

The San Juan River Program received a River Ecosystem Restoration Initiative grant from the New Mexico Environment Department to restore backwater and side channel habitat along the San Juan River to benefit the endangered fishes.

Making Progress Toward Reducing the Threat of Nonnative Fish

Predation or competition by nonnative fish species is a serious threat to the endangered fishes and the most challenging to manage. Currently, nonnative smallmouth bass and northern pike are the principal target species for management in the Green and upper Colorado River systems; whereas, nonnative channel catfish and common carp are targeted in the San Juan River.

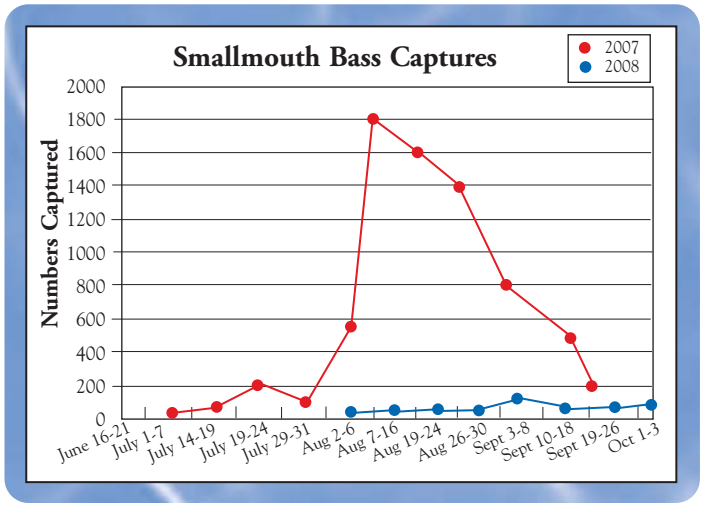
Since northern pike removal efforts began in 1999, many of the larger, more predacious fish have been removed from critical habitat in the Yampa River.

Removal efforts have reduced the abundance of adult channel catfish in high-priority upper and lower sections of the San Juan River where channel catfish numbers were highest.

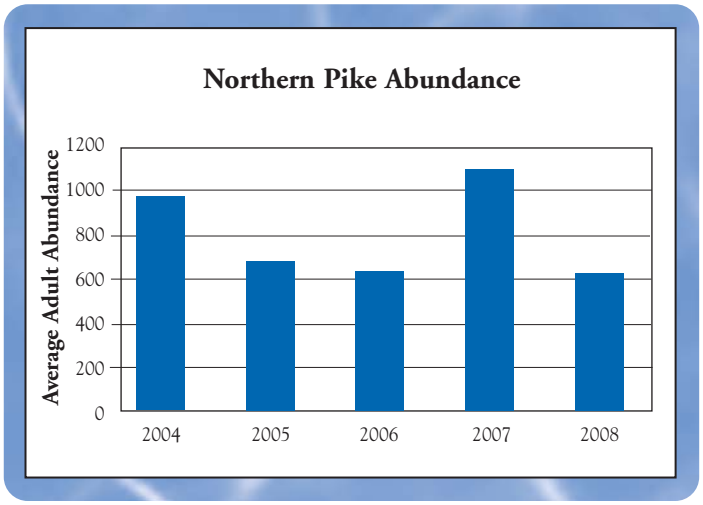
The recovery programs' progress to reduce abundance of nonnative fishes over the past 10 years is summarized below.

River	Species	History and Current Status
Colorado (112 miles) [a]	smallmouth bass	• Increases in abundance first observed in 2003; removal began in 2004. • Abundance declined during 2006-2008; more removal passes added in 2007 to increase captures. • Largemouth bass are an emerging problem; catch of young fish has steadily increased since 2004.
Green (198 miles) [a]	smallmouth bass	• Increases in abundance first observed in 2003; removal began in 2004. • Adult abundance declined over 50 percent throughout much of the Green River during 2004-2006. • Increased efforts in 2007 (continued in 2008) removed as much as 90 percent of the estimated adult population in certain high concentration areas.
	northern pike	• Since removal began in 2001, abundance has decreased by over 90 percent.
Yampa (94 miles) [a]	smallmouth bass	• Increases in abundance first observed in 2003; removal began in 2004. • Results through 2007 indicated the adult population was declining; however, substantial reproduction occurred in 2006 and 2007. • Average flows in 2008 in the Yampa, Green, and Colorado rivers appears to have negatively affected reproduction ***(see smallmouth bass graph on next page)***.
	northern pike	• Abundance steadily increased during the 1980s and 1990s; removal began in 1999. • Removal through 2007 shifted the size to smaller individuals; in 2008, the overall abundance in critical habitat was near its lowest level ***(see northern pike graph on next page)***.
San Juan (164 miles) [a]	channel catfish	• Within intensively managed areas, channel catfish abundance has significantly declined since the initiation of nonnative fish removal ***(see channel catfish graph on next page)***.
	common carp	• Through nonnative fish management and stocking of endangered fishes, collections of Colorado pikeminnow outnumbered common carp during annual fish community monitoring in 2008.

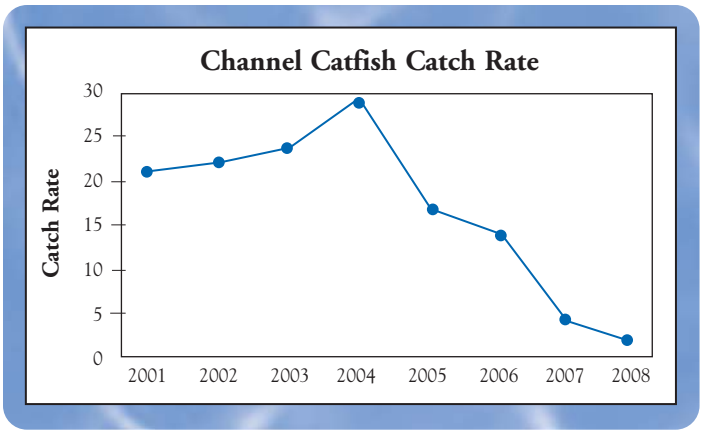
[a] *River miles where removal work occurred in 2008.*



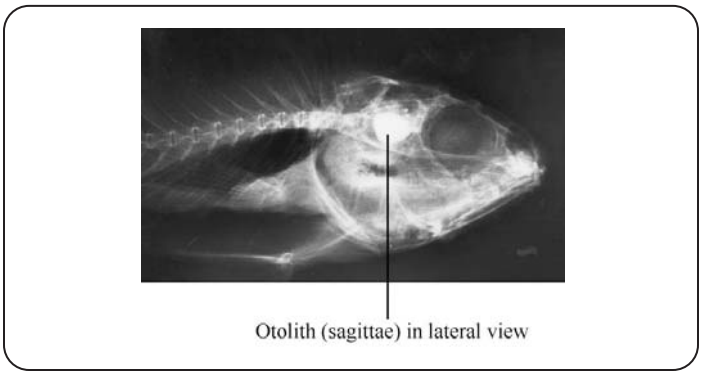
Average flow conditions in 2008 may have reduced smallmouth bass reproduction. Shown here are the numbers of juvenile smallmouth bass captured from 24 miles of the Green River in 2008 compared with the low-flow year of 2007.



Annual abundance of adult northern pike in a 70-mile reach of critical habitat in the Yampa River.



Intensive removal in a high-priority reach of the San Juan River reduced channel catfish abundance.



The chemical composition of fish otoliths (ear bones) are analyzed to identify sources of nonnative smallmouth and largemouth bass in rivers of western Colorado. This information will help determine the most cost-effective and efficient management methods.

Nonnative fish management actions of the recovery programs 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 local off-channel ponds and reservoirs accessible to local anglers.

Channel catfish removed from the San Juan River are stocked in Navajo Nation ponds to enhance sportfishing.

A barrier net installed at Highline Lake in western Colorado prevents escapement of nonnative fish while a sportfishery is maintained.

The Little Rascals Pond in Craig, Colorado, receives smallmouth bass removed from the Yampa River.

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 and achieve the demographic criteria of the recovery goals (*see results on pages 16-17*). The recovery programs continue to monitor survival and reproduction of stocked fish to evaluate and improve stocking strategies.

Ouray National Fish Hatchery, Vernal, UT

Grand Valley Endangered Fish Facility, Grand Junction, CO

Wahweap State Fish Hatchery, Big Water, UT

Dexter National Fish Hatchery & Technology Center, Dexter, NM

Uvalde National Fish Hatchery, Uvalde, TX

J.W. Mumma Native Aquatic Species Restoration Facility, Alamosa, CO

The recovery programs fund six hatchery facilities to produce the fish necessary to meet the stocking targets.

Fish Stocked in 2007 and 2008 to Meet Annual River Stocking Targets

Species	River	Annual River Target	Fish Stocked 2007	Fish Stocked 2008
Colorado pikeminnow	San Juan	303,000	479,226	275,105
Razorback sucker	San Juan	11,400	16,933	4,444[a]
	Colorado and Gunnison	9,930	10,098	12,949
	Middle Green	9,930	11,014	11,677
	Lower Green	9,930	8,539	10,161
Bonytail	Colorado	5,330	5,570	5,896
	Middle Green	5,330	5,409	7,641
	Lower Green	5,330	5,404	5,336

[a] *The additional fish to meet the annual river target are being held at Uvalde National Fish Hatchery to stock in 2009.*

The Navajo Nation raised 2,393, 12-inch razorback suckers in Hidden Pond at the San Juan River Program's grow-out facility on the Navajo Indian Reservation in northern New Mexico and stocked them in the river in 2008.

A stocked razorback sucker recaptured from the Green River in 2007. Recaptures of stocked razorback suckers reaching adulthood and sexual maturity continue to increase throughout the Upper Colorado River Basin.

Since implementation of the 2003 stocking plans:

◇ About 137,000 subadult razorback suckers, 79,000 subadult bonytails, and 4,600 subadult Colorado pikeminnows have been stocked in the upper Colorado River system.

◇ About 1.7 million juvenile Colorado pikeminnows and 45,000 subadult or adult razorback suckers have been stocked in the San Juan River.

◇ Bonytails raised at Colorado's J.W. Mumma Native Aquatic Species Restoration Facility are exposed to flowing water so that stocked fish can better cope with local habitat conditions in the wild and increase their ability to survive.

◇ Colorado pikeminnows are stocked in the San Juan River following a "soft" release strategy that consists of holding fish in low-velocity, off-channel habitats for 1–7 days prior to gaining access to the river's main stem. This strategy allows the stocked fish to gradually acclimate to local water conditions.

◇ Results of a 2007–2008 research study on stocked razorback sucker survival show that first-year survival significantly improves when fish larger than 12 inches are stocked during fall–spring. Based on these results, the recovery programs are evaluating the need to revise razorback sucker stocking plans and the capacity of hatchery facilities to accommodate those changes.

Hatcheries provide endangered fish for educational exhibits such as this aquarium at the Carl Hayden Visitor Center at Glen Canyon Dam in Page, Arizona.

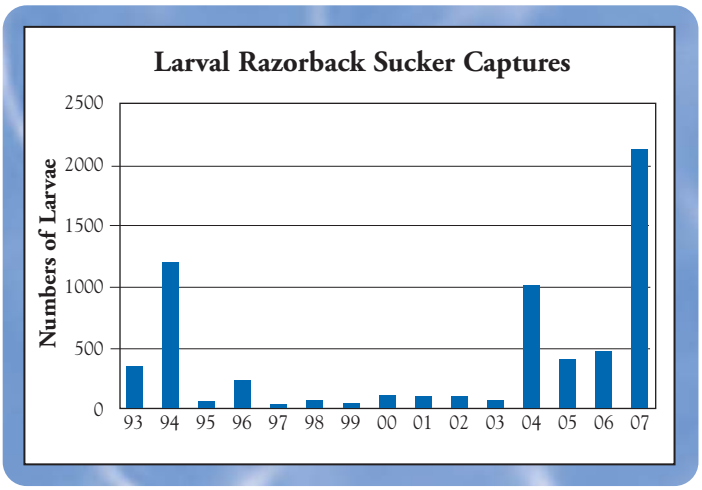
Fifth-grade classrooms established aquariums with endangered fish at a dozen schools in western Colorado. Students care for the fish during the school year and help tag and release them into the river.

Research and Monitoring Track Endangered Fish Status and Support Adaptive Management

The recovery programs' research and monitoring projects generate information on reproduction, growth, survival, and abundance of endangered fish. This information is used to track progress toward achieving the recovery goals, assess the effectiveness of management actions, and adjust recovery efforts through adaptive management.

RAZORBACK SUCKER (*Xyrauchen texanus*)

Efforts to reestablish populations through stocking demonstrate success as stocked fish survive to sexual maturity and reproduce. Before stocking began, less than 100 wild adults were estimated to occur in the Green River system, and wild fish were considered gone from the upper Colorado and San Juan River systems.



Captures of razorback sucker larvae track annual reproduction in the middle Green River. Numbers of larvae in 2007 were the highest ever recorded.

◇ Fish stocked in the Colorado, Green, and San Juan rivers are recaptured in reproductive condition and often in spawning groups. Captures of larvae in the Green, Gunnison, Colorado, and San Juan rivers document reproduction.

◇ Survival of larvae through the first year is evidenced by captures of juveniles in the Green, Gunnison, and San Juan rivers.

◇ Stocked fish 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.

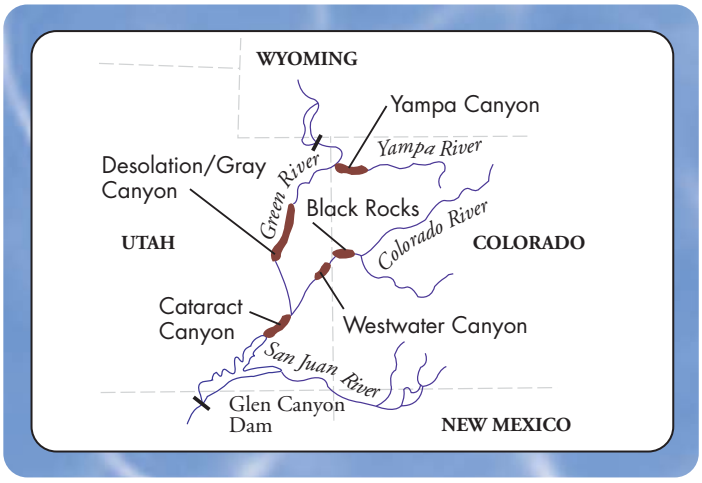
HUMPBACK CHUB (*Gila cypha*)

Five wild populations inhabit canyon-bound sections of the Colorado, Green, and Yampa rivers (*see map below*). Downward trends in some populations have been attributed to increased abundance of nonnative fishes and habitat changes associated with dry weather and low river flows.

◇ About 3,000 adults occur in the Black Rocks and Westwater Canyon core population in the Colorado River.

◇ About 1,000 adults occur in the Desolation/Gray Canyon core population in the Green River.

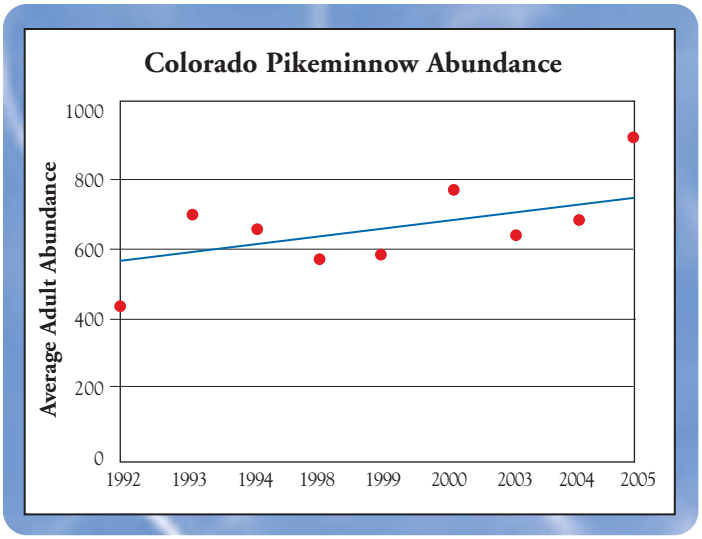
◇ Populations in Yampa and Cataract canyons are small, each consisting of up to a few hundred adults. *Gila* species collected from the Yampa River are being raised in two hatcheries for possible use as humpback chub brood stocks for future propagation and stocking efforts.



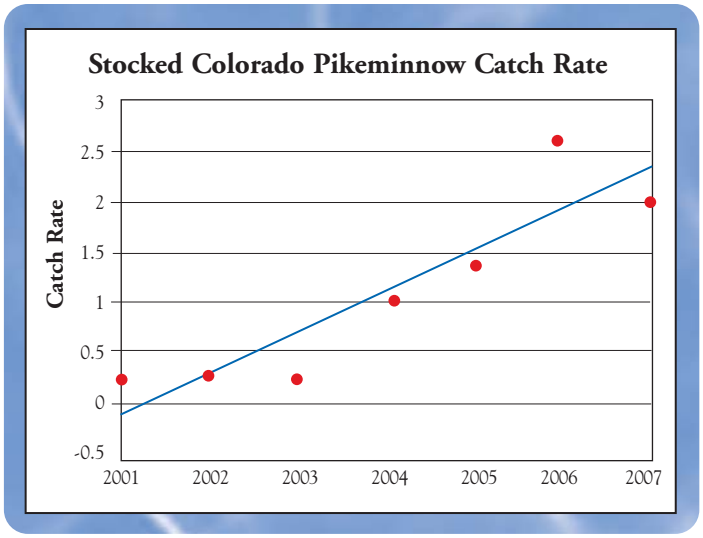
COLORADO PIKEMINNOW (*Ptychocheilus lucius*)

Two wild population centers occur in the Upper Colorado River Basin, one in the upper Colorado River system and one in the Green River system, consisting of separate spawning stocks whose young and adults mix.

Stocking continues to reestablish the species in the San Juan River. Before stocking began, an estimated 19 wild adults remained in the San Juan River. In 2005, The U.S. Fish and Wildlife Service concluded that Colorado pikeminnows and razorback suckers in the San Juan River are more secure today than during the 1980s and 1990s.



Estimated average abundance of adult Colorado pikeminnows in the upper Colorado River system increased from 440 in 1992 to 890 in 2005.



Catch rates of stocked Colorado pikeminnows collected during nonnative fish removal in the upper San Juan River have increased since 2001.

◇ Adults in the Green River system declined from 3,100 to 2,300 in 2001–2003 (next population estimate will be completed in 2009). The downward trend has been attributed to increased abundance of nonnative fishes and habitat changes associated with dry weather and low river flows.

◇ Recaptures of fish stocked in the San Juan River have steadily increased. Captures of larvae document that stocked fish are surviving to sexual maturity and reproducing.

BONYTAIL (*Gila elegans*)

Stocking continues to reestablish populations in the Upper Colorado River Basin. Before stocking began, the species had essentially disappeared and little was known about its biology. A key aspect of bonytail recovery is research and monitoring of stocked fish to determine life-history needs and ways to improve their survival.

◇ Stocked fish are being recaptured in several locations and habitats throughout the Green and upper Colorado rivers. This usually occurs within 1 year after stocking.

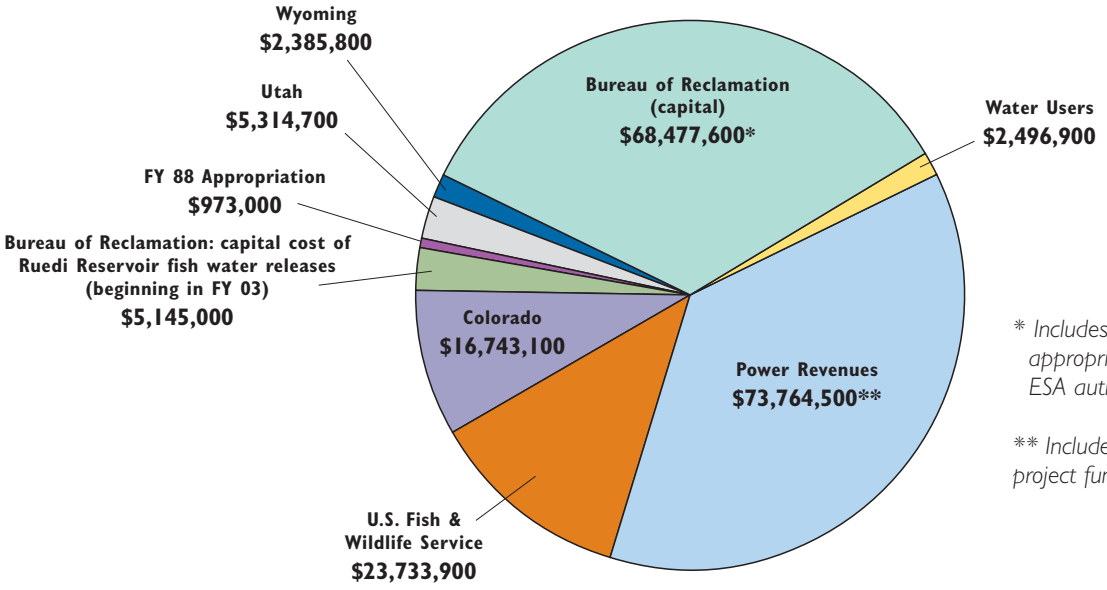
◇ Stocking efforts to reestablish bonytail populations in the Upper Colorado River Basin have expanded into floodplain wetlands to enhance their growth and survival.

Stocking bonytails in Baeser Bend Wetland, Green River, Utah.

Multiple Funding Sources Support Programs' Expenditures

Upper Colorado River Endangered Fish Recovery Program

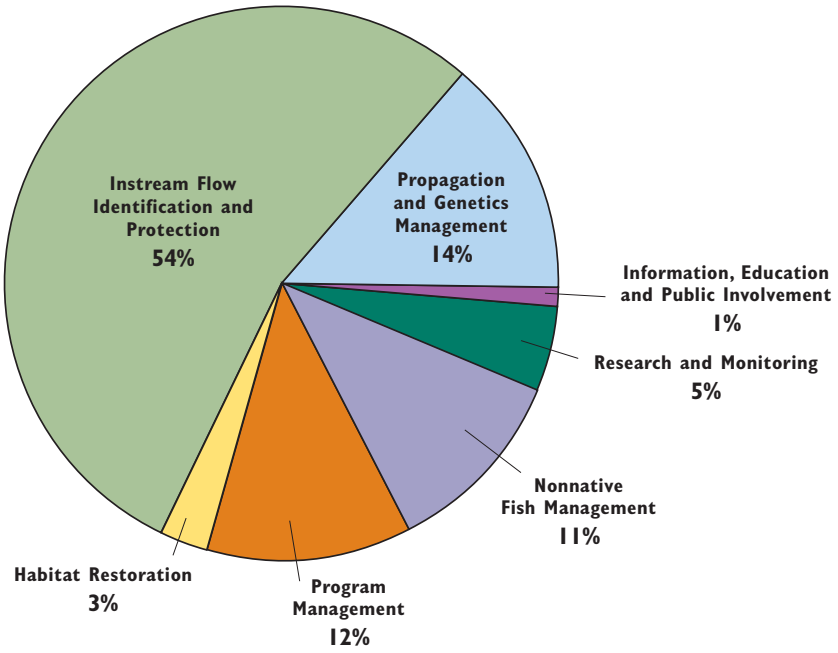
Total Partner Contributions = $199,034,500 (FY 1989-2009)



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

*** Includes both annual and capital project funding.*

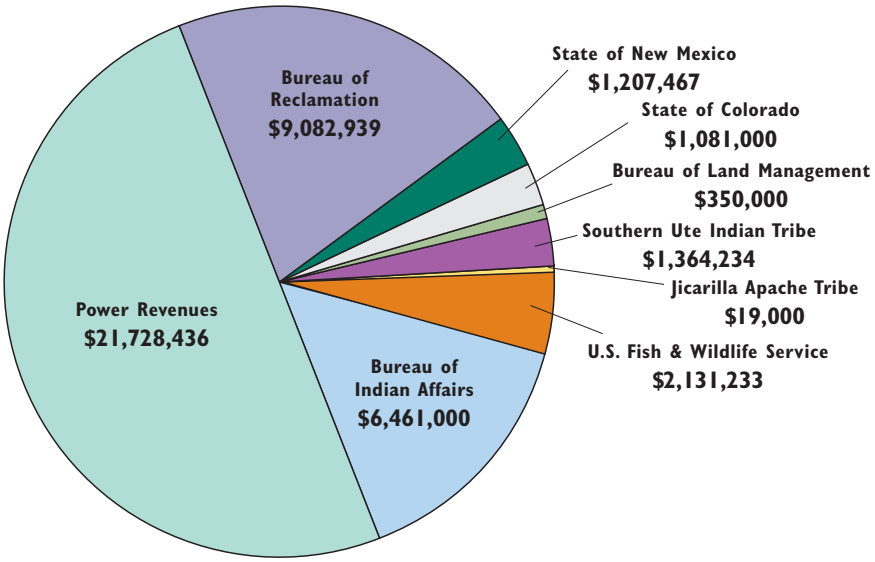
Projected Expenditures by Category (FY 2009 only)



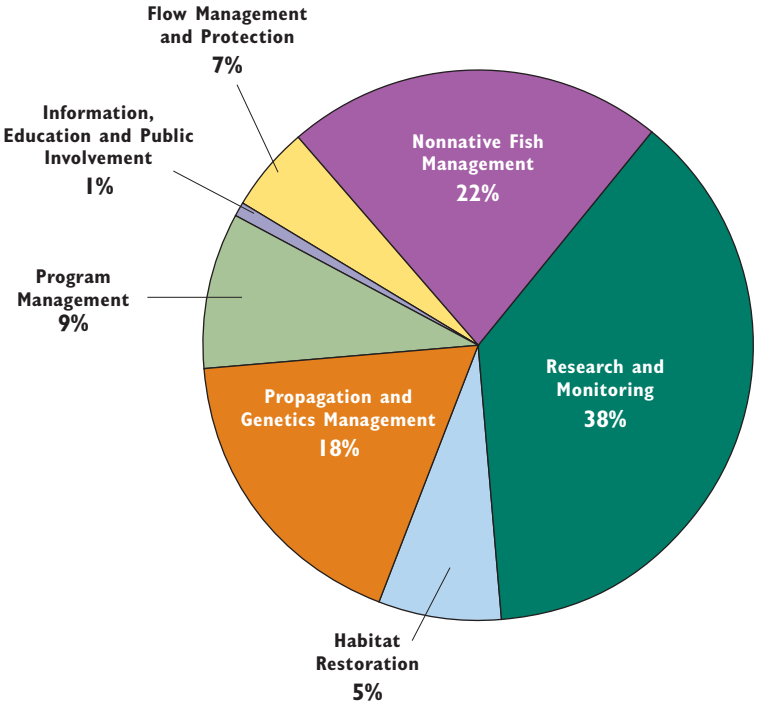
San Juan River Basin Recovery Implementation Program

Total Partner Contributions = $43,425,309 (FY 1992-2009)

(Not including in-kind contributions)



Projected Expenditures by Category (FY 2009 only)



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. Recovery 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

CRSP power revenues, totaling $17 million, have been expended for capital construction projects consistent with authorization provided in these public laws. These revenues are treated as a non-federal contribution and 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 that 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 (adjusted for inflation). 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).*

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
Jicarilla Apache Nation
Navajo Nation
Southern Ute Indian Tribe
Ute Mountain Ute Tribe
Bureau of Indian Affairs
Bureau of Land Management
Bureau of Reclamation
The Nature Conservancy
U.S. Fish and Wildlife Service
Water Development Interests

San Juan River Basin Recovery Implementation Program
2105 Osuna Rd. NE
Albuquerque, NM 87113
505-761-4745
505-346-2542 Fax
southwest.fws.gov/sjrip