

SAN JUAN RIVER BASIN

RECOVERY IMPLEMENTATION PROGRAM

FINAL

PROGRAM DOCUMENT

September 7, 2006

CONTENTS

CONTENTS	i
List of Figures	iii
List of Tables	iii
List of Appendices	iii
CHAPTER 1: INTRODUCTION	1
CHAPTER 2: SAN JUAN RIVER BASIN	2
Historic Flows	2
Fish Fauna	3
Native Fish Fauna	3
Non-native Fish Fauna	4
Water Quality	5
Water Development and Depletions	6
CHAPTER 3: SAN JUAN RIVER BASIN RECOVERY IMPLEMENTATION PROGRAM	9
Impacts to Fish Species	9
Pre-Program Consultation History	9
Species Listings	9
Critical Habitat Designation	10
Pre-Program Consultations	10
Development of the San Juan River Basin Recovery Implementation Program	11
Trust Responsibilities	11
Water Rights	12
Coordination with Other Recovery Efforts	12
Major Program Recovery Activities	12
Long-Range Plan	13
Flow Recommendations	14
Navajo Dam and Reservoir Operation	14
Fish Passages and Fish Screens	15
Non-native Fish Control	16
Stocking of Endangered Fishes	18
Razorback Sucker	18
Colorado Pikeminnow	19
Research and Monitoring	19
CHAPTER 4: RECOVERY OBJECTIVES	21
Conservation Plans	21
Razorback Sucker Recovery Goals and Criteria	22
Downlisting	22
Delisting	22
Summary of Management Actions Needed in the San Juan River Basin	23
Estimated Time to Achieve Recovery	23
Colorado Pikeminnow Recovery Goals and Criteria	24

Downlisting _____	24
Delisting _____	25
Summary of Management Actions Needed in the San Juan River Basin _____	25
Estimated Time to Achieve Recovery _____	26
CHAPTER 5: PRINCIPLES FOR CONDUCTING ENDANGERED SPECIES ACT	
SECTION 7 CONSULTATIONS _____	27
Modification of Principles _____	27
CHAPTER 6: PROCEDURES AND ORGANIZATION _____	28
Participation in the Program _____	28
Program Committees _____	29
Coordination Committee _____	29
Biology Committee _____	29
Hydrology Committee _____	30
Meeting Procedures _____	32
U.S. Fish and Wildlife Service Responsibilities _____	33
Program Peer Review Process _____	34
Annual Work Plan Development Process _____	35
Program Funding _____	38
Annual Program Base Funding _____	38
Capital Project Funding _____	39
In-Kind Services for Program Participation _____	40
Administration of Program and Recovery Funds _____	40
Program Modifications _____	41

List of Figures

Figure 1. San Juan River Basin.....	8
Figure 2. Annual Work Plan and Budget Development Process.....	37

List of Tables

Table 1. Native Fish Fauna of the San Juan River Basin	3
Table 2. Non-native Fish Fauna of the San Juan River Basin	5

List of Appendices

Appendix A. Baseline Depletions in the San Juan River Basin (Final Biological Opinion for Navajo Reservoir Operations, Colorado River Storage Project, Colorado-New Mexico-Utah, September 30, 2005)	
Appendix B. Cooperative Agreement for the San Juan River Basin Recovery Implementation Program.	
Appendix C. Principles for Conducting Endangered Species Act Section 7 Consultations on Water Development and Water Management Activities Affecting Endangered Fish in the San Juan River Basin.	

CHAPTER 1: INTRODUCTION

The San Juan River Basin Recovery Implementation Program (Program) was initiated in 1992 to conserve and recover populations of two endangered fish species in the San Juan River Basin while allowing water development to proceed in compliance with all applicable federal and state laws. As such, it is recognized and agreed that the Program is intended to provide the measures for compliance with the Endangered Species Act (16 U.S.C. 1531 et. seq.) for water development and water management activities in the basin.

Endangered fish species in the Basin are the Colorado pikeminnow and razorback sucker. It is anticipated that actions taken under this Program will provide benefits to other native fishes in the basin as well.

The specific goals of the Program are:

(1) to conserve populations of Colorado pikeminnow and razorback sucker in the Basin consistent with the recovery goals established under the Endangered Species Act, 16 U.S.C. 1531 et seq.; and

(2) to proceed with water development in the Basin in compliance with federal and state laws, interstate compacts, Supreme Court decrees, and federal trust responsibilities to the Southern Utes, Ute Mountain Utes, Jicarillas, and the Navajos.

The Program operates through its committee processes to identify the actions needed to attain these goals. The Program uses as its foundation the “Cooperative Agreement for the San Juan River Basin Recovery Implementation Program” which is incorporated by reference and is attached as Appendix A.

This Program Document provides the framework for the Program and outlines the Program’s purposes, authority, structure and operating procedures, including funding and budgeting and details the purposes of the Program’s committees, defining their composition, authority and duties. In addition, this document describes the process for conducting section 7 consultations under the Endangered Species Act (ESA), and for reviewing the progress of the Program in providing reasonable and prudent alternatives and measures for water development and water management activities in the San Juan River Basin.

The Program’s Long-Range Plan (LRP) identifies multi-year research, monitoring and recovery actions necessary to achieve the Program’s goals.

CHAPTER 2: SAN JUAN RIVER BASIN

The San Juan River Basin is the second largest of the three sub-basins which comprise the Upper Colorado River Basin (Figure 1). The San Juan River Basin drains about 38,000 square-miles of southwestern Colorado, northwestern New Mexico, northeastern Arizona, and southeastern Utah. From its origins in the San Juan Mountains of Colorado, the San Juan River flows some 31 miles to the New Mexico border, 190 miles westward to the Four Corners area, and then another 136 miles to Lake Powell. In its upper reaches, the river traverses rugged terrain and has a relatively high gradient. The river emerges from canyon-bound reaches at Navajo Reservoir in New Mexico and flows through a broad floodplain for much of its course in New Mexico and Utah. About 70 miles upstream of Lake Powell, the river again enters canyon reaches for the remainder of its course. The river is generally restricted to a single channel in canyon portions, but is often divided into several channels in floodplain reaches.

The San Juan River has comparatively few perennial tributaries, most of which are in upper reaches. Historically, the Rio Blanco, Navajo River, Piedra River, Los Pinos River, Animas River, La Plata River, Mancos River and McElmo Creek were the only perennially flowing tributaries. Other streams such as Montezuma and Chinle Creeks contributed flows seasonally. Numerous washes and arroyos also entered the river, but none provided regular flow. The Animas River contributes the greatest flow.

Historic Flows

The San Juan River exhibits highly variable annual and monthly natural flows. Prior to the construction of Navajo Dam, the hydrograph was characterized by large spring peaks resulting from snowmelt runoff and low base flows at other times of the year. Typically, spring runoff begins in March, peaks in mid-May to early June, and ends by the first week of July. The remainder of the year, natural flow is characteristically low, punctuated by large, short-duration peaks caused by summer and fall storm events. Measured flows in the San Juan River at Bluff, Utah, have ranged from a high of about 70,000 cubic-feet-per-second (cfs) to no flow at times.

Since the completion of Navajo Dam in 1962, flows immediately below Navajo Reservoir and above the Animas River confluence have been largely controlled and stabilized. Prior to the initiation of experimental flow releases from Navajo Dam in 1991 to meet needs of the endangered fish species in the San Juan River, spring peak flows were significantly reduced in magnitude, base flows were increased and stabilized, and late winter flows were increased markedly to provide storage space in the reservoir for the spring runoff. Since 1991, the reservoir has been operated to mimic a natural hydrograph with high spring peak releases of about 5,000 cfs, which is the downstream channel capacity, and low base flow releases. In addition to moderating natural flows, hypolimnetic releases from Navajo Reservoir have decreased mean annual water temperature and diminished temperature fluctuations of the San Juan River downstream to near the confluence of the Animas River.

From Navajo Dam to Lake Powell, flows in the San Juan River are supplemented by inflows from perennial and ephemeral tributary streams, arroyos and washes. Diversions of flow of the San Juan River and its tributaries are made for industrial, municipal and agricultural uses. Inflows below Navajo Dam provide the main variation in flow, including spring runoff and thunderstorm peaks.

Fish Fauna

Native Fish Fauna

Ichthyofaunal surveys of the San Juan basin prior to extensive European settlement were very limited. These surveys documented the occurrence of at least eight native fish species (Table 1): cutthroat trout, roundtail chub, Colorado pikeminnow, speckled dace, flannelmouth sucker, bluehead sucker, razorback sucker, and mottled sculpin. Based upon two specimens from skeletal remains in Native American middens, bonytail chub may also have inhabited the river. Of these species, Colorado pikeminnow, razorback sucker, and bonytail chub are listed as endangered under the Endangered Species Act of 1973. In addition, New Mexico lists the roundtail chub as endangered; Colorado classifies the flannelmouth sucker, bluehead sucker, and roundtail chub as species of special concern; and Utah lists the roundtail chub and Colorado River cutthroat trout as sensitive species.

Although Colorado pikeminnow was presumed in the San Juan Basin prior to 1900, the first confirmed records of occurrence were not until 1936 when three juveniles were captured at Alcove Canyon, Utah. Thereafter, specimens were taken from several locations in Utah, Colorado, and New Mexico. During a three-year study initiated in 1987, 10 adult and 18 young-of-year specimens of Colorado pikeminnow were captured. This effort documented the persistence of the species from about Shiprock, New Mexico, downstream to Lake Powell and successful reproduction in New Mexico and Utah. Subsequently, nine additional specimens of Colorado pikeminnow were captured between Shiprock and Four Corners in 1991 and one was observed about 5 miles upstream of Shiprock.

Razorback sucker were reported ascending the Animas River in the 1890's, but specimen confirmation of its presence in the San Juan Basin was not made until 1976 when two adults were found in a floodplain pond near Bluff, Utah. During the 1987-1990 study, razorback sucker adults were collected in the San Juan arm of Lake Powell and a single male was found near Bluff, Utah.

Occurrence of bonytail in the San Juan Basin is uncertain as the record consists only of skeletal remains from Native American middens and two questionable specimens collected prior to 1930. One specimen is a hybrid of roundtail chub and another chub species (possibly bonytail or humpback chub), and the second has not been critically examined.

Table 1. Native Fish Fauna of the San Juan River Basin

Species	Status
Colorado River Cutthroat Trout	Protected, Colorado
Roundtail Chub	Protected, New Mexico
Bonytail	Endangered, United States
Colorado Pikeminnow	Endangered, United States
Speckled Dace	Common, generally distributed but typically not numerous
Flannelmouth Sucker	Abundant, generally distributed and typically numerous
Bluehead Sucker	Abundant, generally distributed and typically numerous
Razorback Sucker	Endangered, United States
Mottled Sculpin	Rare, not generally distributed and never numerous

Among the remaining six native fish species, all persist in the basin. Cutthroat trout (Colorado River subspecies) survives in several isolated headwater tributaries. Roundtail chub is extremely rare in the San Juan and Animas rivers, but may be more common in other streams (Piedra, Los Pinos, La Plata and Mancos rivers). Mottled sculpin occurs mainly in the Animas River, but is not common. Speckled dace is generally distributed in the drainage, particularly in upper tributaries, the Animas River, and the San Juan River upstream of Bluff. Flannelmouth and bluehead suckers inhabit most reaches of the San Juan and Animas rivers as well as lower reaches of some tributaries.

Non-native Fish Fauna

Since the late 1800's, at least 40 non-native fish species have been introduced to the Upper Colorado River Basin. In the San Juan River basin, 23 non-native fish species have been reported (Table 2). Of these, 21 have been documented in the San Juan River since 1987. In warm water reaches of the mainstem San Juan River, common carp and channel catfish were the only common and generally distributed non-native fish species. Rainbow, cutthroat (Snake River subspecies), and brown trout were common in coldwater reaches of the San Juan River (including the Navajo Dam tailwater reach) and its upper tributaries. Red shiner, fathead minnow, and mosquitofish were the most common non-native species found in low-velocity habitats associated with the mainstem San Juan River. Other non-native fish species, such as black bullhead, plains killifish, green sunfish, and largemouth bass, were very rare and probably derived from upstream or downstream or from off-channel impoundments.

Some non-native fish species were introduced by federal, state, and tribal agencies to establish food or recreational fisheries while others became established as a result of bait minnow, fishermen, or accidental releases. In New Mexico and Utah, stocking of non-native warm water species has been discontinued, but non-native salmonids are still stocked in suitable habitats in Colorado and New Mexico (including the Navajo Dam tailwater reach).

Table 2. Non-native Fish Fauna of the San Juan River Basin

Species	Status and Distribution
Threadfin Shad	Lake Powell, may rarely enter riverine habitats
Cutthroat Trout (Snake River subspecies)	Common, generally distributed and typically not numerous
Rainbow Trout	Common, generally distributed and typically not numerous
Brown Trout	Common, generally distributed and typically not numerous
Kokanee Salmon	Navajo Reservoir, may rarely enter riverine habitats
Northern Pike	Lake Powell and Navajo Reservoir, may rarely enter riverine habitats
Red Shiner	Common, generally distributed and typically not numerous
Common Carp	Abundant, generally distributed and typically numerous
Golden Shiner	Navajo Reservoir, may rarely enter riverine habitats
Sand Shiner	
Fathead Minnow	
White Sucker	Rare, not generally distributed and never numerous
Black Bullhead	Rare, not generally distributed and never numerous
Channel Catfish	Abundant, generally distributed and typically numerous
Plains Killifish	
Mosquitofish	Common, generally distributed and typically not numerous
Striped Bass	Lake Powell, may rarely enter riverine habitats
Green Sunfish	Rare, not generally distributed and never numerous
Bluegill	Rare, not generally distributed and never numerous
Smallmouth Bass	Rare, not generally distributed and never numerous
Largemouth Bass	Rare, not generally distributed and never numerous
White Crappie	Lake Powell and Navajo Reservoir, may rarely enter riverine habitats
Black Crappie	Navajo Reservoir, may rarely enter riverine habitats

Water Quality

The water quality of the San Juan River is influenced by both natural and anthropogenic factors. The river exhibits the results of these influences both longitudinally and seasonally as it flows through the habitat occupied by the endangered fish species. Like much of the Western United States, the San Juan Basin is considered naturally seleniferous. Data concerning concentrations of selenium in the mainstem of the San Juan River indicate a general increase in concentration levels as distance downstream increases from Archuleta, New Mexico (downstream of Navajo Dam) to Bluff, Utah. While the mean concentration of dissolved selenium is less than 1 µg/l, 41% of the readings are above detection (1 µg/l) at Mexican Hat while there are no samples above detection at Archuleta (1994-2004 monitoring period). The maximum recorded level at Mexican Hat is 4 µg/l. Tributaries to the San Juan River carry higher concentrations of selenium than are found in the mainstem of the river immediately upstream from their confluence with the San Juan. Although these levels are diluted by the flow of the San Juan River, the net effect is a gradual increase in concentration of the element in the river as it travels downstream. Increased selenium

concentrations may also result from the introduction of ground water to the mainstem of the river along its course.

Irrigated agriculture is known to contribute selenium to the river through three potential avenues: 1) concentration of selenium in the irrigation water by evapotranspiration, 2) selenium pickup from the soils that are irrigated, and 3) selenium pickup in the shale beds underlying the irrigated areas.

Development of the oil and gas resources of the Basin, as well as other factors such as urban runoff, domestic and industrial sewage effluents, and spillage of petroleum and petroleum products, have contributed to the presence of polycyclic aromatic hydrocarbons in the biota of the San Juan River. Sampling of fish species from the San Juan River in 1990 and 1991 suggested that aquatic organisms are being exposed to high levels of hydrocarbons such as naphthalene, benzo(a)pyrene, and phenanthrene.

Studies funded by the Bureau of Land Management to monitor concentrations of hydrocarbons in the San Juan River since 1991 and studies of fish tissues taken from Colorado pikeminnow and razorback sucker captured in the river during the 1990s as part of the Program's research activities indicate that selenium and hydrocarbon concentrations in the San Juan River currently may not be a factor in limiting recovery potential for the two species. The individual effect of other environmental contaminants or their synergistic or antagonistic effects in the presence of naturally occurring or introduced elements or compounds have not been the subject of site or species specific investigations, and it is not known whether water quality is a limiting factor for recovery.

Water Development and Depletions

Between Navajo Dam and its confluence with Lake Powell, there are many points of water diversion, including a number of pumps on the San Juan River. Downstream of the dam, water is diverted by the Citizens Ditch, the Hammond Canal, the Farmers Mutual Ditch, the Fruitland Irrigation Canal, the San Juan Generating Station, the Jewett Valley Ditch, the Four Corners Power Plant, the Hogback Canal, and other water users. A portion of the diversion for the Four Corners Power Plant is returned to the San Juan River via Chaco Wash. Additional return flows enter the San Juan River from various irrigation and municipal diversions, the Animas River, the La Plata River, the Mancos River, McElmo Creek, and Montezuma Creek. Irrigation return flow from Dolores River diversions enters the San Juan River via the Mancos River and McElmo Creek, augmenting the natural flows of the San Juan River.

There are seven major diversion structures on the mainstem San Juan River in New Mexico, ranging from soil and boulder dikes to concrete and metal weirs over which the entire river flows. The most upstream of these structures are dikes and levees at the heads of the Citizens Ditch and the Hammond Canal, which are upstream of the confluence with the Animas River. The other diversion structures are located downstream of Farmington, and are the Farmers Mutual Ditch, the Fruitland canal, the San Juan Generating Station diversion, the Four Corners Power Plant pump station, and the Hogback canal. Water for the Jewett Valley Ditch is diverted approximately 1/2 mi. downstream of the San Juan Generating Station weir, and water for the Cudei project has been supplied from the Hogback Canal since 2002.

These diversions, as well as other diversions of water from the San Juan River and its tributaries, may in the future result in an average annual net depletion of San Juan River flows of up to 854,376 acre-feet per year based on the baseline depletions used by the US Fish and Wildlife Service in the Endangered Species Act section 7 consultation completed for Navajo Reservoir

operations (see the Final Biological Opinion for Navajo Reservoir operations dated September 30, 2005). The baseline depletions and return flows used in that consultation, and included in the San Juan River Basin hydrology model for the consultation purpose of evaluating impacts of reservoir operations on San Juan River flows within the critical habitat reaches, are shown in Appendix A. The depletions for some projects shown in Appendix A are not present depletions, but depletions that could result in the future upon full project development and full authorized use. The modeled baseline depletions have been derived or otherwise incorporated by federal action agencies in previous section 7 consultations on water projects, and are not necessarily concurred with by the Program participants.¹ Inclusion of the depletion quantities in Appendix A in this Program Document shall not be construed as agreement of the Program participants to these quantities. The depletion table in Appendix A is subject to review and modification as new information is developed and the San Juan River Basin Hydrology Model is refined.

¹ The Program in 2003 adopted the following model disclaimer: “While every effort will be made to incorporate the best data and modeling available into the San Juan Basin Model, use of the hydrologic model in the work of this Committee and this Implementation Program does not necessarily constitute agreement or approval by individual program participants with the model data, methodologies or assumptions. The model data, methodologies and assumptions do not under any circumstances constitute evidence of actual water use, water rights or water availability under compact apportionments and should not be construed as binding on any party. Furthermore, use of the model, model data, methodologies and assumptions does not change the responsibilities of the respective states to maintain records of water rights and water use. Official records of water rights and water use are maintained by the State agencies statutorily charged with that responsibility.”

Figure 1. San Juan River Basin

CHAPTER 3: SAN JUAN RIVER BASIN RECOVERY IMPLEMENTATION PROGRAM

Impacts to Fish Species

In 1922, representatives of the seven Colorado River Basin states of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming signed a compact dividing the consumptive use of water from the Colorado River system between the Upper Basin and the Lower Basin. The compact was ratified by the legislatures of all the states except Arizona, and the President of the United States proclaimed the compact effective in 1929. Arizona later ratified the compact in 1944. In 1948, the Upper Basin states, including Arizona, Colorado, New Mexico, Utah and Wyoming, signed the Upper Colorado River Basin Compact to apportion among them the consumptive use of water available to the Upper Basin pursuant to the Colorado River Compact. The Colorado River Storage Project (CRSP) Act in 1956 subsequently authorized for construction Glen Canyon Dam and Lake Powell on the Colorado River, Navajo Dam and Reservoir on the San Juan River, Flaming Gorge Dam and Reservoir on the Green River, and the Aspinall Unit on the Gunnison River.

The construction of these impoundments was essential for the development of water storage and flood control and to allow the Upper Basin States to develop their compact apportionments while complying with Article III of the Colorado River Compact. However, physical and biological changes to the environment, such as the modification of the natural flow regime and changes in water temperature and quality resulted from the construction of such large impoundments within the Upper Basin. This contributed to the endangerment of four native fish species of the Colorado River system. Within the San Juan River Basin, two of these species, Colorado pikeminnow and razorback sucker, inhabit the San Juan River. The other two species, bonytail chub and humpback chub, may have occurred historically in the river.

Other human-induced impacts in the San Juan River Basin included the use of selective chemical treatments applied in the San Juan River to eradicate native species and introduction via stocking of non-native sport fish species. In addition, contamination of waterways in the Basin resulting from oil and gas development, grazing and other watershed land uses, agricultural return flows and urban development, along with attendant contaminants from urban runoff and sewage effluent, has affected the aquatic environments of the San Juan River system. The effects of these and other impacts resulted in extremely low population levels of Colorado pikeminnow and razorback sucker in the San Juan River.

Pre-Program Consultation History

Species Listings

The Colorado pikeminnow and the humpback chub were listed in 1967 as endangered. Since the passage of the Endangered Species Act of 1973, two other species of Colorado River fishes have been listed as endangered. The bonytail was listed in 1980, and razorback sucker was listed in 1991. As required under section 7 of the Endangered Species Act, federal agencies whose actions may affect listed species must consult with the U.S. Fish and Wildlife Service. This is to insure

that actions undertaken by a federal agency are not likely to jeopardize the continued existence of listed species.

Critical Habitat Designation

Critical habitat is defined as the areas that provide physical or biological features that are essential for the recovery of a species. Critical habitat was designated for the Colorado pikeminnow and razorback sucker in 1994. Both species critical habitat designation is within the 100-year floodplain of the species' historical range. Colorado pikeminnow critical habitat was designated in the following section of the San Juan River Basin (59 FR 13374):

New Mexico, San Juan County; and Utah, San Juan County. The San Juan River from the State Route 371 Bridge in T. 29 N., R. 13 W., section 17, to the full pool elevation at the mouth of Neskahai Canyon on the San Juan arm of Lake Powell in T. 41 S., R. 11 E., section 26.

Razorback sucker critical habitat was designated in the following section of the San Juan River Basin (59 FR 13374):

New Mexico, San Juan County; and Utah, San Juan County. The San Juan River from the Hogback Diversion in T. 29 N., R. 16 W., section 9, to the full pool elevation at the mouth of Neskahai Canyon on the San Juan arm of Lake Powell in T. 41 S., R. 11 E., section 26.

The Service identified water, physical habitat and the biological environment as primary constituent elements of critical habitat for both Colorado pikeminnow and razorback sucker. This includes a quantity of water of sufficient quality that is delivered to specific habitats in accordance with a hydrologic regime that is required for the particular life stages of the species. The physical habitat includes areas of the Colorado River system that are inhabited or potentially habitable for use in spawning and feeding or as a nursery, or that serve as corridors between these areas. In addition, oxbows, backwaters and other areas in the 100-year floodplain, which when inundated provide access to spawning, nursery, feeding and rearing habitats, are included. Food supply, predation and competition are also considered important elements of the biological environment.

Pre-Program Consultations

Since 1977, various federal agencies have initiated actions within the upper Colorado River Basin that have required consultation with the Service. Many of these consultations were on actions initiated by the Bureau of Reclamation and the Bureau of Indian Affairs. Consultations in the late 1970's and early 1980's resulted in no jeopardy biological opinions.

Since the early 1980's two major projects have gone through section 7 consultation with the Service. These were the Animas-La Plata Project (ALP) and Navajo Indian Irrigation Project (NIIP). At the time of these consultations, a small reproducing population of Colorado pikeminnow persisted and a population of razorback sucker was documented in the river. During the section 7 consultation for ALP, the importance of the San Juan River population of endangered fish species was reevaluated and it was recognized that the current and cumulative adverse impacts of water development projects were creating conditions in the San Juan River that jeopardized the continued existence of the species. The impacts discussed in the biological opinions for the ALP and the NIIP primarily focused on water depletion and included an analysis

of impacts associated with water development such as water quality degradation, contaminants from irrigation return flows, scouring and sedimentation of the river channel, and water temperature changes. The consultations resulted in "reasonable and prudent alternatives" being developed to avoid a jeopardy determination for these projects.

During these consultations, it was recognized that in order to continue development of the waters of the San Juan River and to protect and recover the endangered fish populations within the river, a program or plan was needed whereby all entities with responsibilities for, or substantial stake in, water development or management and endangered species might work cooperatively to meet the needs of the people and conserve resources. The basis for such a program was established in the 1991 Biological Opinion for the ALP.

Development of the San Juan River Basin Recovery Implementation Program

In 1992, the Secretary of the Interior, on behalf of the US Fish and Wildlife Service (Regions 2 and 6), U.S. Bureau of Reclamation, and U.S. Bureau of Indian Affairs; the Governors of Colorado and New Mexico; and the Southern Ute Indian Tribe, the Ute Mountain Ute Indian Tribe, and the Jicarilla Apache Nation executed a Cooperative Agreement to carry out this Program (Appendix A). The Cooperative Agreement incorporates the terms, objectives and undertakings of the Program and commits each party to its timely implementation. The Cooperative Agreement has been executed under the statutory authority of the Endangered Species Act and other appropriate state, federal and tribal laws. All entities that have signed the Cooperative Agreement are referred to in this Program as the "Signatories."

The Bureau of Land Management became a participant in the Program in October 1993 as a result of a jeopardy biological opinion issued by the Service.

The Navajo Nation did not initially execute the Cooperative Agreement. The Navajo Nation, by and through a letter dated October 21, 1996, from its President to the Program Coordinator for the Program, agreed to participate in and commit itself to the timely implementation of the Program. This commitment includes the utilization of the authorities of the Navajo Nation to protect flow releases from Navajo Dam made for the purpose of benefiting endangered fish populations in the San Juan River. The Coordination Committee approved the Navajo Nation's participation in the Program on November 6, 1996.

In 2006, the Secretary of the Interior, the governors of the States of Colorado and New Mexico, the Navajo Nation, Jicarilla Apache Nation, Southern Ute Indian Tribe and Ute Mountain Ute Indian Tribe signed an extension of the cooperative agreement for the San Juan River Basin Recovery Implementation Program that will extend the Recovery Program through 2023.

Trust Responsibilities

The reservations of four federally recognized Indian tribes -- the Southern Ute Indian Tribe, the Ute Mountain Ute Tribe, the Navajo Nation and the Jicarilla Apache Nation -- are located within the San Juan River Basin. The four tribes have reserved water rights under federal law, some of which have been quantified, to provide water to the reservations for use as permanent homelands. The Secretary of the Interior has a trust responsibility to protect and maintain the trust water resources of the tribes.

The Department of the Interior intends to use its authority to the fullest extent possible to preserve and protect the water resources of the tribes in the Basin. A goal of this Program is to conserve the populations of Colorado pikeminnow and razorback sucker in the Basin while meeting the Department's trust responsibilities to the tribes.

Water Rights

Nothing in the Cooperative Agreement or this Program will be construed to affect, or to be a recognition of, the right to use water under any federal or state law or permit, federal contract, treaty or interstate compact, or to affect the right of any party in any adjudication proceeding to determine rights to use water or to contract for water.

Coordination with Other Recovery Efforts

Activities conducted under the San Juan River Basin Recovery Implementation Program are closely coordinated with the ongoing Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin. The Upper Basin Recovery Program was initiated on October 1, 1988, with the objective of recovering endangered Colorado River fishes in the Green River and Upper Colorado River sub-basins above Glen Canyon Dam. The San Juan River sub-basin was not included in that program. Efforts beneficial to the species are also underway in the Lower Colorado River Basin. Coordination with these recovery efforts reduces the overlap and duplication of recovery and research efforts, allows available resources to be focused on pressing needs in the San Juan River sub-basin, and improves the overall effectiveness of the programs.

Major Program Recovery Activities

Recovery is based on the reduction or removal of threats and the improvement of the status of a species during the time it is listed. Management actions and tasks conducted by recovery or conservation programs for listed species are expected to minimize or remove threats and improve the species' status. To delist a species, the Service must determine that the five listing factors described in section 4(a)(1) of the Endangered Species Act no longer apply (e.g., the habitat is no longer threatened with destruction or modification, the current abundance and range is adequate, and the habitat needed to sustain recovered populations is present).

The recovery goals² include site-specific management actions and tasks, as well as objective, measurable downlisting and delisting criteria. Downlisting can be considered when site-specific management actions and tasks to minimize or remove threats have been identified, developed, and implemented; delisting can be considered when those management actions and tasks have been finalized and implemented. The recovery goals also include objective, measurable

² U.S. Fish and Wildlife Service. 2002. Razorback sucker (*Xyrauchen texanus*) Recovery Goals: amendment and supplement to the Razorback Sucker Recovery Plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

U.S. Fish and Wildlife Service. 2002. Colorado pikeminnow (*ptychocheilus lucius*) Recovery Goals: amendment and supplement to the Colorado Squawfish Recovery Plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

demographic criteria that describe numbers of populations and individuals (adults and juveniles) required for consideration of downlisting and delisting.

Management, research and monitoring actions of the Program must be consistent with accomplishing the recovery goals for the populations of the two endangered fishes, Colorado pikeminnow and razorback sucker, in the San Juan River subbasin. The Program operates under recovery elements with imbedded actions that are consistent with the recovery goals. Recovery elements of the Program include:

Protection, Management and Augmentation of Habitat - This element identifies important river reaches and habitats for different life stages of the endangered fishes and makes appropriate habitat improvements, including providing flows in the San Juan River and passage around migration barriers so as to provide suitable habitat to support recovered fish populations.

Water Quality Protection and Enhancement – This element identifies and monitors water quality conditions and takes actions to diminish or eliminate identified water quality problems that limit recovery.

Interactions Between Native and Non-native Fish Species - This element identifies problematic non-native fish species and implements actions to reduce negative interactions between the endangered fish species and non-native fish species.

Monitoring and Data Management - This element evaluates the status and trends of endangered fish species, and of other native and non-native species, and measures progress toward achieving recovery goals.

Protection of Genetic Integrity and Management and Augmentation of Populations - This element insures that the Program's augmentation protocols maintain genetically diverse fish species while raising new generations of Colorado pikeminnow and razorback sucker to stock in the river system.

Long-Range Plan

The Long-Range Plan (LRP) is the Program's research, monitoring and implementation document. Using the research information provided from past studies and Program evaluation reports, the LRP outlines a multi-year proposal to guide the research and monitoring programs and recovery actions necessary to achieve the Program's goals. The LRP will indicate the logical progression and priority of implementing identified recovery actions within the San Juan River Basin that are expected to result in recovery of the San Juan River populations of Colorado pikeminnow and razorback sucker and contribute to recovery and delisting of both species. As these actions are completed, they constitute milestones marking progress of the Program toward achieving the goal of recovery of the endangered fish species. The LRP will be used as a basis for scheduling, budgeting and implementing program research, monitoring and capital project and other recovery action activities. The LRP is the basis for developing annual work plans.

The development of a comprehensive research, monitoring and recovery program was required to address the dual goals of the Program of conserving populations of endangered fish species in the San Juan River Basin and of proceeding with water resource development in the Basin. All of the Program participants recognize that the biological requirements of the endangered fish species and the management of San Juan River Basin waters are complex. The Long-Range Plan proposes a broad range of measures that will enable the Program to: (1) identify and quantify

factors which limit the abundance and survival of endangered fishes in the San Juan River; (2) develop strategies to improve the status of the populations of endangered fish species in the river; and (3) provide the means to evaluate the success of such endeavors. For the first ten years of the Program, the Program and the LRP focused on research activities. The focus of the LRP has shifted to monitoring and recovery actions.

Flow Recommendations

In May 1999, the Program's Biology Committee made recommendations as to specific flow regimes within the reaches of critical habitat in the San Juan River that the committee believed would provide for the recovery of the populations of the two endangered fish species in the river. The flow recommendations consisted of: (1) flow statistics for the San Juan River at Four Corners for spring snowmelt period peak flow rates, durations and recurrence intervals to provide for creation and maintenance of spawning and rearing habitats for endangered fish; and (2) target base flows in the San Juan River for the summer, fall and winter months, as measured by a combination of gages at Farmington, Shiprock, Four Corners and Bluff, to provide low-velocity habitats for rearing endangered fishes. The flow recommendations were adopted by the Program's Coordination Committee and have been implemented by modifying operations decision criteria for Navajo Dam to provide sufficient releases of water at times, quantities and durations necessary to meet them while maintaining the authorized purposes of the Navajo Unit.

The flow recommendations are not sacrosanct or inviolate, and are subject to change through adaptive management as new information on habitat and biological response to flows is obtained from the Program's long-term monitoring activities. Also, the flow recommendations may be relaxed during periods of extreme drought, in which insufficient flows are available to fully meet endangered fish flow demands and water user demands, without impairing the survival of existing populations of endangered fish species in the San Juan River. In response to drought in the early 2000s, agreements in 2003-2006 were made by water users on the San Juan River, and were accepted by the Bureau of Reclamation, the New Mexico State Engineer, and concurred in by the Fish and Wildlife Service, for the administration of diversions from the river and for Navajo Reservoir operations that provided for a sharing of limited water supplies among water users and fish habitat flows in the event of anticipated shortages.

Navajo Dam and Reservoir Operation

The Colorado River Storage Project (CRSP) Act authorized as storage units Lake Powell on the mainstem of the Colorado River, the Aspinall Unit on the Gunnison River, Flaming Gorge Reservoir on the Green River, and Navajo Reservoir on the San Juan River. The Bureau of Reclamation operates and maintains all four dam and reservoir units of the CRSP. Navajo Dam is located on the San Juan River in New Mexico just below the confluence with the Los Pinos River, and the reservoir area lies predominantly within New Mexico with a small portion of the reservoir area lying within Colorado. The operation of Navajo Reservoir is subject to the terms of the Upper Colorado River Basin Compact, the Colorado River Storage Project Act, and the Act of June 13, 1962, authorizing the San Juan-Chama and Navajo Indian Irrigation projects. The authorized purposes of the CRSP are: regulating the flow of the Colorado River, storing water for beneficial consumptive use, making it possible for the States of the Upper Basin to utilize, consistently with the provisions of the Colorado River Compact, the apportionments made to and among them in the Colorado River Compact and the Upper Colorado River Basin Compact,

respectively, providing for the reclamation of arid and semiarid land, for the control of floods, and for the generation of hydroelectric power, as an incident of the foregoing purposes.

Construction of the four CRSP units was critical to the development of the water resources of the Upper Basin; however, natural riverine habitats were altered due to the variation of natural flow regimes, water quality and water temperatures caused by operation of the CRSP units. A reevaluation of Navajo Reservoir operations began when Reclamation requested formal consultation with the Service under section 7 of the Endangered Species Act in 1991. The catalyst for operational changes and section 7 consultation was the proposed construction of the Animas-La Plata Project (ALP). A draft biological opinion on ALP (May 7, 1990) concluded that construction of the project would jeopardize the continued existence of the Colorado pikeminnow and razorback sucker. During this time, new hydrological investigations suggested that additional flexibility which existed in the operation of Navajo Reservoir could help offset the negative impacts of the operation of the ALP. A reduction in late fall and winter releases would allow for water availability to increase spring peaks and return the San Juan River to a more natural hydrograph that would mimic pre-dam historic flow conditions. This flexibility in flow patterns would assist in the development of a reasonable and prudent alternative to the jeopardy biological opinion and allow initial ALP construction efforts to move forward. The reasonable and prudent alternative (RPA) that was developed required Navajo Dam operations to mimic a natural hydrograph for the life of the dam. The RPA also included Reclamation's commitment to fund approximately seven years of research to determine the flow requirements for the Colorado pikeminnow and razorback sucker. The Program completed the seven-year study in 1997. As a result of the seven-year study, the Program's Biology Committee in 1999 developed quantitative flow recommendations for the San Juan River below the Animas River confluence that mimic a natural hydrograph.

The Biology Committee's May 1999 report on the flow recommendations also suggested that, based on the San Juan River Basin hydrology model, the flow recommendations could be met by operating Navajo Dam and Reservoir: (1) with a spring peak release of 5,000 cfs, which is the capacity of both the dam outlet works and the downstream channel, for one to three weeks each spring depending upon the availability of water from reservoir storage and inflows; (2) with a minimum release rate of 250 cfs during the summer, fall and winter months, with higher releases when necessary to bypass inflows for downstream senior water rights or to maintain base flows in the critical habitat reaches of the San Juan River below Farmington at or above the targeted level of 500 cfs to 1,000 cfs; and (3) spike releases of excess storage water in Navajo Reservoir during the summer, fall and winter months resulting from storm runoff. Since 1999, Navajo Reservoir has largely been operated to meet the flow recommendations, with reasonable deviations during extreme drought. A Biological Opinion on operating Navajo Reservoir to meet the flow recommendations or a reasonable alternative was completed September 30, 2005. The related Final Environmental Impact Statement on Navajo Reservoir Operations was completed in April 2006, and the Record of Decision was issued in July 2006.

Fish Passages and Fish Screens

There are seven major diversion structures on the mainstem San Juan River in New Mexico, ranging from soil and boulder dikes to concrete and metal weirs over which the entire river flows. The most upstream of these structures are dikes and levees at the heads of the Citizens Ditch and the Hammond Canal, which are upstream of the confluence with the Animas River and

are not deemed to pose a problem to fish passage. The other diversion structures are located downstream of Farmington, and are the Farmers Mutual Ditch, the Fruitland canal, the San Juan Generating Station diversion, the Four Corners Power Plant pump station, and the Hogback canal. Water for the Jewett Valley Ditch is diverted approximately 1/2 mi. downstream of the San Juan Generating Station weir, and water for the Cudei project has been supplied from the Hogback canal since 2002 when the Program funded removal of the Cudei diversion dam and installation of a siphon to connect the Cudei project to the Hogback canal to improve upstream passage for endangered fish species in the river.

In addition to the Cudei diversion, other structures had the potential to impede fish movement, particularly during low flow periods. In 2002, the Hogback diversion dam was reconstructed to provide for improved fish passage as well as improved irrigation diversion control. The Program funded that portion of the Hogback diversion reconstruction assignable to fish passage. The Program also funded the construction in 2003 and operation of a selective fish passage facility at the San Juan Generating Station diversion weir, located just downstream of Fruitland. The Program each year provides funding to the Navajo Nation to operate the selective fish passage facility. The Fruitland canal, located just above the confluence of the San Juan and La Plata rivers, and the Four Corners Power Plant diversion weir also may pose an impediment to endangered fish migration. Concerns regarding potential entrainment of endangered fish into the diversion structures located below the confluence of the San Juan and Animas rivers are being evaluated. In 2005, the Program funded the addition of fish screens to address entrainment of endangered fish at the Hogback Diversion.

Non-native Fish Control

Over 40 nonnative fish species now occur in the Upper Colorado River Basin, compared to 14 native fish species. Nonnative fishes can be numerically predominant in riverine fish habitats and communities, and negative interactions with certain warm-water nonnative fish species (particularly sportfishes) have contributed to declines in native fish populations. The August 1, 2002 *Colorado Pikeminnow (Ptychocheilus lucius)*, and *Razorback Sucker (Xyrauchen texanus)* Recovery Goals identified predation or competition by nonnative fish species as a primary threat to the continued existence or the reestablishment of self-sustaining populations of these endangered fishes.

The recovery goals require that management actions to address threats posed by nonnative fishes be implemented in two steps: (1) develop management programs to identify the levels of management needed to minimize or remove the threat for selected species in selected river reaches (requirement for downlisting), and (2) implement the identified levels of nonnative fish management (requirement for delisting). Nonnative fish management actions conducted by the Recovery Program are consistent with these requirements.

The goals of the Program and its participating partners, with respect to nonnative fish management, are:

1. Nonnative fish management will occur to attain and maintain fish communities where populations of the endangered and other native fish species can persist and thrive, and the recovery goals for the endangered fishes can be achieved.
2. Management of nonnative fishes will be conducted as needed. Implementation of an

effective nonnative fish management program is an adaptive process. As strategies are developed and implemented, they will be evaluated and revised based on results of research and monitoring.

3. Because nonnative fish species targeted for management may have sportfish value to the angling public, the dual responsibilities of State and Federal fish and wildlife agencies to conserve listed and other native species while providing for recreational fishery opportunities will be considered in nonnative fish management strategies developed and implemented by the Program. This consideration will include consultation and approval from the State wildlife agencies prior to implementation of nonnative fish management actions.
4. Agency and public understanding of the purpose and scope of nonnative fish management actions by the Program and its participating agencies is critical to the success of the effort. Recovery Program partners agree to support and actively participate in public communication and involvement.

The impact of non-native species on native fish populations is an ongoing concern for the Program. The establishment of non-native fish populations negatively impacts native fishes through direct competition for habitat and resources or through predation. While many large bodied non-native fish species occur throughout the San Juan River, the Program's research results show that the most abundant and widespread is the channel catfish. The earliest report of channel catfish in the San Juan basin was 1957, but it is likely the species was present prior to this. Channel catfish occupy all available habitat types on a year-round basis, exhibit localized movement, and the larger individuals prey upon native fish. Channel catfish survive within the San Juan River without substantial exploitation from humans.

The second most abundant large bodied non-native fish in the San Juan River is the common carp. The first introductions in New Mexico occurred in 1883 from stock produced by the US Fish Commission. Common carp occupy a wide variety of habitats in the river and constitute a large proportion of the total weight of fish present due to their omnivorous feeding habits. The common carp is often considered a pest species because it alters habitat through increased turbidity, uproots aquatic vegetation, feeds on the eggs of more desirable species and is not considered a favorable food fish in the United States.

In addition to channel catfish and common carp, Program survey revealed the presence of three lake fish species including threadfin shad, walleye and striped bass. The source of these fish is believed to be the inundation of the waterfall at river mile (RM) 0.0 at Lake Powell, which occurred in the spring of 1995.

Opportunistic removal of non-native fishes began in 1996 and was formally adopted as a management tool in 1998. The Service's New Mexico Fishery Resources Office (NMFRO) evaluated numerous capture techniques and determined that raft mounted electrofishing was the most efficient method to remove large bodied non-native fish. Removal efforts by NMFRO officially began in 1998 with intensified efforts beginning in 2001. Efforts focused on a 7.6-mile reach of river located near Fruitland, New Mexico, between the Hogback diversion dam and the San Juan Generating Station diversion weir. Data suggested that large adult channel catfish and common carp were common in this reach and were limited upstream of the San Juan Generating Station diversion weir. Efforts in 2004 marked the fourth consecutive year of removal between the San Juan Generating Station and the Hogback diversions (RM 166.6 - 159.0).

Due to seasonal variance in catch rates of non-native fishes, efforts have been expanded to include an additional 11.1 river miles immediately downstream from the Hogback diversion dam. Mark/recapture work conducted by NMFRO documented upstream movement into the study reach by channel catfish and common carp. These movement patterns correspond to the construction of a non-selective fish ladder completed in 2001 at the Hogback diversion dam. The Hogback fish ladder allows for unobstructed movement by all fish species, including non-natives. Opportunistic removal of non-native fish riverwide has also occurred during sub-adult and adult fish monitoring trips since 1996.

Stocking of Endangered Fishes

Within the San Juan River Basin, viable wild populations of razorback sucker and Colorado pikeminnow currently do not exist. It is recognized that self-sustaining populations need to be established through augmentation with hatchery produced fish. The recovery plans for both species specifically identify augmenting populations as a necessary course of action for recovery. The following is a summary of the Program's augmentation plans for razorback sucker and Colorado pikeminnow.

Razorback Sucker

A successful experimental stocking program for razorback sucker from 1994 to 1996 led to the initiation of a five-year augmentation effort beginning in 1997. The five-year augmentation plan for the species recommended stocking 73,482 razorback suckers between 1997 and 2001. However, difficulties in obtaining enough razorback sucker stock from outside sources and the lack of hatchery and grow-out facilities owned by the Program created large stocking shortfalls. In order to improve the razorback sucker augmentation effort, the Program in 1997 began to develop a series of grow-out facilities which consisted of nine grow-out ponds on Navajo Indian Irrigation Project (NIIP) lands southwest of Farmington, New Mexico. Additionally, because of the large stocking shortfalls, the Program amended and extended the stocking program through 2011. However, although the extended stocking program called for stocking 11,400 age-2 razorback suckers (> 300 mm TL) per year beginning in 2004, only a total of 2,989 razorbacks were stocked in that year. Causes for the shortfall from the NIIP grow-out ponds are numerous, including lower than expected production rates, predation by birds and salamanders, and unexpected large fish kills. The Program in 2005 funded the installation of aerators in the NIIP grow-out ponds to eliminate fish kills resulting from low dissolved oxygen levels and the operation of noise cannons at the ponds to deter birds from the sites.

Because of the shortfall issues encountered at the NIIP grow-out ponds, the Program diversified its razorback production strategy in 2006 by acquiring hatchery-reared razorback sucker (> 300 mm TL) from several other facilities in addition to those raised at the ponds for stocking into the San Juan River. Pursuant to the stocking plan and the Program's genetics management plan for razorback sucker, the objectives for razorback sucker augmentation include:

1. producing and rearing genetically-appropriate lots of razorback sucker at the Dexter National Fish Hatchery;
2. annually stocking grow-out ponds with 20,000 hatchery-reared fish (> 200 mm TL) from the Dexter National Fish Hatchery;
3. annually harvesting, PIT tagging and stocking approximately 4,000 razorback sucker (> 300 mm TL) from grow-out ponds into the San Juan River; and

4. annually procuring approximately 8,000 PIT-tagged razorback sucker (> 300 mm TL) from other hatchery facilities and stocking them into the San Juan River.

Colorado Pikeminnow

In 2003, the Program finalized an Augmentation Plan for Colorado pikeminnow in the San Juan River. The augmentation plan called for annually stocking > 300,000 age-0 Colorado pikeminnow into the San Juan River for seven years (2003-2009) in order to facilitate establishing a population of > 800 adult Colorado pikeminnow in the river between the Animas River confluence and Lake Powell (i.e., within the riverine portion of Colorado pikeminnow critical habitat in the San Juan River). The first stocking occurred in October 2002 while the augmentation plan was still in draft form. At that time, the draft augmentation plan called for 250,000 age-0 fish to be stocked annually (this number was increased to > 300,000 age-0 fish in the final version of the plan). In the summer of 2002, a contract was established with the Dexter National Fish Hatchery to provide > 300,000 age-0 Colorado pikeminnow for stocking throughout the duration of this augmentation effort. Between 2002 and 2004, a total of 666,346 age-0 Colorado pikeminnow from the Dexter National Fish Hatchery were stocked into the San Juan River. The augmentation plan called for 850,000 age-0 fish to be stocked over this same time period. This represented a shortfall of 183,654 in the number of fish stocked over the three-year period. In addition to stocking age-0 fish between 2002 and 2004, the Program obtained two lots of age-1 and age-2 Colorado pikeminnow from the J. W. Mumma Native Species Hatchery (Mumma) in Alamosa, Colorado. From these lots, 1,005 age-1 fish (2002 year-class) were stocked into the San Juan River on November 6, 2003, and 1,219 age-2 fish (2002 year-class) were stocked into the river on June 9, 2004. While the recapture rate among Mumma fish stocked in 2003 (i.e., age-1) is low, the short-term recapture rate among Mumma fish stocked in 2004 (i.e., age-2's) was relatively high.

Pursuant to the stocking plan and the Program's genetics management plan for Colorado pikeminnow, the objectives for Colorado pikeminnow augmentation included:

1. producing and rearing genetically-appropriate lots of Colorado pikeminnow at the Dexter National Fish Hatchery;
2. annually stocking 300,000 age-0 Colorado pikeminnow in the San Juan River; and
3. annually stocking 3,000 age-1 Colorado pikeminnow in the San Juan River.

Research and Monitoring

Standardized, quantitative monitoring of San Juan River endangered fish species populations is necessary to document the Program's progress toward achieving the recovery goals for the San Juan River populations of Colorado pikeminnow and razorback sucker set by the US Fish and Wildlife Service in the recovery plans approved for the species in 2002, and to evaluate the management actions taken by the Program to reach these recovery goals under the policy of adaptive management. To the extent possible, habitat monitoring should be closely coordinated and integrated with population monitoring to allow assessment of changing habitat availability and fish use in response to management actions and population recovery. Program research must be in support of recovery actions, be based on scientifically-sound and testable hypotheses, and be directly relevant to endangered fish species recovery goals.

Objectives for the Program's monitoring activities include:

1. making population estimates for razorback sucker to assess progress toward recovery, survival of different life stages, response to recovery actions, additional stocking needs, and possible hybridization with other sucker species;
2. making population estimates for Colorado pikeminnow to assess progress toward recovery, survival of different life stages, response to recovery actions, and additional stocking needs;
3. evaluating the relative abundance of native fish species and non-native fish species to assess response to recovery actions and enhanced endangered fish populations;
4. periodically evaluating potential limiting factors, augmentation plans and recovery goals;
5. determining important razorback sucker and Colorado pikeminnow habitats and limiting factors for each life stage; and
6. determining the availability, creation and maintenance of important habitats in relation to the streamflow regime and adaptively managing the flow recommendations based upon these findings.

CHAPTER 4: RECOVERY OBJECTIVES

The recovery objectives for the razorback sucker and the Colorado pikeminnow are downlisting, followed by delisting of the species under the Endangered Species Act. Recovery goals have been developed for the razorback sucker and the Colorado pikeminnow by recovery teams, which are advisory teams of experts established under section 4 of the Endangered Species Act. The recovery goals for both species are published in recovery plans that were approved by the Service in 2002, and include target sizes for populations of each in the San Juan River. The recovery goals provide specific management actions, measurable downlisting and delisting criteria, and estimates of the time required to achieve recovery of each of the endangered fish species. A status review for both species is conducted at least once every five years.

The Program seeks to determine and implement recovery actions to meet the recovery goals stated for the San Juan River populations of Colorado pikeminnow and razorback sucker. Although considerable research and planning are required to maximize the effectiveness of the Program's recovery actions, the Program participants recognize that action is required. Management actions and capital projects need to be implemented expeditiously to improve the habitat for and status of the populations of endangered fish species in the San Juan River and to allow water development in the San Juan River Basin to proceed in compliance with federal and state laws.

The recovery goals and criteria are summarized below for each species. The recovery goals and criteria are based on the best available commercial and scientific information and are structured to attain a balance between reasonably achievable criteria and ensuring the viability of the species beyond delisting. The recovery criteria may need to be reevaluated and revised after self-sustaining populations are established and there is an improved understanding of the biology of the species.

The specific management actions and downlisting and delisting criteria that apply to the razorback sucker and Colorado pikeminnow throughout the Colorado River system are described in the recovery plans for each species. The recovery plans are available for viewing and downloading at <http://www.r6.fws.gov/crrip/rg.htm>.

Conservation Plans

Conservation plans for razorback sucker and Colorado pikeminnow will go into effect at delisting to provide for long-term management and protection of the species, and to provide reasonable assurances that recovered species populations will be maintained without the need for relisting. Elements of the conservation plans could include: provision of flows for maintenance of habitat conditions required for all life stages of the species; regulation and/or control of non-native fishes; minimization of the risks of spills of hazardous materials; and monitoring of populations and habitats. In order for delisting of a species to occur, State agencies, Federal agencies, Indian tribes, and possibly other parties may need to sign agreements to provide for implementation of a conservation plan for that species.

Razorback Sucker Recovery Goals and Criteria

Objective, measurable criteria for recovery of razorback sucker in the Colorado River Basin were developed for each of two recovery units, which are the upper basin and the lower basin.³ Recovery of the species is considered necessary in both the upper and lower basins. Without viable wild populations, self-sustaining populations will need to be established through augmentation with hatchery-produced fish.

Downlisting

Downlisting can occur if, over a five-year period:

1. genetically and demographically viable, self-sustaining populations are maintained in the Green River subbasin and EITHER in the upper Colorado River subbasin or the San Juan River subbasin such that: (a) the trend in adult (age 4+;>400mm TL) point estimates for each of the two populations does not decline significantly; (b) the mean estimated recruitment of age-3 (300-399 mm TL) naturally produced fish equals or exceeds mean annual adult mortality for each of the two populations; and (c) each point estimate for each of the two populations exceeds 5,800 adults (5,800 is the estimated minimum viable population [MVP] needed to ensure long-term genetic and demographic viability);
2. a genetic refuge is maintained in Lake Mojave in the lower basin recovery unit;
3. two genetically and demographically viable, self-sustaining populations are maintained in the lower basin recovery unit (e.g., Colorado River mainstream and/or tributaries) such that: (a) the trend in adult point estimates for each population does not decline significantly; (b) mean estimated recruitment of age-3 naturally produced fish equals or exceeds mean annual adult mortality for each population; and (c) each point estimate for each population exceeds 5,800 adults; and
4. certain site-specific management tasks to minimize or remove threats have been identified, developed and implemented.

Delisting

Delisting can occur if, over a three-year period beyond downlisting:

1. genetically and demographically viable, self-sustaining populations are maintained in the Green River subbasin and EITHER in the upper Colorado River subbasin or the San Juan River subbasin such that: (a) the trend in adult point estimates for each of the two populations does not decline significantly; (b) mean estimated recruitment of age-3 naturally produced fish equals or exceeds mean annual adult mortality for each of the two populations; and (c) each point estimate for each of the two populations exceeds 5,800 adults;
2. a genetic refuge is maintained in Lake Mojave;
3. two genetically and demographically viable, self-sustaining populations are maintained in the lower basin recovery unit such that: (a) the trend in adult point estimates for each population does not decline significantly; (b) mean estimated recruitment of age-3

³ The upper basin includes the Green River, upper Colorado River, and San Juan River subbasins, and the lower basin includes the Colorado River mainstem and its tributaries from Glen Canyon Dam downstream to the southerly International Boundary with Mexico.

- naturally produced fish equals or exceeds mean annual adult mortality for each population; and (c) each point estimate for each population exceeds 5,800 adults; and
4. certain site-specific management tasks to minimize or remove threats have been finalized and implemented, and necessary levels of protection are attained.

Summary of Management Actions Needed in the San Juan River Basin

The recovery plan for razorback sucker lists the following management actions applicable to recovering and conserving the San Juan River Basin population:

1. reestablish the San Juan River population with hatchery-produced fish;
2. provide habitat in the San Juan River, including flow regimes necessary to restore and maintain needed environmental conditions, necessary to provide adequate habitat and sufficient range for all life stages to support a recovered population of razorback sucker in the river;
3. provide passage over, around or through fish migration and movement barriers within occupied habitat to allow unimpeded movement and, potentially, range expansion;
4. minimize entrainment of sub-adults and adults at diversion structures, including ditch headings and pumping stations;
5. provide for adequate protection against over-utilization;
6. provide for adequate protection against diseases and parasites;
7. regulate non-native fish introduction, stocking and escapement into the San Juan River and its floodplains and tributaries;
8. control invasive, detrimental non-native fishes as needed;
9. minimize the risks of spills of hazardous materials within critical habitat;
10. remediate water quality problems, if any;
11. minimize the threat of hybridization with white sucker; and
12. provide for the long-term management and protection of the population and its habitat beyond delisting (i.e., develop and implement a conservation plan for the population).

Estimated Time to Achieve Recovery

Time to achieve recovery of the razorback sucker cannot be accurately estimated until self-sustaining populations are established through augmentation and habitat enhancement. Extant populations of razorback sucker are small with little or no recruitment. Therefore, the use of hatchery fish (progeny of cultured brood stock) will be necessary to establish new populations or augment existing populations. The rate at which populations become established will depend on survival of stocked fish in the wild, integration of stocked fish with wild stocks, reproductive success, and recruitment. Response of the species to ongoing management activities will need to be assessed through monitoring leading to the development of strategies for recovery. Estimates of time to achieve recovery will be reevaluated periodically. Based on current information and associated uncertainties, it is estimated that a self-sustaining population of razorback sucker may be established in the San Juan River within fifteen years. During this time, population dynamics and responses to management actions will be evaluated.

For razorback sucker populations to be self-sustaining, reproduction and recruitment must occur at a rate to maintain at a minimum a population of 5,800 adults. When this occurs, the definition of a “self-sustaining” population is met, and the “clock” starts on the downlisting and delisting process.

Once a self-sustaining population is established, reliable population estimates, based on a multiple mark-recapture model, are needed over a five-year monitoring period for downlisting and over a three-year monitoring period beyond downlisting in order to achieve delisting. The Service will assess the accuracy and precision of each point estimate in cooperation with the respective recovery or conservation programs and in consultation with investigators conducting the point estimates and qualified statisticians and population ecologists. The first reliable point estimates are expected by 2015. If those estimates are acceptable to the Service and all recovery criteria are met, including establishment of a self-sustaining population, downlisting could be proposed in 2020 and delisting could be proposed in 2023.

Colorado Pikeminnow Recovery Goals and Criteria

Objective, measurable criteria for recovery of Colorado pikeminnow in the Colorado River Basin were developed for the Upper Colorado River Basin (including the Green River, upper Colorado River, and San Juan River subbasins). Recovery of the species is considered necessary only in the upper basin because of the status of populations and because information on Colorado pikeminnow biology support application of the metapopulation concept to extant populations. The need for self-sustaining populations in the lower basin and associated site-specific management actions and tasks necessary to minimize or remove threats will be reevaluated at the status review of the species.

Downlisting

Downlisting can occur if, over a five-year period, the upper basin metapopulation is maintained such that:

1. a genetically and demographically viable, self-sustaining population is maintained in the Green River subbasin such that: (a) the trends in separate adult (age 7+; >450 mm TL) point estimates for the middle Green River and the lower Green River do not decline significantly; (b) the mean estimated recruitment of age-6 (400-449 mm TL) naturally produced fish equals or exceeds mean annual adult mortality for the Green River subbasin; and (c) each population point estimate for the Green River subbasin exceeds 2,600 adults (2,600 is the estimated minimum viable population [MVP] needed to ensure long-term genetic and demographic viability);
2. a self-sustaining population of at least 700 adults (number based on inferences about carrying capacity) is maintained in the upper Colorado River subbasin such that: (a) the trend in adult point estimates does not decline significantly; and (b) the mean estimated recruitment of age-6 naturally produced fish equals or exceeds mean annual adult mortality;
3. a target number of 1,000 age-5+ fish (>300 mm TL; number based on estimated survival of stocked fish and inferences about carrying capacity) is established through augmentation and/or natural reproduction in the San Juan River subbasin; and
4. certain site-specific management tasks to minimize or remove threats have been identified, developed and implemented.

Delisting

Delisting can occur if, over a seven-year period beyond downlisting, the upper basin metapopulation is maintained such that:

1. a genetically and demographically viable, self-sustaining population is maintained in the Green River subbasin such that: (a) the trends in separate adult point estimates for the middle Green River and the lower Green River do not decline significantly; (b) the mean estimated recruitment of age-6 naturally produced fish equals or exceeds mean annual adult mortality for the Green River subbasin; and (c) each population point estimate for the Green River subbasin exceeds 2,600 adults;
2. either the upper Colorado River subbasin self-sustaining population exceeds 1,000 adults OR the upper Colorado River subbasin self-sustaining population exceeds 700 adults and San Juan River subbasin population is self-sustaining and exceeds 800 adults (numbers based on inferences about carrying capacity) such that for each population: (a) the trend in adult point estimates does not decline significantly; and (b) the mean estimated recruitment of age-6 naturally produced fish equals or exceeds mean annual adult mortality; and
3. certain site-specific management tasks to minimize or remove threats have been finalized and implemented, and necessary levels of protection are attained.

Summary of Management Actions Needed in the San Juan River Basin

The recovery plan for Colorado pikeminnow lists the following management actions applicable to recovering and conserving the San Juan River Basin population:

1. provide habitat in the San Juan River, including flow regimes necessary to restore and maintain needed environmental conditions, necessary to provide adequate habitat and sufficient range for all life stages to support a recovered population of Colorado pikeminnow in the river;
2. provide passage over, around or through fish migration and movement barriers within occupied habitat to allow adequate movement and, potentially, range expansion;
3. minimize entrainment of sub-adults and adults at diversion structures, including canal headings and pumping stations;
4. provide for adequate protection against over-utilization;
5. provide for adequate protection against diseases and parasites;
6. regulate non-native fish introduction, stocking and escapement into the river and its floodplain and tributaries;
7. control problematic non-native fishes;
8. minimize the risks of spills of hazardous materials within critical habitat;
9. remediate water quality problems, if any; and
10. provide for the long-term management and protection of the population and its habitat beyond delisting (i.e., develop and implement a conservation plan for the population).

Estimated Time to Achieve Recovery

Reliable population estimates, based on a multiple mark-recapture model, are needed for all populations over a five-year monitoring period for downlisting and over a seven-year period beyond downlisting in order to achieve delisting. The Service will assess the accuracy and precision of each point estimate in cooperation with the respective recovery or conservation programs and in consultation with investigators conducting the point estimates and qualified statisticians and population ecologists. The first point estimates were completed for all populations in 2001. The Service is reviewing those estimates for reliability, and if the Service accepts them and all recovery criteria are met, downlisting could be proposed as early as 2006 and delisting could be proposed as early as 2013. This estimated time frame is based on current understanding of the status and trends of populations and on the monitoring required meeting the downlisting and delisting criteria.

CHAPTER 5: PRINCIPLES FOR CONDUCTING ENDANGERED SPECIES ACT SECTION 7 CONSULTATIONS

The Program is intended to provide measures for compliance with the Endangered Species Act for water development and water management activities in the San Juan River Basin. The Coordination Committee in 2002 adopted the Principles for Conducting Endangered Species Act section 7 Consultations on Water Development and Water Management Activities Affecting Endangered Fish in the San Juan River Basin (Principles). The Principles are provided in Appendix B, and constitute a guide to define how Program actions will be used to provide ESA compliance for water development and water management activities. The Principles were reviewed by the US Fish and Wildlife Service and found to be consistent with the Endangered Species Act and its implementing regulations (50 CFR Part 402).

Modification of Principles

Experience may dictate a need to modify the Principles in the future. The Principles may be modified or amended by vote of the Coordination Committee, pursuant to normal Program voting procedures. However, modifications to the Principles will be subject to review by the Service to assure continued compliance with the ESA and applicable regulations in conducting section 7 consultations on water development and water management activities in the San Juan River Basin. Should the Service find that proposed modifications to the Principles are inconsistent with the ESA or applicable regulations or policies, the Service will notify the Coordination Committee in writing with recommendations for bringing the Principles into compliance with the ESA.

CHAPTER 6: PROCEDURES AND ORGANIZATION

Participation in the Program

The Program is a cooperative effort of the following participating entities:

U.S. Bureau of Reclamation (Upper Colorado Region)

U.S. Bureau of Land Management

U.S. Bureau of Indian Affairs

U.S. Fish and Wildlife Service (Regions 2 and 6)

State of Colorado

State of New Mexico

State of Utah

Navajo Nation

Southern Ute Indian Tribe

Ute Mountain Ute Indian Tribe

Jicarilla Apache Nation

Water Development Interests (local governments and non-federal water users)

Conservationists

Participation in the Program does not in any way diminish, detract from, or add to the Secretary's ultimate responsibility for administering the Endangered Species Act, nor is it intended to affect the authorities and responsibilities of the states and the tribes to manage and administer their water and fish and wildlife resources. The parties must make independent judgments in determining whether or not they will carry out the determinations of the Program.

Participation in the Program is voluntary. Each participant will assess whether Program goals are being achieved. If any participant decides not to continue, that participant will submit its reason(s) to the Coordination Committee in writing. The Coordination Committee will be given sufficient time to resolve any problem(s). If participation in this Program is essential to implementing a reasonable and prudent alternative to avoid jeopardy to the endangered fish species, a participant's withdrawal may result in reinitiation of consultation under section 7 of the Endangered Species Act. Participation by additional entities, and the terms of such participation, in this Program are subject to unanimous approval by the Coordination Committee.

In order to carry out this Program, three committees have been established: a Coordination Committee, a Biology Committee, and a Hydrology Committee. The composition and functions of each committee are discussed below. Any member of the public may attend open meetings of the committees and present his or her concerns or recommendations for consideration by the Program participants.

Program Committees

Coordination Committee

The purpose of the Coordination Committee is to assure that the goals of the Program are achieved in a timely manner. The Coordination Committee is responsible for the establishment of Program policies, direction, procedures and organization. The Coordination Committee will approve annual work plans and budgets, perform conflict resolution and all other Program management responsibilities not specified herein. The Coordination Committee is the principal point of contact for all requests to the Program.

Participants in the Program will have the right to one voting representative on the Coordination Committee (multiple representatives representing a single participant will share the single vote allotted to that participant). The Service's Region 2 Regional Director or the Director's designee will chair the Coordination Committee. A quorum is two-thirds of the appointed committee membership. On all issues except Program participation, the Committee will function by two-thirds vote of the committee membership. Unresolved issues will be referred for resolution to the Signatories of the Cooperative Agreement and to the appropriate authorities in the case of participants added to the Program without signing the Cooperative Agreement. Under this Program, all participants will work cooperatively to ensure the successful implementation of the recovery actions. If, however, any participant is unable to support the Program or components of it, or finds the recommendations of the Coordination Committee not justified, it will report its position to the Coordination Committee in writing. The Coordination Committee will be given sufficient time to resolve any problems.

Although the Secretary of the Interior, through the Service, is responsible for administering the Endangered Species Act, each federal agency is bound by the requirements of the Act. Additionally, as evident by the execution of the Cooperative Agreement and this Program, each federal, state and tribal participant is committed to the conservation and recovery of the San Juan River Basin populations of Colorado pikeminnow and razorback sucker. In order to provide the organizational focus to facilitate cooperative efforts, the Service will direct its efforts to assuring the full and cooperative consideration of all agency views, responsibilities and constraints in the analysis of project impacts and recovery potential.

Biology Committee

The Biology Committee reports to the Coordination Committee. The Biology Committee is responsible for:

1. assessing the biological needs of the endangered fish species and identifying research needs in support of recovery elements;
2. evaluating program activities and monitoring plans;
3. identifying, evaluating and recommending potential recovery actions;
4. identifying and reviewing research activities;
5. providing technical assistance to the Program Coordinator for the assessment of progress of the Program;
6. developing an annual list of priority projects for the development of the annual Work Plan; and

7. review and approval of the Long Range Plan and annual Work Plan;

Because the efforts of the Biology Committee relate specifically to the scientific basis for recovery, each participant on the committee will have expertise that is generally applicable to the San Juan River or its native fish fauna. Due to the technical nature of the committee, committee members should have experience in biology, fisheries, ecology, water quality or fluvial hydrology that is applicable to the San Juan River ecosystem, including its physical habitat. Each of the participants may nominate one representative to the committee (multiple representatives representing a single participant will share the single vote allotted to that participant). The Biology Committee will evaluate the technical qualifications of each representative nominated to serve on the Biology Committee. The Biology Committee shall determine by two-thirds vote of the committee membership that a nominated representative is technically qualified. If a nominated representative is determined not to be technically qualified, the technical committee shall report the reasons for rejecting the nominee to the Coordination Committee; then at the request of the nominating participant, the Coordination Committee will determine if there are extenuating considerations, other than the technical evaluation, that would allow the nominee to serve on the Biology Committee. The Coordination Committee shall determine by two-thirds vote of the committee membership if the nominee will serve on the technical committee and make the final decision on this matter. The representatives on the Biology Committee must bring to the Program a cooperative and objective analysis of the river's habitats and fish community. The committee will elect its chair from the committee's membership.

A quorum is two-thirds of the appointed committee membership. The Biology Committee will function by a two-thirds majority vote of the committee membership. Divergent views will be resolved at the committee level whenever practicable. If resolution cannot be achieved by two-thirds majority vote, a report of the question under dispute, including the dissenting views, will be provided to the Coordination Committee for resolution.

Hydrology Committee

The Hydrology Committee reports to the Coordination Committee. The Hydrology Committee provides review and evaluation of hydrology related information pertinent to the Program. The Hydrology Committee provides advice to the Biology Committee and the Coordination Committee regarding hydrologic aspects of the Program, including hydrologic evaluations of proposed changes to the Program's flow recommendations for providing endangered fish habitat in the San Juan River and of other issues pertinent to adaptive management of the San Juan River system to meet the goals of the Program. Responsibilities of the Hydrology Committee include, but are not necessarily limited to:

1. review and comment on the San Juan River Basin Hydrology Model maintained by the Bureau of Reclamation for use in evaluating the flow recommendations and the hydrologic impacts of proposed water development and management activities on the ability to maintain flows in accordance with the flow recommendations, including

providing recommendations for model improvements and input data updates and reviewing model applications as appropriate;⁴

2. review and suggest changes or revisions to the model documentation maintained by Reclamation to ensure that all assumptions and model operating procedures are fully documented and up to date;
3. evaluate the physical availability of water and operating rules for San Juan River Basin reservoirs for the ability to meet the diversion requirements of water right holders and the authorized purposes of the reservoirs and to provide flows, including releases from reservoir storage, to benefit endangered fish species in the San Juan River, with the understanding that decisions on water project operations rest with appropriate agencies;
4. review and comment, in coordination with the Biology Committee, on issues related to channel morphology and the relationship among flows and geomorphology;
5. provide coordination between Reclamation and the Program in the development of annual operating plans for Navajo Reservoir, including providing, in consultation with the Biology Committee and the Coordination Committee, input to Reclamation on Navajo Dam operations during extreme hydrologic conditions that may not be covered by the flow recommendations and Navajo Dam operating criteria; and
6. report annually to the Coordination Committee on the status of the Hydrology Model and the implementation of the flow recommendations.

Because the efforts of the Hydrology Committee relate specifically to the scientific basis for recovery, each participant on the committee will have expertise that is generally applicable to hydrology, water rights administration, reservoir operations, water supply management, hydrologic modeling and water development in the San Juan River Basin. Each of the participants may nominate one representative to the committee (multiple representatives representing a single participant will share the single vote allotted to that participant). The Hydrology Committee shall determine by two-thirds vote of the committee membership that a nominated representative is technically qualified. If a nominated representative is determined not to be technically qualified, the technical committee shall report the reasons for rejecting the nominee to the Coordination Committee; then at the request of the nominating participant, the Coordination Committee will determine if there are extenuating considerations, other than the

⁴ While every effort will be made to incorporate the best data and modeling available into the San Juan River Basin Hydrology Model, use of the hydrologic model in the work of the Hydrology Committee and the San Juan River Basin Recovery Implementation Program does not necessarily constitute agreement or approval by individual program participants with the model data, methodologies or assumptions. The model data, methodologies and assumptions do not under any circumstances constitute evidence of actual water use, water rights or water availability under compact apportionments and should not be construed as binding on any party. Furthermore, use of the model, model data, methodologies and assumptions does not change the responsibilities of the respective States to maintain records of water rights and water use. Official records of water rights and water use are maintained by the State agencies statutorily charged with that responsibility.

Recommendations from the Program to the Bureau of Reclamation and the Fish and Wildlife Service to change the environmental baseline depletions used in ESA Section 7 consultations may be made through the Coordination Committee with the understanding that the Service has the authority and responsibility under its regulations for implementing the Endangered Species Act to make the final decision on any changes to the environmental baseline.

technical evaluation, that would allow the nominee to serve on the Hydrology Committee. The Coordination Committee shall determine by two-thirds vote of the committee membership if the nominee will serve on the technical committee and make the final decision on this matter. The representatives on the Hydrology Committee must bring to the Program a cooperative and objective analysis of the hydrology, water resources and water management issues in the San Juan River Basin. The Bureau of Reclamation representative will chair the committee.

A quorum is two-thirds of the appointed committee membership. The Hydrology Committee will function by a two-thirds majority vote of the committee membership. Divergent views will be resolved at the committee level whenever practicable. If resolution cannot be reached by two-thirds majority vote, a report of the question under dispute, including the dissenting views, will be provided to the Coordination Committee for resolution.

Meeting Procedures

The following procedures apply to meetings of the Coordination Committee and the technical committees of the Recovery Program.

The Program Coordinator will maintain a list of interested parties. Any person or organization may be placed on the list of interested parties simply by requesting the Program Coordinator to place them on the list, specifying the committee information they want to receive, and providing the Program Coordinator with their name and mailing address. The Program Coordinator will notify interested parties annually to assess continued interest in the Program, and will remove from the list those parties that fail to respond.

The Program Coordinator will provide notification of meeting times, dates, locations, and draft agendas for committee meetings to interested parties 30 days in advance of the meeting. Interested parties will be notified of any changes in committee meeting time, date or location. A public notice stating the time, date, location, and agenda for all committee meetings will be sent by the Program Coordinator to newspapers in the Four Corners area between 7 and 10 days prior to the meeting. The Program Coordinator will maintain on the Program's web site a calendar of all currently scheduled meeting dates for each committee. The Program Coordinator will provide the Coordination Committee and technical committees with agendas, information packets and materials related to the agenda, as needed, in advance of committee meetings or conference calls. The Coordination Committee requires a seven-day notice of agenda items requiring a vote, unless the Coordination Committee members present unanimously decide to consider an issue for a vote when it is presented.

Committee meetings will be held in the San Juan River Basin unless there are circumstances or reasons requiring meetings to be held elsewhere, as determined by the committees. Meetings of subcommittees or working groups may be held outside of the Basin and without public notice. Conference calls of committees, subcommittees or working groups may be convened without public notice as circumstances require.

Summaries of committee meetings or conference calls will be prepared by the Program Coordinator summarizing the issues, decisions, and action items resulting from the meetings, and showing meeting attendance. Draft meeting or conference call summaries will be finalized by the committees within four weeks of the committee meeting. The final summaries will be provided by the Program Coordinator to the committees and posted to the Program's web site within three weeks of receipt of the final summaries. Subcommittee meeting or conference call summaries

will be prepared by the subcommittee or work group chair. Following approval of subcommittee meeting or conference call summaries by the parent committee, the summaries will be provided to the Program Coordinator and the Director will post them to the Program's web site within three weeks of receipt of the final summaries.

The Program Coordinator will maintain a list of official committee members that includes the entity that each member represents and the mailing address and phone number of each committee member. Interested parties and organizations will be encouraged to contact the appropriate representative with questions regarding committee and subcommittee meetings and activities.

U.S. Fish and Wildlife Service Responsibilities

The U.S. Fish and Wildlife Service is responsible for coordinating the Program. To accomplish this responsibility, the Service will appoint a Program Coordinator for the Program. The Program Coordinator is responsible for overall Program coordination and the dissemination of information about Program activities. Specific responsibilities include the following:

1. coordinating the activities of the Coordination Committee and the Program's technical committees, including providing notices, agendas, information packets, and draft and final summaries for committee and subcommittee meetings and conference calls as per the committee meeting procedures described in this document;
2. preparing and updating, with assistance from the Coordination Committee and the Program's technical committees, the Long-Range Plan with research, monitoring and recovery elements and goals for submittal to the technical committees and Coordination Committee for review and approval;
3. preparing lists of prioritized projects based on the Long Range Plan for review and approval by the technical committees and the Coordination Committee;
4. preparing annual work plans, annual budgets and annual progress reports for submittal to the Technical and Coordination Committees for review and approval;
5. together with the technical and Coordination committees, ensuring that the approved recovery activities are implemented;
6. together with the technical committees, evaluating project accomplishments and shortcomings and provide an annual report to the Program;
7. monitoring implementation of all Program actions, including those Program actions identified as reasonable and prudent alternatives and measures in biological opinions, and reporting results to the Service on an annual basis;
8. annually preparing, in consultation with the Coordination Committee and the Program's technical committees, a report that assesses the preceding year's fish monitoring data, progress toward recovery, and adaptive management recommendations, including recommendations for changes in direction, termination of projects, new projects or other pertinent recommendations;
9. maintaining records showing the distribution and expenditures of all annual base and capital funds expended under the annual work plans by each funding source, and providing to the Coordination Committee at the end of each federal fiscal year an accounting of funds expended during the preceding year;

10. reporting to the Coordination Committee at each of its meetings the status of Program activities, the accomplishment of milestones or delays in meeting milestones, and any problems with maintaining Program work schedules along with recommendations for solving the problems;
11. disseminating information to state, federal, and tribal agencies;
12. ensuring that appropriate collecting permits are provided to each principal investigator;
13. advising Program participants of requests for initiation of consultation;
14. maintaining a list of interested parties as described in the committee meeting procedures provided in this document;
15. maintaining the Program library, website and listserves;
16. coordinating activities between the San Juan River Basin Recovery Implementation Program, the Recovery Implementation Program for Endangered Fish of the Upper Colorado River Basin, and the Colorado River Fishes Recovery Team, including participating in the five-year status review, and in the updating of recovery goals, for Colorado pikeminnow and razorback sucker;
17. together with the technical committees, implementing Coordination Committee recommendations to resolve problems or issues that may arise with regard to accomplishing Program activities in a timely manner; and
18. providing materials and technical support to the non-federal participants for briefings with the members and committees of the U.S. Congress and State legislatures; and
19. reviewing Biological Opinions for consistency with the Principles for Conducting Endangered Species Act section 7 Consultations on Water Development and Water Management Activities Affecting Endangered Fish in the San Juan River Basin.

Program Peer Review Process

To ensure that the best available science and data are used as a basis for recovery goals and recovery actions for the San Juan River populations of Colorado pikeminnow and razorback sucker, the Program Coordinator will be responsible for ensuring that the Program maintains a standardized process by which Program projects and reports upon the request of the Coordination Committee or a technical committee will be subjected to peer review by qualified specialists in appropriate technical disciplines. Due to the technical nature of the Program, the Peer Review specialists will have the appropriate expertise applicable to the needs of the San Juan Program. The qualifications of the Peer Review specialists will be reviewed by the appropriate technical committees.

The Program Coordinator will:

1. develop an annual scope of work for peer review and include it in the annual work plan;
2. coordinate meetings among peer reviewers, the appropriate technical committees of the Program, and the Coordination Committee;
3. provide copies of the peer review reports to the appropriate technical committees of the Program and the Coordination Committee; and

4. identify, in consultation with peer reviewers and the appropriate technical committees, high priority issues for peer review in the coming year.

Annual Work Plan Development Process

The development of the annual Work Plan will follow the process outlined in Figure 2.

- 1) **Conduct SJRRIP annual meeting:** An annual meeting involving the Coordination Committee, Service and technical committees will be conducted each year. At the meeting, presentations will be made by members of the technical committees. Coordination Committee members and the Service will be provided an opportunity to ask questions and to come to an understanding of current program activities and their relationship to the Long Range Plan and recovery of the species.
- 2) **Identification of Recovery Actions.** If the Program Coordinator, in consultation with the Service and the Program's Coordination Committee and technical committees, identifies an action that may potentially facilitate the recovery of the endangered fish populations in the San Juan River and the action is not included in the Long-Range Plan, the Program Coordinator will forward to the Coordination Committee a recommendation for the inclusion of the action in the LRP, along with information on the identified action that the Coordination Committee needs to complete its review and approval of the recommendation. Approval will be based on whether the LRP accurately reflects the best scientific information available, the efficient implementation of recovery goals, and the management actions of the Program.
- 3) **Update the long range plan:** The Program Coordinator will update the long range plan following the annual meeting. The Coordination Committee, technical committees and the Service will provide recommendations to the Program Coordinator for updating the Long Range Plan. The update will reflect accomplishments during the past year, new projects needed to achieve goals, changes in timing of projects. The Program Coordinator will provide the updated Long Range Plan to the technical committees and the Coordination Committee for initial review and comment. Following receipt of comments, the Program Coordinator will modify the long range plan and begin working with the technical committees to develop a draft Long Range Plan for presentation to the Coordination Committee. The draft long range plan will be approved by vote of the Biology Committee, Hydrology Committee, and Coordination Committee. Prior to the vote of approval of the draft Long Range Plan by the committee, any member of a technical committee may call for a vote on any element/task proposed by that committee for inclusion in the draft Long Range Plan. The proposed element/task will be included in the draft long range plan if two-thirds of the members vote in favor of the element/task.
- 4) **Develop list of prioritized projects for annual work plan:** Based on the long range plan, the Program Coordinator will work with the technical committees to develop a list of prioritized projects for the next annual work plan. The prioritized list will be consistent with the Long Rang Plan and approved by the technical committees and Coordination Committee.
- 5) **Request for proposals and development of scopes of work:** Scopes of work will be prepared for the list of prioritized projects and requests for proposals will be solicited. Upon receipt of the scopes of work, and responses to requests for proposals, the

prioritized projects will have associated budgets. These will be compared to the availability of funds. Projects which are low on the priority list will not be included in the work plan if funding is not available to fund all projects in that fiscal year. This effort will be conducted by the Program Coordinator. Unfunded, low priority, projects may be considered in the next annual Work Plan.

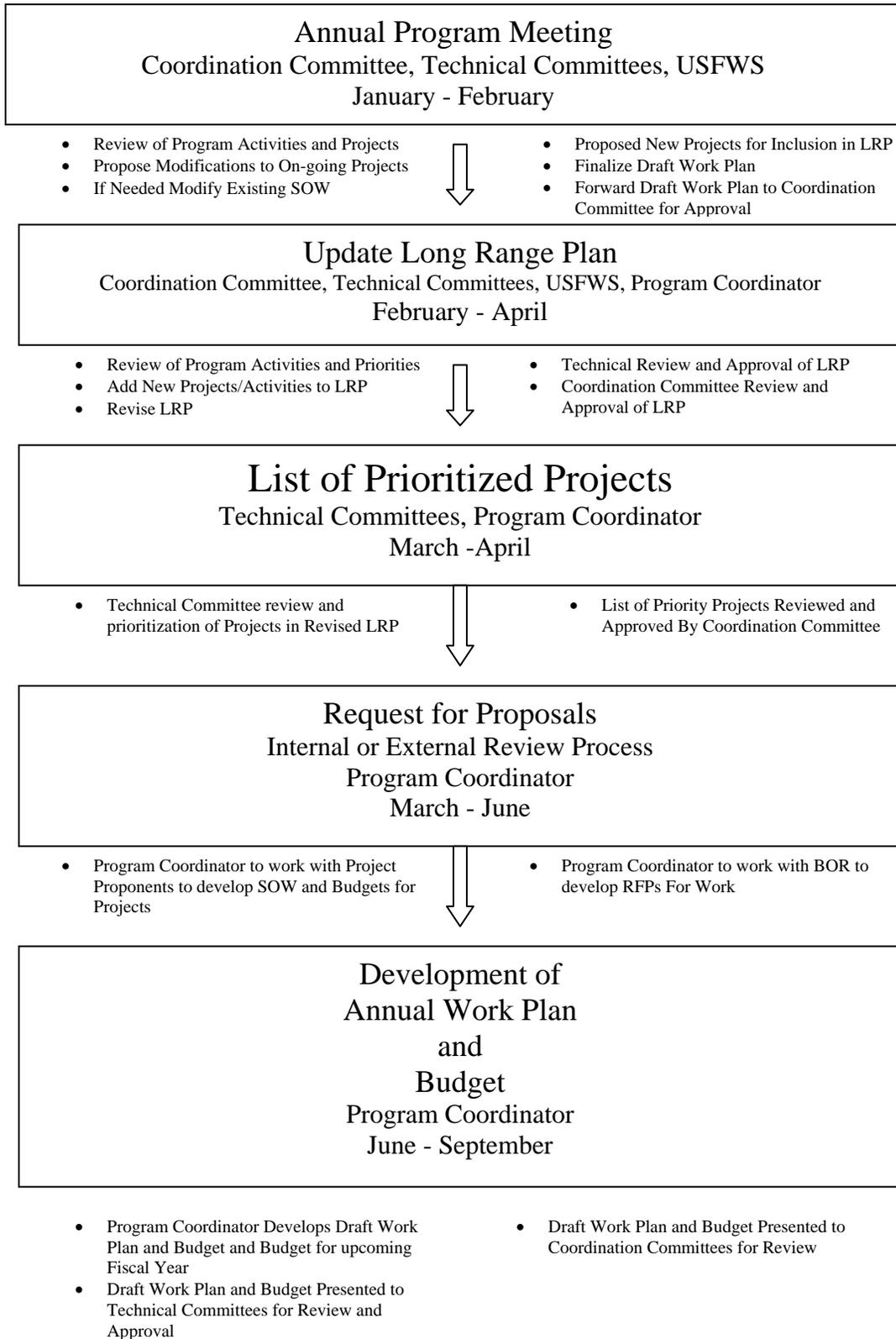
- 6) **Development of an annual work plan and budget:** After comparing the prioritized list to available funds, the Program Coordinator will provide a draft annual work plan and budget to the technical committees and Coordination Committee for final approval. Any member of a technical committee may call for a vote on any project proposed by that committee for inclusion in the draft annual work plan. The proposed project will be included in the draft annual work plan if two-thirds of the eligible members vote in favor of the project. Members of the technical committee proposing to conduct or conducting the project under consideration are not eligible to vote.

The Program Coordinator will forward the Annual Work Plan and budget to the technical committees and the Coordination Committee for review and approval. The approval of the Annual Work Plan and budget will be based on its consistency and compliance with the Long Range Plan and available funds.

Any needed clarification or modification of the work plan or budget will be completed by the Program Coordinator at the direction of the Coordination Committee prior to distribution of funds to entities managing or performing approved scopes of work. The Coordination Committee may approve or modify the annual work plans and budgets in whole or in part. Any member of the Coordination Committee may call for a vote to remove a project proposed by a technical committee included in the draft annual work plan. The proposed project will be removed from the draft annual work plan if two-thirds of the members vote to reject the project. A target timeline for development of annual work plans is provided in Table 3.

The annual work plans will be implemented by agency or tribal personnel or private contractors as staffing and funding allow. Work that is considered to be inherently governmental may be awarded to appropriate federal, state or tribal agency personnel without competing the work. Work that is not inherently governmental will be competed through an RFP process unless an exception is warranted due to extenuating circumstances.

Figure 2. Annual Work Plan and Budget Development Process



Annual Budget Review

Funding of the Program is essential until the Program's goals are achieved. While it is recognized that the availability of funds from each source will be subject to federal and state legislative action, the participants are responsible for obtaining their portion of the funds needed to achieve the purposes of this Program. The Coordination Committee will annually assess funding requirements and the contributions expected from all sources, including in-kind services, and will recommend whether the net effect of any shortfall in Program funding would make it impossible to effectively carry out this Program.

The Coordination Committee will annually review progress toward recovery, and will recommend adjustments to the operating budget to reflect changing needs and priorities. If the Coordination Committee determines that the financial estimates and contributions from all sources are not sufficient to carry out the Program, the Coordination Committee may recommend how, and from what source, additional revenues may be acquired.

Program Funding

Funding reliability is critical to the success of the Program to ensure that the Program is conducted on a continuous basis and that high-priority recovery elements are funded every year. Prior to 2001, funding of the Program was provided by the Bureau of Reclamation, the Bureau of Indian Affairs, and the Fish and Wildlife Service. On January 24, 2000, Congress enacted Public Law 106-392 that authorized and directed Reclamation to fund the San Juan River Basin Recovery Implementation Program and the Recovery Program for Endangered Fishes of the Upper Colorado River Basin. Public Law 106-392 authorizes the Secretary of the Interior to use Colorado River Storage Project power revenues to fund annual base costs of both Programs and to provide a cost-share, to be matched by State cost-shares, towards the costs of implementing capital recovery projects under both recovery programs. The legislation also authorizes federal appropriations to be made to contribute a federal cost-share towards implementation of the capital recovery projects. If the availability of power revenues proves insufficient to meet the annual base funding and capital project needs of the recovery programs, the Western Area Power Administration and the Bureau of Reclamation will request federal appropriations to meet these needs.

The availability of funding from governmental sources is subject to the authorization and appropriation by the federal and state legislative bodies. Nothing herein will be construed as obligating the Department of the Interior or any Program participant to expend money, or as involving the United States in any contract or other obligation for payment of money in excess of appropriations authorized by law. The Program participants will actively support appropriations needed to implement annual Program activities and any needed capital recovery projects.

Annual Program Base Funding

Public Law 106-392 provides authorization to the Secretary of the Interior to use Colorado River Storage Project power revenues to provide base funding for the operation and maintenance of capital recovery projects, for monitoring and research to evaluate the need for and effectiveness of any recovery actions, and for program management as necessary to carry out both the San Juan River Basin Recovery Implementation Program and the Recovery Program for Endangered Fishes of the Upper Colorado River Basin, subject to annual appropriations from Congress for

this purpose. Base funding also includes any annual federal funding provided under the terms of the 1992 Cooperative Agreement.⁵ Nothing in Public Law 106-392 modifies or amends existing agreements among participants regarding base funding and depletion charges for the recovery programs.

Annual base funding from power revenues to carry out the research, monitoring, management, operation and maintenance components of the San Juan River Basin Recovery Implementation Program under Public Law 106-392 is limited to \$2.0 million per federal fiscal year, indexed for inflation after 2000. The actual distribution of the annual budget for the Program will be developed as part of the Long-Range Plan and updated annually through development of the annual work plans. The utilization of power revenues for annual base funding may cease after federal fiscal year 2011, unless reauthorized by Congress; except, that power revenues may continue to be utilized to fund the operation and maintenance of capital projects and monitoring.

No later than the end of fiscal year 2008, the Secretary must submit a report on the utilization of power revenues for base funding to the appropriate Committees of the United States Senate and the House of Representatives. The Secretary also must make a recommendation in such report regarding the need for continued base funding after fiscal year 2011 that may be required to fulfill the goals of both recovery programs.

Capital Project Funding

Public Law 106-392, as amended, authorizes the expenditure through federal fiscal year 2011 of federal appropriations, Colorado River Storage Project power revenues, and state funds to implement capital recovery projects identified by either the San Juan River Basin Recovery Implementation Program or the Recovery Program for Endangered Fishes of the Upper Colorado River Basin as necessary to provide for conservation and recovery of the populations of Colorado pikeminnow and razorback sucker in the San Juan River and in other rivers of the upper Colorado River Basin, respectively. Of the \$18.0 million total capital project cost authorized for the San Juan River Basin Recovery Implementation Program, up to \$10.350 million would be provided from federal appropriations, \$3.825 million would be provided from Colorado River Storage Project power revenues, and \$3.825 million would be contributed as cost-share from the States of Colorado and New Mexico, all subject to congressional and legislative appropriations for this purpose. The total capital cost allowed and federal cost-share will be indexed for inflation since 2000. The State of Colorado and the State of New Mexico have agreed on an allocation between them of the state cost-share: \$1.081 million for the State of Colorado and \$2.744 million for the State of New Mexico. Actual expenditures for capital projects during any period of two consecutive years are to be distributed among federal appropriations, power revenues and State cost-shares in the proportions indicated by the amounts given. Capital projects consist of planning, design, permitting or other compliance, pre-construction activities, construction, construction management, and replacement of facilities, and the acquisition of interests in land or water, as necessary to carry out the Program.

⁵ Public Law 106-392, Section 3(d), Base Funding.

In-Kind Services for Program Participation

Each participant will provide in-kind services to participate in the committees and subcommittees of the Program. Each participant will be responsible for payment of salaries, benefits, travel, per diem, telephone and other costs that may be related to its representatives participating in activities of Program committees, including meetings. No participant representative or member of committees may receive reimbursement from the Program for costs incurred to prepare for, attend and participate in meetings, telephone calls, document reviews, etc., as a member of a Program committee.

The Fish and Wildlife Service will seek to provide cash and in-kind services to the Program, up to \$200,000 to fund the salaries, benefits, travel and related costs for the Program Coordinator and support staff to participate in the activities of the Program and to perform their responsibilities for Program management, administration and coordination described in this document.

Funding may be required for expanded research efforts to add to anticipated data requirements for ongoing or planned ESA section 7 consultations, or for management or recovery actions identified during the progress of the Program. Funding for delineated management or recovery actions or for expanded research may be provided by a participant on an individual action basis or in general support of the annual combined Program effort. Funding levels will be requested in sufficient time to accommodate budgetary planning and execution by the participants. Identified but unfunded recovery actions, if considered integral to the analysis of sufficient progress, may also be addressed in ESA section 7 consultation activities for funding, if applicable.

Administration of Program and Recovery Funds

All funds will be used in accordance with the priorities established under the Program pursuant to annual work plans prepared by the Program Coordinator, in consultation with the technical committees, and approved by the Coordination Committee. The Coordination Committee will oversee and approve the allocation of all Program funds to ensure priorities are being addressed and accomplished in a timely manner.

Annual Program funding will be available from the Bureau of Reclamation at the beginning of each federal fiscal year (October 1), unless otherwise agreed to. An annual accounting of funds allocated in the preceding fiscal year will be provided to the Coordination Committee at the beginning of each fiscal year, identifying funds to be earmarked by each funding source for Program activities for the upcoming year. Annual and capital funds will be administered directly by Reclamation to accomplish the approved annual work plan and budget according to its administrative regulations and procedures. The Program Coordinator and Reclamation will be responsible for reviewing project proposals, developing RFPs, as needed, and developing and facilitating the Technical Proposal Evaluation Committee process. The Program Coordinator and Reclamation will be responsible for maintaining records showing distribution and expenditures of all annual and capital funds expended under the annual work plans by each funding source. An accounting of funds expended during the preceding year will be provided at the end of each fiscal year.

State funds contributed to the Program for capital recovery projects will be placed in interest-bearing accounts administered by the National Fish and Wildlife Foundation until such time as the funds are utilized for a capital project in accordance with the annual budget approved

by the Coordination Committee and cooperative agreements between the Foundation and each state entered into for this purpose. Interest accruing to the accounts will be credited towards the State cost-shares, and unexpended funds will be returned to the States pursuant to their cooperative agreements.

Program Modifications

Modifications to this Program Document may be recommended by any member of the Coordination Committee and will become effective upon approval by the Coordination Committee. (Note: This section replaces Section 5.4 of the original Implementation Program as referenced in the original Cooperative Agreement.)