

CHAPTER 3: ENVIRONMENTAL PROGRAMS AND COMPLIANCE ACTIVITIES

Introduction

Environmental statutes, particularly the National Environmental Policy Act of 1969, Public Law (Pub. L.) No. 91-190, 83 Stat. 852 (1970) (NEPA), and the Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (1973) (ESA), played a major role in Colorado River operations and management during the period from 1979 through 2008. This chapter briefly describes NEPA and ESA, describes how these and other statutes affected the management of the Colorado River in both the Upper and Lower Basins, and describes the development of a number of ongoing environmental programs, including recovery implementation programs in the Upper Basin and the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) in the Lower Basin. In addition, this chapter discusses the Grand Canyon Protection Act of 1992, Pub. L. No. 102-575, Title XVIII, 106 Stat. 4669 (1992), and the resulting modifications to the operations of Glen Canyon Dam. NEPA and ESA litigation relating to the Bureau of Reclamation's (Reclamation) Colorado River operations is discussed in [Chapter 12](#).

NEPA

NEPA was enacted on January 1, 1970. The NEPA process helps to ensure that Federal decisionmakers and the public are informed regarding the potential impacts of proposed Federal actions. Reclamation meets the requirements of NEPA in the Colorado River Basin through the preparation of environmental compliance documents such as Environmental Impact Statements (EISs) analyzing the potential impacts of various alternatives. EISs lead to adoption of Records of Decision (RODs) in which a particular course of action, that is, a specific action alternative or a no-action (status-quo) alternative, is selected. Several environmental compliance documents prepared during the period from 1979 through 2008 are described in other chapters of this volume in the context of the discussion of the particular actions under consideration.

ESA

ESA was enacted on December 28, 1973. Key provisions of the ESA, as amended, include: Section 7(a)(1), which directs Federal agencies to utilize their authorities in furtherance of the purposes of the ESA by carrying out programs for

the conservation of endangered and threatened species; Section 7(a)(2), which requires Federal agencies to ensure their discretionary actions do not jeopardize the continued existence of listed threatened or endangered species or adversely modify designated critical habitat (see 50 Code of Federal Regulations (CFR) § 402.13 for a description of the Section 7 informal consultation process and 50 CFR § 402.14 for a description of the Section 7 formal consultation process); Section 9, which prohibits unauthorized take of individual members of listed species; and Section 10, which provides a mechanism where, for non-Federal activities, the United States Fish and Wildlife Service (USFWS) may permit the taking of listed species "if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity."

In addition to other actions, Reclamation met the requirements of the ESA in the Colorado River Basin through a number of Section 7 consultations with USFWS during the period from 1979 through 2008. As a result of these consultations, Reclamation modified operations of some Colorado River dams and reservoirs in the Upper Basin to assist in the conservation of federally listed endangered and threatened species, and engaged in habitat restoration and protection, native fish augmentation programs, participation in endangered species recovery programs, and other similar activities throughout the Basin.

Endangered Fish Species on the Colorado River

As of December 31, 2008, the USFWS had listed the following four native fish species as endangered:

- Humpback chub (*Gila cypha*) - listed as endangered in 1967 under the Act of October 15, 1966, Pub. L. No. 89-669, 80 Stat. 926 (1966) (Endangered Species Preservation Act) in a notice published in the *Federal Register* at 32 Fed. Reg. 4001 (March 11, 1967)
- Colorado pikeminnow (*Ptychocheilus lucius*) - listed as endangered in 1967 under the Endangered Species Preservation Act as the Colorado River squawfish in a notice published in the *Federal Register* at 32 Fed. Reg. 4001 (March 11, 1967)
- Bonytail (*Gila elegans*) - listed as endangered in 1980 under the ESA as the bonytail chub in a notice published in the *Federal Register* at 45 Fed. Reg. 27710 (April 23, 1980)
- Razorback sucker (*Xyrauchen texanus*) - listed as endangered in 1991 under the ESA in a notice published in the *Federal Register* at 56 Fed. Reg. 54957 (October 23, 1991)

In 1994, the USFWS designated 1,980 miles of the Colorado River and its tributaries as critical habitat for these four fish species. This designation was published in the *Federal Register* at 59 Fed. Reg. 13374 (March 21, 1994). Under Section 7(a)(2) of the ESA, action agencies such as Reclamation must avoid adverse modifications to designated critical habitat. Programs were developed in both the Upper and Lower Basins to address these and other endangered species.

Upper Basin

Many of the Upper Basin environmental considerations have been addressed in decisions concerning operation of particular projects and, for this reason, these environmental compliance activities are discussed later in this chapter in the context of project operations. In addition, specific programs were established in the Upper Basin to address the endangered fish species and are discussed in the following section.

Recovery Programs

To promote cooperative discussions regarding water project development and endangered fishes in the Upper Basin, the USFWS, Reclamation, and the States of Colorado, Utah, and Wyoming entered into a Memorandum of Understanding dated August 3, 1984, forming a Coordinating Committee to develop a program of reasonable and prudent alternatives associated with water project development and depletions in the Upper Basin. The committee's work became the basis for two related recovery programs established in the late 1980s and early 1990s.

These recovery programs were implemented as joint efforts between the United States Department of the Interior, the United States Department of Energy's Western Area Power Administration (Western), Upper Basin States acting through their governors, and Upper Basin Native American tribes. The two programs are established by these agreements:

- Cooperative Agreement for the Recovery Implementation Program for Endangered Species in the Upper Colorado River Basin (Upper Colorado River RIP), executed in 1988 and extended in 2001
- Cooperative Agreement for the San Juan River Basin Recovery Implementation Program (San Juan River RIP), executed in 1992 and extended in 2006

Congress approved these programs in the Act of October 30, 2000, Pub. L. No. 106-392, 114 Stat. 1602 (2000), with the programs later extended by the Act of December 19, 2002, Pub. L. No. 107-375, 116 Stat. 3113 (2002) and the Upper Colorado and San Juan River Basin Endangered Fish Recovery Programs Reauthorization Act of 2005, Pub. L. No. 109-183, 120 Stat. 290 (2006).

These programs share the dual goals of recovering populations of endangered fish and continuing water development to meet current and future human needs. Program actions provide ESA compliance for more than 1,600 Federal, tribal, and non-Federal water projects depleting more than 3 million acre-feet of water per year in the Colorado and San Juan Rivers and their tributaries.

The 1988 Upper Colorado River RIP Cooperative Agreement states that “[t]he Program provides for a broad range of measures to manage and recover three endangered fishes and to manage the razorback sucker, while providing for new water development to proceed in the Upper Colorado River Basin.” The Cooperative Agreement identifies 5 principal activities of the Upper Colorado River RIP: (1) habitat management through the provision of instream flows; (2) nonflow habitat development and maintenance; (3) native fish stocking; (4) management of nonnative species and sportfishing; and (5) research, data management, and monitoring.

Program activities further include construction and operation of fish ladders to provide the fish access to former spawning areas blocked by diversion and storage dams. For instance, successful ladders have been operating since 1996 around the Redlands Diversion Dam on the Gunnison River in Colorado. The fish ladders near Grand Junction at the Grand Valley Diversion Dam (2006) and near Palisade at the Price-Stubb Diversion Dam (2008) were put into operation to enable native fish to access the uppermost reaches of the Colorado River.

As of December 31, 2008, the program partners for the Upper Colorado River RIP included Reclamation, the USFWS, the National Park Service, Western, the State of Colorado, the State of Utah, the State of Wyoming, the Colorado River Energy Distributors Association, the Colorado Water Congress, the Utah Water Users Association, The Nature Conservancy, Western Resource Advocates, and the Wyoming Water Association.

The 2006 San Juan River RIP’s Final Draft Program Document (2006 Program Document) identifies the following two specific goals:

- (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 2006 Program Document for the San Juan River RIP identifies the following activities of the program: (1) protection, management, and augmentation of habitat; (2) water quality protection and enhancement; (3) interactions between

native and non-native fish species; (4) monitoring and data management; and (5) protection of genetic integrity and management and augmentation of populations. The San Juan River RIP also has a Long-Range Plan which outlines a multi-year proposal to guide the program's research and monitoring programs and recovery actions.

As of December 31, 2008, the program participants for the San Juan River RIP included Reclamation, the USFWS, the Bureau of Indian Affairs, the Bureau of Land Management, the State of Colorado, the State of New Mexico, the Southern Ute Indian Tribe, the Ute Mountain Ute Tribe, the Jicarilla Apache Nation, the Navajo Nation, water development interests (local governments and non-Federal water users), and conservation interests (as of December 31, 2008, represented by The Nature Conservancy).

Flaming Gorge Dam Operations

Flaming Gorge Dam is located on the Green River, a major tributary of the Colorado River, in northeastern Utah. Flaming Gorge Dam is one of the initial units authorized by the Colorado River Storage Project Act, Pub. L. No. 84-485, 70 Stat. 105 (1956) (CRSPA) for the Colorado River Storage Project (CRSP). Flaming Gorge Dam was completed in 1963, with a total storage capacity of 3,788,900 acre-feet. During the 1960s, dam operation focused primarily on power generation during periods of peak power demand. In the mid-1980s, Reclamation, in consultation with the USFWS, began gradual modification of annual releases to better reflect natural hydrograph conditions. These modifications were undertaken to assist in the recovery of four endangered fish species known to live in the Green River below Flaming Gorge Dam: the humpback chub, the Colorado pikeminnow, the bonytail, and the razorback sucker.

On November 25, 1992, the USFWS issued a *Final Biological Opinion on the Operation of Flaming Gorge Dam* (1992 BO), which concluded that the operations of Flaming Gorge Dam were jeopardizing the continued existence of these four endangered fish species. The 1992 BO provided a Reasonable and Prudent Alternative (RPA) to operate Flaming Gorge Dam in a manner which would remove jeopardy for the endangered fish. One element of the RPA was for Reclamation to conduct a 5-year period of experimentation in order to learn which conditions best favored the endangered fishes and then work with the USFWS to develop flow recommendations to provide guidance regarding the operation of Flaming Gorge Dam in a manner to avoid jeopardizing the endangered fishes known to live in the Green River.

In September 2000, a report was issued by the Upper Colorado River RIP, in cooperation with Reclamation and Western, entitled *Flow and Temperature Recommendations for Endangered Fishes in the Green River Downstream of Flaming Gorge Dam* (Flow and Temperature Recommendations). This report was the product of the 5-year experimental period and provided the best available

scientific information on the needs of the endangered fish in the Green River. In 2000, Reclamation began a NEPA process to modify the operation of Flaming Gorge Dam in light of the Flow and Temperature Recommendations. The *Operation of Flaming Gorge Dam Final Environmental Impact Statement* was released by Reclamation in September 2005. The USFWS issued a nonjeopardy biological opinion on the proposed action, also in September 2005, entitled *Final Biological Opinion on the Operation of Flaming Gorge Dam*.

A *Record of Decision, Operation of Flaming Gorge Dam Final Environmental Impact Statement* (2006 Flaming Gorge ROD) was signed by Reclamation on February 16, 2006, and modified the operation of Flaming Gorge Dam to achieve, to the extent possible, the Flow and Temperature Recommendations. The 2006 Flaming Gorge ROD was based on a finding that the flow regime selected by the ROD would assist in avoiding jeopardy to listed species and in making progress toward recovery of listed fish, which would, in turn, facilitate the ability of the Upper Basin States to continue utilizing and further developing their Colorado River apportionments pursuant to the Colorado River Compact.

Wayne N. Aspinall Unit Operations

The Wayne N. Aspinall Unit (Aspinall Unit), originally authorized in CRSPA as the “Curecanti” initial unit, consists of three reservoirs located on the Gunnison River in Western Colorado: Blue Mesa, Morrow Point, and Crystal. The Gunnison begins at the confluence of the East and Taylor Rivers, from which it flows 25 miles to Blue Mesa Reservoir, and then through Morrow Point and Crystal Reservoirs, respectively. The Aspinall Unit was constructed between 1963 and 1977. The total storage capacities for these reservoirs are: 940,700 acre-feet in Blue Mesa; 117,190 acre-feet in Morrow Point; and 25,000 acre-feet in Crystal.

Most of the water storage occurs in the uppermost and largest reservoir, Blue Mesa. The upstream powerplants at Blue Mesa and Morrow Point Dams provide power generation during periods of peak power demand. Crystal Dam serves as a regulating reservoir, helping to stabilize flows in the Gunnison River below the three dams.

In July 2003, the USFWS issued its final report on *Flow Recommendations to Benefit Endangered Fishes in the Colorado and Gunnison Rivers*. The report, which was revised in October 2003, presents flow recommendations for two different river reaches: one for the lower Gunnison River between Delta and Grand Junction, Colorado; and the other for the Colorado River between the Gunnison River confluence and the Colorado-Utah State line. In January 2004, Reclamation published in the *Federal Register* at 69 Fed. Reg. 2943 (January 21, 2004) a notice of intent to prepare an EIS to describe potential effects of operational changes for the Aspinall Unit. The purpose of Reclamation’s proposed action is to operate the Aspinall Unit to avoid jeopardy to endangered

species while maintaining the congressionally authorized Aspinall Unit purposes. As of December 31, 2008, the NEPA process was ongoing.

Navajo Unit Operations

The Navajo Unit (Navajo Dam and Reservoir) is located on the San Juan River in New Mexico, approximately 34 miles east of Farmington. The Navajo Unit was authorized as an initial unit of CRSP. Water development supported by the Navajo Unit includes the San Juan-Chama Project, the Navajo Indian Irrigation Project, portions of the Jicarilla Apache Nation water settlement, and development of the Animas-La Plata Project. Also, as of December 31, 2008, expected to be included are the proposed Navajo-Gallup Water Supply Project and other water uses. The Navajo Dam Hydroelectric Plant is owned and operated by the City of Farmington and began full commercial operation in 1989. Navajo Dam was completed in 1963, creating Navajo Reservoir, which has a total capacity of approximately 1,700,000 acre-feet.

Throughout the 1970s and the 1980s, Navajo Dam was operated to maximize water storage and minimize flow variation in the river below the dam, which reduced the magnitude of peak spring flows and supplemented flows in other seasons. Regulated flows, along with other factors including loss of habitat and water development in the basin, had an adverse impact on native fish in the San Juan River.

In May 1999, a report entitled *Flow Recommendations for the San Juan River* (San Juan Flow Recommendations) was completed by the San Juan River RIP following a 7-year research period. This report outlines flow recommendations for the San Juan River below Navajo Dam to promote the recovery of the endangered Colorado pikeminnow and razorback sucker; to maintain important habitat for these two species, as well as other native species; and to provide information for the evaluation of continued water development in the basin.

In 2006, Reclamation completed a NEPA process on the implementation of operations at Navajo Dam that met the San Juan Flow Recommendations. In January 2006, the USFWS issued a nonjeopardy *Final Biological Opinion for Navajo Reservoir Operations, Colorado River Storage Project, Colorado-New Mexico-Utah*. The *Final Environmental Impact Statement, Navajo Reservoir Operations* was issued in April 2006, and a notice of availability was published in the *Federal Register* at 71 Fed. Reg. 20416 (April 20, 2006). The *Record of Decision, for the Navajo Reservoir Operations, Navajo Unit – San Juan River New Mexico, Colorado, Utah, Final Environmental Impact Statement* was signed by Reclamation on July 31, 2006.

Glen Canyon Dam Operations

Glen Canyon Dam is located in northeastern Arizona just upstream of Lee Ferry, Arizona. See [Chapter 2](#). Glen Canyon Dam was authorized as an initial unit of CRSP. Construction on Glen Canyon Dam began in the fall of 1956. Closure of

the dam and the first storage of water occurred in March 1963. Lake Powell, the reservoir impounded by Glen Canyon Dam, has a capacity of approximately 24,332,000 acre-feet of water.

In the 1980s, various scientific, environmental, and recreational interests began to identify changes to the Grand Canyon's riparian resources in areas downstream of Glen Canyon Dam. These concerns led to investigations into Glen Canyon Dam operations in order to better understand the impacts of those operations on the Grand Canyon's ecological systems. While these studies were underway, Congress enacted the Grand Canyon Protection Act of 1992, Pub. L. No. 102-575, Title XVIII, 106 Stat. 4669 (1992).

Grand Canyon Protection Act of 1992

Provisions of the Grand Canyon Protection Act of 1992 include:

Section 1802(a). The Secretary shall operate Glen Canyon Dam in accordance with the additional criteria and operating plans specified in section 1804 and exercise other authorities under existing law in such a manner as to project [sic], mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established, including, but not limited to natural and cultural resources and visitor use.

Section 1802(b). The Secretary shall implement this section in a manner fully consistent with and subject to the Colorado River Compact, the Upper Colorado River Basin Compact, the Water Treaty of 1944 with Mexico, the decree of the Supreme Court in *Arizona v. California*, and the provisions of the Colorado River Storage Project Act of 1956 and the Colorado River Basin Project Act of 1968 that govern allocation, appropriation, development, and exportation of the waters of the Colorado River Basin.

* * *

Section 1804(a). Not later than 2 years after the date of enactment of this Act, the Secretary shall complete a final Glen Canyon Dam environmental impact statement, in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

Section 1804(b). The Comptroller General shall-

- (1) audit the costs and benefits to water and power users and to natural, recreational, and cultural resources resulting from management policies and dam operations [sic] identified pursuant to the environmental impact statement described in subsection (a); and
- (2) report the results of the audit to the Secretary and the Congress.

Section 1804(c). (1) Based on the findings, conclusions, and recommendations made in the environmental impact statement prepared pursuant to subsection (a) and the audit performed pursuant to subsection (b), the Secretary shall-

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- (A) adopt criteria and operating plans separate from and in addition to those specified in section 602(b) of the Colorado River Basin Project Act of 1968; and
- (B) exercise other authorities under existing law, so as to ensure that Glen Canyon Dam is operated in a manner consistent with section 1802.

In accordance with the Grand Canyon Protection Act of 1992, Reclamation completed the *Operation of Glen Canyon Dam Final Environmental Impact Statement* (1995 FEIS) in 1995. Alternatives considered in the 1995 FEIS varied with respect to monthly, daily, and hourly water release fluctuations but did not analyze modification of the annual release volume from Glen Canyon Dam.

Secretary of the Interior (Secretary) Bruce Babbitt signed the *Record of Decision, Operation of Glen Canyon Dam Final Environmental Impact Statement* (1996 Glen Canyon Dam ROD) on October 9, 1996. The 1996 Glen Canyon Dam ROD selected the Modified Low Fluctuating Flow Alternative, which “substantially reduce[s] daily fluctuations from historic levels.” As described on page 28 of the 1995 FEIS, the Modified Low Fluctuating Flow Alternative “would have the same annual and essentially the same monthly operating plan as described under the No Action Alternative but would restrict daily and hourly operations more than [the other fluctuating flow alternatives described in the 1995 FEIS].” The 1996 Glen Canyon Dam ROD also allows for certain high flow releases and experimental releases. A number of experimental releases, including high flow releases, steady flow releases, and fluctuating flow releases, were made between 1996 and December 31, 2008, pursuant to the 1996 Glen Canyon Dam ROD.

The 1996 Glen Canyon Dam ROD also established the Glen Canyon Dam Adaptive Management Program (AMP). The Adaptive Management Work Group, established to implement the AMP, is chartered as a Federal advisory committee, under the Federal Advisory Committee Act, Pub. L. No. 92-463, 86 Stat. 770 (1972). The most recent charter of the Adaptive Management Work Group, as of December 31, 2008, was signed by Secretary Dirk Kempthorne on July 23, 2008. As set forth in the 1996 Glen Canyon Dam ROD, the AMP applies an adaptive management framework for making recommendations to the Secretary on prospective adjustments to dam operations and other related management actions. The 1996 Glen Canyon Dam ROD provides that adaptive management would be used to “evaluate the effects of operational changes [to Glen Canyon Dam operations] over time and make modifications according to scientific findings.”

In accordance with Section 1804(b) of the Grand Canyon Protection Act of 1992, the General Accounting Office submitted a report to the Secretary and to Congress entitled *Bureau of Reclamation – An Assessment of the Environmental Impact Statement on the Operations of the Glen Canyon Dam*, October 1996.

In accordance with Section 1804(c) of the Grand Canyon Protection Act of 1992, the Secretary, acting through the Commissioner of Reclamation, adopted the Glen Canyon Dam Operating Criteria, which were published in the *Federal Register* at 62 Fed. Reg. 9447 (March 3, 1997).

In addition, during the period from 1979 through 2008, there were multiple consultations between USFWS and Reclamation regarding Glen Canyon Dam operations, resulting in the USFWS issuing several related documents, including:

- *Substantiating Report, Operation of Glen Canyon Dam – Fish and Wildlife Coordination Act Report*, June 28, 1994, prepared in accordance with the Fish and Wildlife Coordination Act, Pub. L. No. 85-624, 72 Stat. 563 (1958)
- *Final Biological Opinion, Operation of Glen Canyon Dam as the Modified Low Fluctuating Flow Alternative of the Final Environmental Impact Statement*, December 21, 1994, transmitted to Reclamation January 7, 1995
- *Biological and Conference Opinions on Operation of Glen Canyon Dam - Controlled Release for Habitat and Beach Building*, February 16, 1996
- *Biological Opinion, November 1997 – Fall Test Flow from Glen Canyon Dam*, October 30, 1997
- *Biological Opinion, Section 7 Consultation on Proposed Experimental Releases from Glen Canyon Dam and Removal of Non-native Fish*, December 6, 2002
- *Biological Opinion, Reinitiation of Section 7 Consultation on Proposed Experimental Releases from Glen Canyon Dam and Removal of Non-native Fish*, June 12, 2003
- *Biological Opinion, Reinitiation of Section 7 Consultation on Proposed Experimental Releases from Glen Canyon Dam and Removal of Non-native Fish*, August 12, 2003
- *Final Biological Opinion for the Operation of Glen Canyon Dam*, February 27, 2008

The February 27, 2008, *Final Biological Opinion for the Operation of Glen Canyon Dam* by the USFWS was prepared in response to Reclamation's December 21, 2007, transmittal to the USFWS of the *Biological Assessment on the Operation of Glen Canyon Dam and Proposed Experimental Flows for the Colorado River Below Glen Canyon Dam During the Years 2008-2012*, dated December 2007. Reclamation, on February 29, 2008, adopted the *Finding of No*

Significant Impact, Final Environmental Assessment for Experimental Releases from Glen Canyon Dam, Arizona, 2008-2012, Colorado River Storage Project, Coconino County, Arizona. As of December 31, 2008, the proposed experimental flows during the period 2008 through 2012 were the subject of ongoing litigation styled: *Grand Canyon Trust v. U.S. Bureau of Reclamation*, Case No. 3:07-CV-8164-DGC (D. Ariz).

Lower Basin: The Lower Colorado River Multi-Species Conservation Program

Within the Lower Basin, ESA coverage for Reclamation's ongoing mainstream Colorado River operations is provided by the Lower Colorado River Multi-Species Conservation Program (LCR MSCP).

Prior to 1994, Reclamation addressed ESA compliance in the Lower Basin on an action-by-action basis for its operations and maintenance activities on the lower Colorado River, resulting in a number of specific efforts to address effects on federally listed species. With the designation of critical habitat for the razorback sucker, humpback chub, Colorado pikeminnow, and bonytail, Reclamation and stakeholders recognized a need for a comprehensive program to comply with the ESA for various ongoing and future Federal and non-Federal activities on the lower Colorado River within the Federal legal framework governing the Secretary's management of the Colorado River.

Lower Colorado River stakeholders recognized that a comprehensive plan for aquatic and riparian species would likely be more efficient and effective than action-by-action consultations. Such a plan could include actions designed to prevent the need for future listing of other species, thus addressing the needs of species on a proactive basis. Also, by analyzing and mitigating current as well as projected future impacts in one comprehensive program, the species covered by the LCR MSCP would gain a greater benefit as compared to action-by-action consultations.

Beginning in 1994, multiple interests in the Lower Basin joined together with Reclamation to develop the LCR MSCP. Federal participants included Reclamation, USFWS, National Park Service, Bureau of Indian Affairs, Bureau of Land Management, and Western. Non-Federal partners included water, power, and wildlife agencies from the States of Arizona, California, and Nevada; other groups, including Native American tribes; and other stakeholders. The group of stakeholders formed a partnership to develop a long-term ESA compliance and resource management program for the historic flood plain of the lower Colorado River from the full pool elevation of Lake Mead to the Southerly International Boundary (SIB) with the United Mexican States (Mexico).

A formal steering committee with representatives of the partnership was formed in 1995 to direct the planning process. This steering committee was later designated by the USFWS as the Ecosystem Conservation Recovery Implementation Team for the lower Colorado River to facilitate development of an ecosystem-based habitat conservation plan. Several other entities, including public agencies and nongovernmental organizations, participated in the process of developing the LCR MSCP.

Beginning in 1995, the United States Department of the Interior entered into a number of agreements relating to the development of the LCR MSCP, including:

- Memorandum of Understanding Amongst the United States of America, through its Department of the Interior, Arizona Department of Water Resources, Colorado River Board of California, Colorado River Commission of Nevada, Arizona Game and Fish Commission, California Department of Fish and Game, Nevada Division of Wildlife, February 24, 1995, to create a forum to consider “the effects of water and power resources development, management, operations, maintenance and replacement, or activities to offset those effects, to endangered, threatened, and candidate species within the 100-year floodplain of the mainstream Colorado River and the full pool elevation of affected reservoirs from below Glen Canyon Dam to the Southerly International Boundary”
- Memorandum of Agreement for Development of a Lower Colorado River Species Conservation Program, August 2, 1995, among agencies of the United States, the State of Arizona, the State of California, and the State of Nevada to initiate the development of a program “which will accommodate current water diversions and power production and optimize opportunities for future water and power development, while working toward the conservation of habitat and toward the recovery of included species, and reducing the likelihood of additional species listings” in the mainstem of the Colorado River “from below Glen Canyon Dam to the Southerly International Boundary, including the 100-year floodplain and reservoir full-pool elevations within the states of Arizona, California, and Nevada”
 - Memorandum of Clarification, July 17, 1996, clarifying the intent of the parties with respect to the August 2, 1995, Memorandum of Agreement
- Agreement Between the United States Department of the Interior and the Lower Colorado River Multi-Species Conservation Program Steering Committee, June 26, 1996, (1996 Cost Sharing Agreement), a cost-sharing agreement “to establish funding commitments and arrangements” to develop the LCR MSCP program and implement interim conservation measures, modified on April 28, 1997, to extend the date for a non-Federal

cost-sharing agreement, and later amended by Amendment No. 1 dated February 15, 2001, and Amendment No. 2 dated August 27, 2003

Additional agreements were also entered into among non-Federal parties relating to the establishment and funding of the LCR MSCP.

In August 1996, Reclamation submitted the *Biological Assessment on Operations, Maintenance, and Sensitive Species of the Lower Colorado River* to the USFWS and requested formal ESA Section 7 consultation on routine operations and maintenance on the lower Colorado River from Lake Mead to the SIB. The 1996 biological assessment addressed actions where Reclamation had discretionary involvement or control and served as a reference for the subsequent development and implementation of the LCR MSCP by lower Colorado River stakeholders pursuant to ESA Section 7 and Section 10(a)(1)(B).

On April 30, 1997, the USFWS issued its *Biological and Conference Opinion on Lower Colorado River Operations and Maintenance – Lake Mead to Southerly International Boundary* that found the proposed action not likely to jeopardize the continued existence of the flat-tailed horned lizard (*Phrynosoma mcalli*) or Yuma clapper rail (*Rallus llogirostris yumanensis*) but likely to jeopardize the continued existence of the bonytail, razorback sucker, and southwestern willow flycatcher (*Empidonax trailii extimus*). The 1997 biological and conference opinion was designed to be in effect for a 5-year period to address Reclamation's ESA obligations during the period in which the LCR MSCP was being developed. USFWS developed an RPA containing 17 provisions, some of which were to be completed within 5 years of issuance. Longer term requirements were expected to become a portion of the actions undertaken by the LCR MSCP.

Reclamation implemented the 1997 biological and conference opinion RPA provisions. In addition to the development of the LCR MSCP, major activities included:

- Acquisition of 1,400 acres of suitable southwestern willow flycatcher habitat
- Development of 300 acres of native fish impoundments
- Stocking of 50,000 razorback suckers below Parker Dam

On May 1, 1997, the United States Department of the Interior entered into the Lower Colorado River Multi-Species Conservation Program Joint Participation Agreement Among the U.S. Department of the Interior, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, and National Park Service, State of Arizona, represented by the Arizona Department of Water Resources and the Arizona Game and Fish Commission, State of California, represented by the Colorado River Board of California and the California

Department of Fish and Game, and the State of Nevada, represented by its Colorado River Commission and the Division of Wildlife of the State Department of Conservation and Natural Resources (1997 Joint Participation Agreement).

In the 1997 Joint Participation Agreement, the parties formally established their participation in the LCR MSCP and formally established the LCR MSCP Steering Committee and provided for its functions. On April 28, 1997, the 1996 Cost Sharing Agreement described above was modified to extend the date for development of a non-federal cost-sharing agreement. In May 1997, State agencies from the Lower Basin States entered into an interstate cost sharing agreement. The framework for the LCR MSCP was then in place.

In addition to work and conservation measures undertaken following adoption of the 1997 Joint Participation Agreement, the LCR MSCP Steering Committee also worked to develop conservation measures and initiated conservation measures outlined in a USFWS January 12, 2001, *Biological Opinion for Interim Surplus Criteria, Secretarial Implementation Agreements, and Conservation Measures on the Lower Colorado River, Lake Mead to the Southerly International Boundary Arizona, California and Nevada*, prepared in conjunction with the adoption of the Interim Surplus Guidelines (see [Chapter 2](#)) as well as the Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement (see [Chapter 6](#)). These included the development of 372 acres of habitat for the southwestern willow flycatcher and 44 acres of backwater habitat for native fish.

In March 2002, recognizing that completion of a comprehensive multi-species plan would require additional time and effort, Reclamation requested that the ESA coverage provided by the 1997 biological and conference opinion be extended by submitting its *Biological Assessment for Continued Discretionary Operations, Maintenance, and Sensitive Species of the Lower Colorado River for the Period of April 30, 2002 – April 30, 2005* to the USFWS. On April 30, 2002, the USFWS issued its biological opinion *Reinitiation of Formal Section 7 Consultation on Lower Colorado River Operations and Maintenance – Lake Mead to Southerly International Boundary, Arizona, California and Nevada* that extended ESA coverage for Reclamation's discretionary actions until April 30, 2005.

LCR MSCP Federal and non-Federal participants worked closely with the USFWS to develop the draft Habitat Conservation Plan (HCP) and the draft biological assessment for the LCR MSCP. The permit application and the LCR MSCP planning documents were submitted to the USFWS in draft form in April of 2004 and, after a public process, were finalized on December 17, 2004. The LCR MSCP HCP incorporates the RPAs outlined in the USFWS biological and conference opinions dated 1997, 2001, and 2002. The USFWS issued the *Biological and Conference Opinion on the Lower Colorado River Multi-Species Conservation Program* on March 4, 2005 (2005 Biological and Conference Opinion), addressing the LCR MSCP HCP.

The LCR MSCP provides ESA Section 7 coverage for specific identified Federal actions and Section 10 coverage for specific non-Federal covered activities for a 50-year period through 2055. Activities which could not be clearly identified as falling under either Section 7 or Section 10 were also analyzed and mitigated as part of the LCR MSCP HCP. The 2005 Biological and Conference Opinion contains the Incidental Take Statement which addresses the Section 7 coverage for the implementation of the Federal actions addressed in that 2005 opinion. An Endangered & Threatened Species – Incidental Take Permit, dated April 4, 2005, provides the non-Federal LCR MSCP permit applicants with coverage under Section 10(a)(1)(B) of the ESA.

The identified purposes of the LCR MSCP are to:

- Conserve the habitat of the lower Colorado River from the full pool elevation of Lake Mead to the SIB and work toward the recovery of threatened and endangered species, as well as reduce the likelihood of additional species being listed
- Accommodate present water diversions and power production and optimize opportunities for future water and power development to the extent consistent with law
- Provide the basis for incidental take authorizations under Sections 7 and 10 of the ESA

After nearly a decade of work to develop a comprehensive approach to species protection, implementation of the 50-year LCR MSCP began with Secretary Gale A. Norton signing the *Record of Decision, Lower Colorado River Multi-Species Conservation Plan, April 2005* (LCR MSCP ROD). Reclamation's Lower Colorado Regional Office serves as the lead agency responsible for implementation of the LCR MSCP. The approved plan includes the creation of more than 8,100 acres of riparian, marsh, and backwater habitat for 6 listed species and 20 other species native to the lower Colorado River. In addition, the LCR MSCP is committed to providing the level of funding necessary to produce and stock up to 660,000 subadult razorback suckers and up to 620,000 subadult bonytails to augment existing populations of these native fish.

The LCR MSCP HCP provides measures to avoid, minimize, and mitigate, to the maximum extent practicable, the potential effects from covered actions on listed and other covered species and their habitats. Conservation measures outlined in the HCP must be completed to remain in compliance with the incidental take permit.

Total LCR MSCP costs over the 50-year program were calculated at \$626 million (2003 dollars indexed annually to inflation), with one-half of these costs being provided by non-Federal partners and one-half by the United States. The

United States, acting through Reclamation, and the non-Federal partners have ensured sufficient funding to implement the LCR MSCP under guidelines established within the LCR MSCP Funding and Management Agreement dated April 4, 2005.

At the time implementation started in 2005, the LCR MSCP was unique in that it provided integrated coverage both under Section 7 of the ESA (for Federal actions) and under Section 10 of the ESA (for non-Federal activities). The covered actions comprise both Federal actions and non-Federal activities, including:

- Impacts of changes in points of diversion of lower Colorado River water, resulting in the reduction of annual flow of the Colorado River between Parker Dam and Imperial Dam by up to 1,574,000 acre-feet
- Impacts of changes in points of diversion of lower Colorado River water, resulting in the reduction of annual flow of the Colorado River between Hoover Dam and Davis Dam by up to 845,000 acre-feet and between Davis Dam and Parker Dam by up to 860,000 acre-feet
- Impacts of diversions under current and future Colorado River water entitlements under Shortage, Normal, and Surplus Conditions
- Impacts of current and future operations and maintenance of the lower Colorado River including operation of the dams and reservoirs for water delivery and power production, and lower Colorado River channel and levee maintenance
- Numerous smaller actions and activities by Federal and non-Federal entities

The LCR MSCP Steering Committee provides input and oversight for the LCR MSCP implementation. The LCR MSCP Steering Committee, consisting of 56 members as of December 31, 2008, is an association of LCR MSCP stakeholders including Federal agencies, State wildlife agencies, Native American tribes, water and power entities, and others participating in the development and implementation of the LCR MSCP.

The final “Program Documents” for the LCR MSCP include the following:

- *Lower Colorado River Multi-Species Conservation Program, Volume I: Final Programmatic Environmental Impact Statement/Environmental Impact Report*, prepared by the United States Department of the Interior Bureau of Reclamation, United States Fish and Wildlife Service, and The Metropolitan Water District of Southern California, dated December 17, 2004

CHAPTER 3: ENVIRONMENTAL PROGRAMS AND COMPLIANCE ACTIVITIES

- *Lower Colorado River Multi-Species Conservation Program, Volume II: Final Habitat Conservation Plan*, dated December 17, 2004
- *Lower Colorado River Multi-Species Conservation Program, Volume III: Biological Assessment*, dated December 17, 2004
- USFWS, *Biological and Conference Opinion on the Lower Colorado River Multi-Species Conservation Program, Arizona, California, and Nevada*, dated March 4, 2005
- Lower Colorado River Multi-Species Conservation Program Funding and Management Agreement, dated April 4, 2005
- Lower Colorado River Multi-Species Conservation Program Implementing Agreement, dated April 4, 2005
- USFWS, Incidental Take Permit TE-086834-0, issued to the Lower Colorado River Multi-Species Conservation Program Non-Federal Partners, dated April 4, 2005

Between 2005 and 2008, during the initial years of implementation of the program, LCR MSCP implementation activities focused on continuing ongoing research and monitoring programs for covered species and their habitats that had begun prior to the signing of the LCR MSCP ROD in April 2005. Procedural documents were written to provide guidance for LCR MSCP implementation, including the *Final Fish Augmentation Plan* (August 2006), the *Draft Final Guidelines for the Screening and Evaluation of Potential Conservation Areas* (August 2006) for evaluating potential habitat creation projects, as well as the *Final Science Strategy* (November 2007). Agreements were reached to use existing fish hatchery facilities to raise native fish for the fish augmentation program. Razorback suckers and bonytails were stocked in Lake Mohave and in the lower Colorado River.

As of December 31, 2008, the LCR MSCP had:

- Secured approximately 3,400 acres and 15,500 acre-feet to meet habitat creation goals listed in the HCP
- Established 542 acres of land cover types that will be managed for covered species habitat
- Reared and stocked into the lower Colorado River approximately 75,000 subadult razorback suckers and 32,000 subadult bonytails
- Conducted research and monitoring activities on covered species and their habitats

Chapter 3: List of References

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Act of October 30, 2000, Pub. L. No. 106-392, 114 Stat. 1602 (2000), later amended and supplemented by:

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Upper Colorado and San Juan River Basin Endangered Fish Recovery Programs Reauthorization Act of 2005, Pub. L. No. 109-183, 120 Stat. 290 (2006).

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50 CFR §§ 402.13 and 402.14.

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32 Fed. Reg. 4001 (March 11, 1967), Native Fish and Wildlife, Endangered Species.

45 Fed. Reg. 27710 (April 23, 1980), Determination That the Bonytail Chub (*Gila elegans*) Is an Endangered Species. Final Rule.

56 Fed. Reg. 54957 (October 23, 1991), Endangered and Threatened Wildlife and Plants; the Razorback Sucker (*Xyrauchen texanus*) Determined to Be an Endangered Species. Final Rule.

59 Fed. Reg. 13374 (March 21, 1994), Endangered and Threatened Wildlife and Plants; Determination of Critical Habitat for the Colorado River Endangered Fishes: Razorback Sucker, Colorado Squawfish, Humpback Chub, and Bonytail Chub. Final Rule.

62 Fed. Reg. 9447 (March 3, 1997), Operating Criteria and 1997 Annual Plan of Operations for Glen Canyon Dam. Adoption of operating criteria and 1997 annual plan of operations. [Appendix 37](#).

69 Fed. Reg. 2943 (January 21, 2004), Reservoir Operations to Benefit Endangered Fishes in the Gunnison and Colorado Rivers, Aspinall Unit, Colorado River Storage Project, Colorado. Notice of Intent to Prepare a Draft Environmental Impact Statement and announcement of public scoping meetings.

71 Fed. Reg. 20416 (April 20, 2006), Navajo Dam, Colorado River Storage Project, New Mexico and Colorado. Notice of Availability of Navajo Reservoir Operations Final Environmental Impact Statement.

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Bureau of Reclamation, July 31, 2006, *Record of Decision for the Navajo Reservoir Operations, Navajo Unit – San Juan River New Mexico, Colorado, Utah, Final Environmental Impact Statement*. [Appendix 39](#).

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Extension of the Cooperative Agreement for the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin, December 6, 2001. DVD [Supplement 126](#).

Cooperative Agreement for the San Juan River Basin Recovery Implementation Program, among the United States, the State of Colorado, the State of New Mexico, the Southern Ute Indian Tribe, the Ute Mountain Ute Tribe, and the Jicarilla Apache Indian Tribe, November 13, 1992 (DVD [Supplement 125](#)), later extended by:

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Amendment No. 2, August 27, 2003. DVD [Supplement 155](#).

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