

**FIFTY-SEVENTH ANNUAL REPORT**

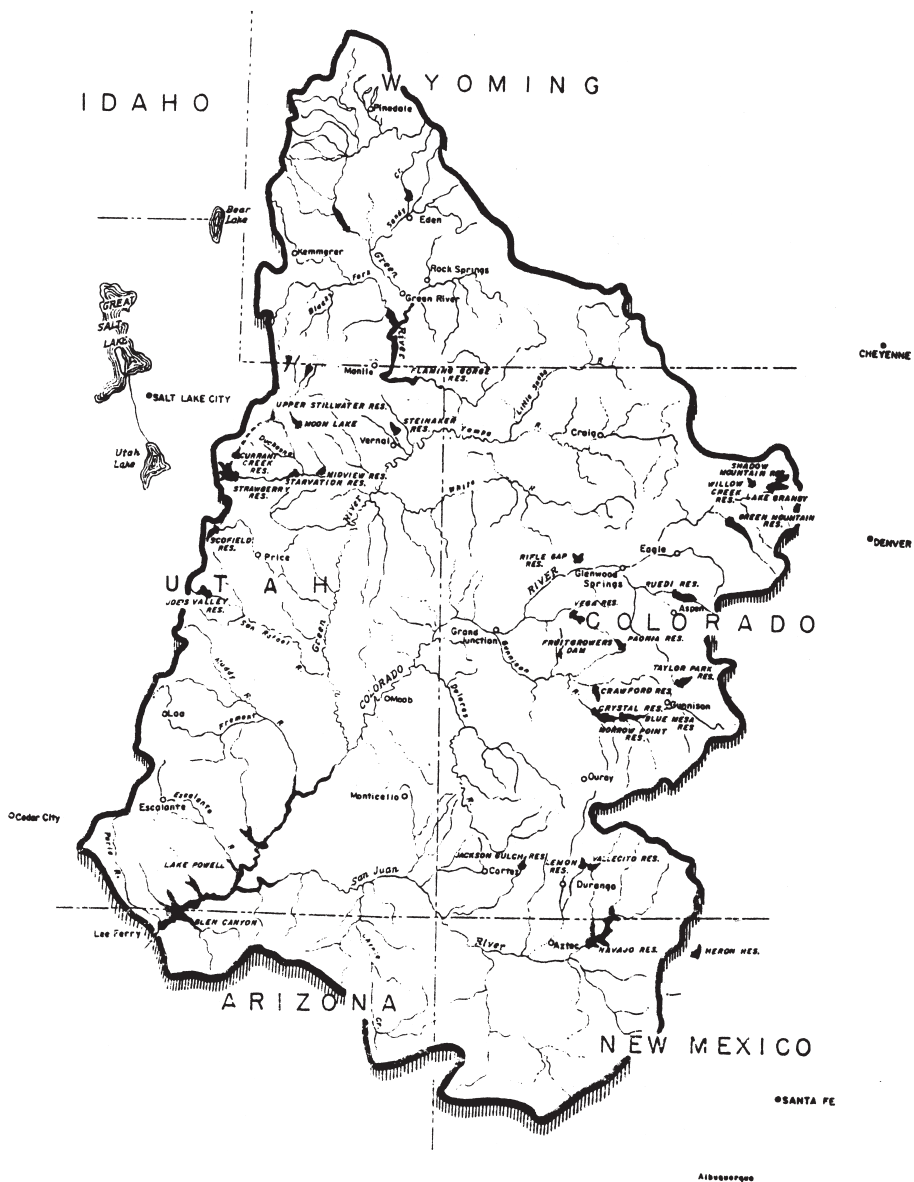
**OF THE**

# Upper Colorado River Commission



**SALT LAKE CITY, UTAH**

**SEPTEMBER 30, 2005**



## UPPER COLORADO RIVER BASIN

UPPER COLORADO RIVER  
COMMISSION





# UPPER COLORADO RIVER COMMISSION

355 South 400 East • Salt Lake City • Utah 84111 • 801-531-1150 • FAX 801-531-9705

March 31, 2006

President George W. Bush  
The White House  
Washington, D.C. 20500

Dear President Bush:

The Fifty-Seventh Annual Report of the Upper Colorado River Commission, as required by Article VIII(d)(13) of the Upper Colorado River Basin Compact, is enclosed.

The budget of the Commission for fiscal year 2007 (July 1, 2006 – June 30, 2007) is included in this report as Appendix B.

This report has also been transmitted to the Governor of each State signatory to the Upper Colorado River Basin Compact, which includes Colorado, New Mexico, Utah and Wyoming

Respectfully yours,

Don A. Ostler, P.E.  
Executive Director

Enclosure

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## PREFACE

Article VIII(d)(13) of the Upper Colorado River Basin Compact requires the Upper Colorado River Commission to “make and transmit annually to the Governors of the signatory States and the President of the United States of America, with the estimated budget, a report covering the activities of the Commission for the preceding water year.”

Article VIII(1) of the By-Laws of the Commission specifies that “the Commission shall make and transmit annually on or before April 1 to the Governors of the states signatory to the Upper Colorado River Basin Compact and to the President of the United States a report covering the activities of the Commission for the water year ending the preceding September 30.”

This Fifty-Seventh Annual Report of the Upper Colorado River Commission has been compiled pursuant to the above directives.

This Annual Report includes, among other things, the following:

- Membership of the Commission, its Committees, Advisers, and Staff;
- Roster of meetings of the Commission;
- Brief discussion of the activities of the Commission;
- Engineering and hydrologic data;
- Pertinent legal information;
- Information pertaining to congressional legislation;
- Map of the Upper Colorado River Basin;
- Status of the Storage Units and participating projects of the Colorado River Storage Project;
- Appendices containing:
  - Fiscal data, such as: budget, balance sheet, statements of revenue and expense.

## COMMISSION



**Scott M. Balcomb**  
Commissioner for  
Colorado



**John D'Antonio**  
Commissioner for  
New Mexico



**L. Richard Bratton**  
Chairman  
Commissioner for  
United States



**D. Larry Anderson**  
Commissioner for  
Utah



**Patrick T. Tyrrell**  
Commissioner for  
Wyoming

## ALTERNATE COMMISSIONERS

Rod Kuharich  
Dallin W. Jensen  
Dan S. Budd  
Benjamin C. Bracken  
Estevan Lopez

State of Colorado  
State of Utah  
State of Wyoming  
State of Wyoming  
State of New Mexico

## OFFICERS OF THE COMMISSION

Chairman  
Vice Chairman  
Secretary  
Treasurer  
Assistant Treasurer

L. Richard Bratton  
D. Larry Anderson  
Don A. Ostler  
Robert B. Nixon, Jr.  
Silvia Norman

## STAFF

Executive Director  
Assistant to the Executive Director  
and General Counsel  
Administrative Secretary

Don A. Ostler  
Jane Bird  
  
TeriKay Gomm

## COMMITTEES

The Committees of the Commission convened when required during the year. Committees and their membership at the date of this report are as follows (the Chairman and the Secretary of the Commission are ex-officio members of all committees, Article V(4) of the By-Laws):

### **Legal Committee:**

John W. Suthers  
Carol Angel  
Tanya Trujillo  
Jim Lochhead

Dallin W. Jensen  
Norman K. Johnson  
Hugh B. McFadden  
Peter Flemming

### **Engineering Committee:**

John W. Shields, Chairman  
D. Randolph Seaholm  
Harold (Hal) Simpson  
Eric Kuhn

David H. Merritt  
John Whipple  
Robert King  
Jerry Olds

### **Budget Committee:**

D. Larry Anderson, Chairman  
Rod Kuharich

Patrick T. Tyrrell  
Estevan Lopez

## ADVISORS TO COMMISSIONERS

The following individuals serve as advisers to their respective Commissioner:

### COLORADO

#### Legal:

John Suthers  
Attorney General  
State of Colorado  
Denver, Colorado

Carol D. Angel  
Senior Assistant Attorney  
General  
Natural Resources Section  
Denver, Colorado

Jim Lochhead  
Attorney at Law  
Glenwood Springs, Colorado

#### Engineering:

D. Randolph Seaholm  
Colorado Water Conservation Board  
Denver, Colorado

Harold D. (Hal) Simpson  
State Engineer  
Denver, Colorado

David H. Merritt  
Colorado River Water  
Conservation District  
Glenwood Springs, Colorado

Eric Kuhn  
Colorado River Water  
Conservation District  
Glenwood Springs,  
Colorado

### NEW MEXICO

#### Legal:

Tanya Trujillo  
General Counsel  
New Mexico Interstate Stream Commission  
Santa Fe, New Mexico

#### Engineering:

John Whipple  
Staff Engineer  
New Mexico Interstate Stream Commission  
Santa Fe, New Mexico

## UTAH

### Legal:

Dallin W. Jensen  
Attorney at Law  
Salt Lake City, Utah

Norman K. Johnson  
Assistant Attorney General  
Salt Lake City, Utah

### Engineering:

Robert King  
Chief, Interstate Streams  
Division of Water Resources  
Salt Lake City, Utah

Jerry Olds  
State Engineer  
Division of Water Rights  
Salt Lake City, Utah

### General Advisors:

Don A. Christiansen, Manager  
Central Utah Water Conservancy  
District  
Orem, Utah

Scott Ruppe, Manager  
Uintah Water  
Conservancy District  
Vernal, Utah

## WYOMING

### Legal:

Hugh B. McFadden  
Deputy Attorney General  
Cheyenne, Wyoming

### Engineering:

John W. Shields  
Interstate Streams Engineer  
Cheyenne, Wyoming

## MEETINGS OF THE COMMISSION

During the Water Year ending September 30, 2005 the Commission met as follows:

Meeting No. 249 October 7, 2004

Durango, Colorado

Meeting No. 250 June 29, 2005

Farmington, New Mexico

## ACTIVITIES OF THE COMMISSION

Within the scope and limitations of Article I(a) of the Upper Colorado River Basin Compact and under the powers conferred upon the Commission by Article VIII(d), the principal activities of the Commission have consisted of: (A) research and studies of an engineering and hydrologic nature of various facets of the water resources of the Colorado River Basin especially as related to operation of the Colorado River reservoirs; (B) collection and compilation of documents for legal library relating to the utilization of waters of the Colorado River System for domestic, industrial and agricultural purposes, and the generation of hydroelectric power; (C) legal analyses of associated laws, court decisions, reports and problems; (D) participating in activities and providing comments on proposals that would increase the beneficial consumptive uses in the Upper Basin, including environmental, fish and wildlife, endangered species and water quality activities to the extent that they might impair Upper Basin development; (E) cooperation with water resources agencies of the Colorado River Basin States on water and water-related problems; (F) an education and information program designed to aid in securing planning and investigation of storage dams, reservoirs and water resource development projects of the Colorado River Storage Project that have been authorized for construction and to secure authorization for the construction of additional participating projects as the essential investigations and planning are completed; and (G) a legislative program consisting of the analysis and study of water resource bills introduced in the U.S. Congress for enactment, the preparation of evidence and argument and the presentation of testimony before the Committees of the Congress.

The Commission has been actively involved in working with the Secretary of Interior and the seven Basin states to address development of Lower Basin shortage criteria, and to develop operating strategies to better coordinate the operations of Lakes Powell and Mead with the goal to postpone and reduce Lower Basin shortages and to reduce the likelihood of the need to curtail uses in the Upper Basin. These discussions have also included development of a process for the seven basin states to temporarily and permanently augment the supply of the Colorado River in order to meet water supply demands and to avert legal conflict. Numerous work meetings of the Legal and Engineering Committees have been held and Commissioners and staff participated in many Basin States principals' meetings and technical committee meetings. In addition, the Commission's Engineering Committee has also invested considerable time in reevaluating the hydrologic determination for the Upper Basin.

A. ENGINEERING-HYDROLOGY

1. Colorado River Salinity Program

The Upper Colorado River Commission has continued its interest and involvement in the Colorado River Basin salinity problem. The Commission staff has worked with representatives of the Commission's member States, particularly the Colorado River Basin Salinity Control Forum, which is composed of representatives from the seven Colorado River Basin States. The Forum has developed water quality standards and a plan of implementation to meet the Environmental Protection Agency Regulation (40 CFR Part 120 Water Quality Standards–Colorado River System: Salinity Control Policy and Standards Procedures).

Section 303 of the Clean Water Act requires that water quality standards be reviewed from time to time and at least once during each three-year period. The Forum in 2005 reviewed the existing State-adopted and Environmental Protection Agency-approved numeric salinity criteria and found no reason to recommend changes for the three lower mainstem stations.

The values are:

	<u>Salinity in (mg/l)</u>
Below Hoover Dam .....	723
Below Parker Dam .....	747
Imperial Dam .....	879

For several years the States, the Upper Colorado River Commission and the Forum have been working with Reclamation as it attempts to create a river model that can reproduce flows and salinity concentrations of the past and predict probabilities of flows and salinity concentrations in the future. It now appears that this model has been developed sufficiently that it can be used as a tool in preparation of the reviews.

The Salinity Control Program has been successful in implementing controls that have reduced the average concentrations at downstream measuring points by perhaps 100 mg/l. The Forum's goals are based on long-term averages, and the river model can assist with the analysis of future salinity control needs. Currently it is felt that about as much salinity control will need to be implemented in the next 15 years as has occurred in the last 15 years to meet water quality objectives. The Salinity Control Program cannot offset short-term variances caused by short-term hydrologic variances from the norm.

2. Forecast of Stream Flow

The April 1, 2005 forecast of inflow to Lake Powell by the National Weather Service, Department of Commerce, for April-July was estimated to be 8,500,000 acre-feet<sup>1</sup>. The actual unregulated inflow to Lake Powell for the period April-July 2005 amounted to 8,810,000 acre-feet<sup>2</sup>, which was about 111 percent of the 30-year (1971-2000) average flow. Actual regulated inflow to Lake Powell for the period April-July 2005 was 7,490,000 acre-feet.

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1 Including water to be stored upstream in other Colorado River Storage Project Reservoirs.

2 Adjusted for upstream regulation and depletions.

For the period October 1, 2004 through September 30, 2005, the change in reservoir storage, excluding bank storage and evaporation, at selected Upper Basin reservoirs was as follows:

- Fontenelle decreased 43,000 acre-feet
- Flaming Gorge increased 498,000 acre-feet
- Taylor Park increased 5,606 acre-feet
- Blue Mesa increased 81,000 acre-feet
- Morrow Point decreased 1,471 acre-feet
- Crystal decreased 2,431 acre-feet
- Navajo increased 566,400 acre-feet
- Lake Powell increased 2,770,000 acre-feet

The virgin flow<sup>3</sup> of the Colorado River at Lee Ferry<sup>4</sup> for the 2005 water year amounted to 17.7 million acre-feet<sup>5</sup>.

### 3. Summary of Reservoir Levels and Contents

#### Lake Powell <sup>6</sup>

Inflow to Lake Powell was above average in water year 2005, and for the first time since water year 1999, the water surface elevation at Lake Powell increased. Five years of extreme drought in the Colorado River Basin caused the water surface elevation of Lake Powell to decline over a five and a half year period (from September 1999 through April 2005). The water surface elevation of Lake Powell reached a low on April 8, 2005, at 3,555.1 feet (7,956,400 acre-feet), 144.9 feet from full pool. Lake Powell had not been this low since 1969, prior to the reservoir's first filling in 1980. Reservoir storage on April 8, 2005 was only 33 percent of capacity. Above-average inflow reversed this trend in 2005. On September 30, 2005, the water surface elevation of Lake Powell had increased to 3,602.0 feet (1,097.9 meters), 98.0 feet (29.9 meters) from full pool. Lake Powell reached a seasonal peak elevation of 3,608.4 feet (1,099.8 meters), 91.6 feet from full, on July 14, 2005.

Lake Powell began water year 2005 with 9.169 maf (11,310 mcm) of water in storage (38 percent of capacity), 4.77 maf (5,880 mcm ) lower than that of Lake Mead. As water year 2005 ended on September 30, 2005, Lake Powell storage had increased to 11.94 maf (14,703 mcm) or 49 percent of capacity. Because of reduced storage and Lake Powell storage being less than Lake Mead storage, releases from Glen Canyon Dam in 2005 were scheduled to maintain the minimum release objective from Lake Powell of 8.23 maf (10,150 mcm) in accordance with Article II(2) of the Operating Criteria. Forecasted inflow to Lake Powell was above average for the majority of water year 2005. While inflow was above average, the inflow volume was not sufficient to trigger storage equalization releases from Lake Powell to Lake Mead. The total release from Lake Powell in water year 2005 was 8.23 maf (10,150 mcm).

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3 Virgin flow is the estimated flow of the stream if it were in its natural state and unaffected by the activities of man.

4 Lee Ferry, Arizona is the division point between the upper and lower basins of the Colorado River as defined in the Colorado River compact. It is located about one mile downstream from the mouth of the Paria River and about 16 miles downstream from Glen Canyon Dam.

5 Based on provisional records subject to revision.

6 From the 2006 Annual Operating Plan.

In 2003 and 2004, Reclamation conducted a NEPA process to study the effects of implementing an interim 602(a) storage guideline to assist in the determination of the quantity of water considered necessary to be in storage as of September 30 of each year as required by Section 602(a) of the Colorado River Basin Project Act. The guideline was originally proposed by the Colorado River Basin States (65 Federal Register 48537, August 8, 2000). A Final Environmental Assessment titled "Adoption of an Interim 602(a) Storage Guideline" was completed in March 2004. A Finding of No Significant Impact (FONSI) was approved by the Regional Directors of Reclamation's Upper and Lower Colorado Regions in March 2004. Under the Interim 602(a) Guideline, 602(a) storage requirements determined in accordance with Article II(1) of the Operating Criteria will utilize a value of not less than 14.85 maf (elevation 3,630 feet) for Lake Powell through the year 2016.

On April 24, 2002, members of the Glen Canyon Adaptive Management Work Group (AMWG) recommended to the Secretary that a 2-year experimental flow test be made from Glen Canyon Dam beginning in water year 2003. The recommendation addressed the decline of two key resources downstream of Glen Canyon Dam: fine sediment and the endangered humpback chub. On August 21, 2004, members of the AMWG recommended to the Secretary that replication of the daily high fluctuating releases (5,000 to 20,000 cfs) continue adaptively from January through April of 2005. The AMWG also proposed that if the Secretary proceeded to implement a high-flow release to mobilize sediment in water year 2005, that such release take place in November 2004 rather than January 2005.

To document the proposed experimental flows for water year 2003 and 2004, Reclamation, the National Park Service and the United States Geological Survey jointly prepared the proposed Experimental Releases from Glen Canyon Dam and Removal of Non-Native Fish EA (September 2002), under NEPA. The EA incorporated a Biological Assessment for the Fish and Wildlife Service under the ESA. A FONSI on the experimental releases was signed by the three agencies on December 6, 2002. To address the AMWG's August 11, 2004 recommendations for water years 2005 and 2006, a supplemental EA was prepared by these same three agencies. A FONSI for the supplemental EA was signed on November 11, 2004.

Large flow events on the Paria River and other tributaries below Glen Canyon Dam from September 2004 through November 2004 resulted in the required input of sediment to trigger a high-flow test, as described in the EA and supplemental EA. Beginning on Sunday, November 21, 2004, consistent with the NEPA documentation high-flow test from Glen Canyon Dam was initiated. Releases were increased to powerplant capacity, and subsequently releases from the river outlet tubes (bypass tubes) were initiated. A peak flow of approximately 41,000 cfs was released for 60 hours. The total volume of water bypassing the powerplant during the high-flow test was 92,700 acre-feet (114mc). The goal of the high-flow test was to mobilize and redistribute sediment input from tributaries downstream from the dam to enlarge existing beaches, sandbars and backwaters. Post high-flow assessment data have documented substantial increases to beaches and sandbars in upper Marble Canyon. Monitoring of these features will continue to assess their longevity.

Daily high fluctuating releases (fish suppression flows) from Glen Canyon Dam, another aspect of the experimental flows, were carried out from January 2 through April 8, 2005. Releases during this period ranged between a high of 20,000 cfs (566 cms) to a low of 5,000 cfs (142 cms) each day (except Sundays) under revised ramping rates as described in the EA and the supplemental EA. These fish suppression flows are intended to benefit the endangered humpback chub by reducing the spawning and recruitment of nonnative fish.

On August 31, 2005, the AMWG approved a budget and work plan for 2006. Included in the work plan is a recommendation to return to operations consistent with the parameters of the Glen Canyon Operating Criteria (the ROD for the Glen Canyon Dam Final Environmental Impact Statement) in January through April of 2006. Pending consideration by the Secretary of this recommendation, fish



Glen Canyon Dam During Drought - Courtesy of Bureau of Reclamation

suppression flows are not anticipated in 2006. The work plan approved by the AMWG also recommends that test releases greater than powerplant capacity not be implemented in 2006. This recommendation reflects that need to fully assess the effects of the November 2004 test release on sediment conservation in Marble and Grand Canyons during 2006.

Beginning on September 3, 2005 and continuing through October 31, 2005, a low-flow test release took place from Glen Canyon Dam. This test release was implemented to analyze the effects of two release regimes, steady and limited fluctuating releases, on endangered humpback chub habitats and on conservation of fine sediment in the river corridor below Glen Canyon Dam. From September 3, 2005, through September 20, 2005, the daily fluctuation range in Glen Canyon Dam releases was limited to a low of 6,500 cfs (184 cms) to a high of 9,000 cfs (255 cms). From September 21, 2005, through October 7, 2005, steady releases of 8,000 cfs (227 cms) to 9,000 cfs (255 cms) fluctuating flow regime was repeated. From October 20, 2005, through October 31, 2005, releases returned to the steady 8,000 cfs (227 cms) release regime, completing the test.

### **Lake Mead**

For calendar year 2005, the Normal condition was the criterion governing the operation of Lake Mead in accordance with Article III(3)(a) of the Operating Criteria, Article II(B)(1) of the Decree, and Section 2(A)(1) of the Interim Surplus Guidelines. A volume of 1.5 maf (1,850 mcm) of water was scheduled for delivery to Mexico in accordance with Article 15 of the 1944 United States-Mexico Treaty and Minutes No. 242 and 310 of the International Boundary and Water Commission.

Tributary inflows into Lake Mead for water year 2005 of approximately 1.84 maf (2,269 mcm) continued through early spring 2005. Storms also resulted in demands below Hoover Dam being reduced. With the reduced downstream demands and above average tributary inflows, Lake Mead gained 1.28 maf (1,579 mcm) in storage.

Lake Mead began water year 2005 at elevation 1,125.86 feet (343 meters), with 13.9 maf (17,146 mcm) in storage, which is 54 percent of the conservation capacity of 25.877 maf (31,919 mcm). Lake Mead's elevation increased to elevation 1,147.66 (349 meters) by the end of March 2005. After March 2005, Lake Mead steadily declined and ended the water year at elevation 1,138.36 feet (347 meters) with 14.210 maf (18,773 mcm) in storage, 59 percent of capacity.

The total release from Lake Mead through Hoover Dam during water year 2005 was 7.941 maf (9,795 mcm). The total release from Lake Mead through Hoover Dam during calendar year 2005 is projected to be 8.321 maf (10,264 mcm). Consumptive use from Lake Mead during calendar year 2005 diverted through the Robert Griffith Water Project is projected to be 0.282 maf (348 mcm).

Table 1 on page 13 shows the Statistical Data from Principal Reservoirs in the Upper Colorado River Basin. Table 2 on page 14 provides the same information for the Lower Colorado River Basin reservoirs.

The results of the long-range reservoir operation procedures adopted by the Secretary of the Interior for Lake Powell, Flaming gorge, Fontenelle, Navajo, and Blue Mesa reservoirs in the Upper Colorado River Basin and for Lake Mead in the Lower Basin are illustrated on pages 15 through 22 for the 2005 water year.

In water year 2004, there was no equalization of storage as dictated by Section 602(a) of Public Law 90-537. The drawdown of Lake Powell was governed by factors other than the equalization criteria.

**Table 1**  
**STATISTICAL DATA FOR PRINCIPAL RESERVOIRS IN COLORADO RIVER BASIN**  
**UPPER BASIN**

Colorado River Storage Project  
(Total Surface Capacity)

(Units: Elevation = feet; Capacity = 1,000 acre-feet)

	Fontenelle		Flaming Gorge		Taylor Park		Blue Mesa		Morrow Point		Crystal		Navajo		Lake Powell	
	Elev.	Cap.	Elev.	Cap.	Elev.	Cap.	Elev.	Cap.	Elev.	Cap.	Elev.	Cap.	Elev.	Cap.	Elev.	Cap.
River elevation at dam (average tailwater)	-	-	5,603	0	9,174	0	7,160	0	6,775	0	6,534	0	5,720	0	3,138	0
Dead Storage	6,408	0.56	5,740	40	-	-	7,358	111	6,808	0	6,670	8	5,775	13	3,370	1,893
Inactive Storage (minimum power pool)	-	-	5,871	273	-	-	7,393	192	7,100	75	6,700	12	5,990 <sup>1</sup>	673	3,490	5,890
Rated Head	6,491	234	5,946	1,102	-	-	7,438	361	7,108	80	6,740	20	-	-	3,570	11,000
Maximum Storage (without surcharge)	6,506	345	6,040	3,789	9,330	106	7,519	941	7,160	117	6,755	25	6,085	1,709	3,700	26,215

<sup>1</sup> The elevation for inactive storage for Navajo Reservoir is required for the Navajo Indian Irrigation Project.

**Table 2**  
**STATISTICAL DATA FOR PRINCIPAL RESERVOIRS IN COLORADO RIVER BASIN**  
**LOWER BASIN**

(Usable Surface Capacity)

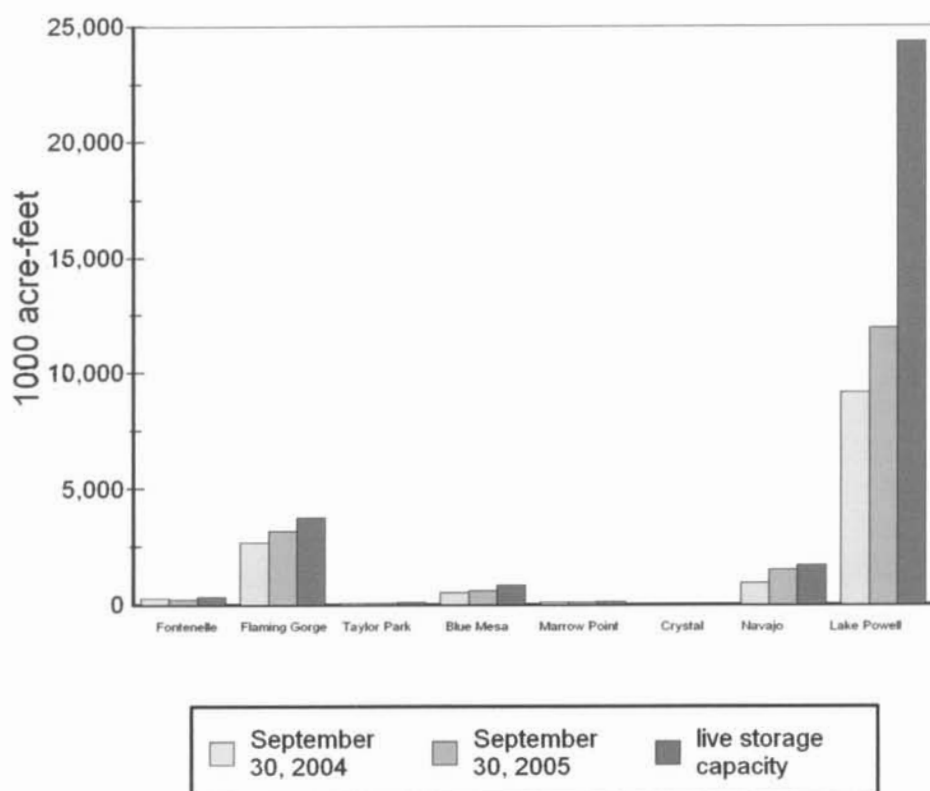
(Units: Elevation = feet; Capacity = 1,000 acre-feet)

	Lake Mead		Lake Mohave		Lake Havasu	
	Elev.	Capacity	Elev.	Capacity	Elev.	Capacity
River elevation at dam (average tailwater)	646	-2,378	506	-8.5	370	-28.6
Dead Storage	895	0	533.39	0	400	0
Inactive Storage (minimum power pool)	1,050	7,471	570	217.5	440 <sup>1</sup>	439.4
Rated Head	1,122.8	13,633	-	-	-	-
Maximum Storage (without surcharge)	1,221.4	26,159	647	1,809.8	450	619.4

<sup>1</sup> The elevation for inactive storage for Lake Havasu is the contractual minimum for delivery to Metropolitan Water District's Colorado River Aqueduct.

Storage in Principal Reservoirs at the End of Water Year 2005  
Upper Basin  
Live Storage Contents

Reservoir	Sept. 30, 2004 (acre-feet)	percent live capacity	Sept. 30, 2005 (acre-feet)	percent live capacity	change in contents (acre-feet)
FONTENELLE	288,300	83.6%	245,000	71.1%	-43,300
FLAMING GORGE	2,678,600	71.4%	3,177,000	84.7%	498,400
TAYLOR PARK	66,800	62.9%	71,000	66.8%	4,200
BLUE MESA	507,500	61.2%	588,000	70.9%	80,500
MORROW POINT	111,000	94.9%	112,000	95.7%	1,000
CRYSTAL	16,500	94.1%	14,000	79.8%	-2,500
NAVAJO	935,100	55.1%	1,516,000	89.4%	580,900
LAKE POWELL	9,169,500	37.7%	11,939,000	49.1%	2,769,500
TOTAL	13,773,300		17,662,000		3,888,700

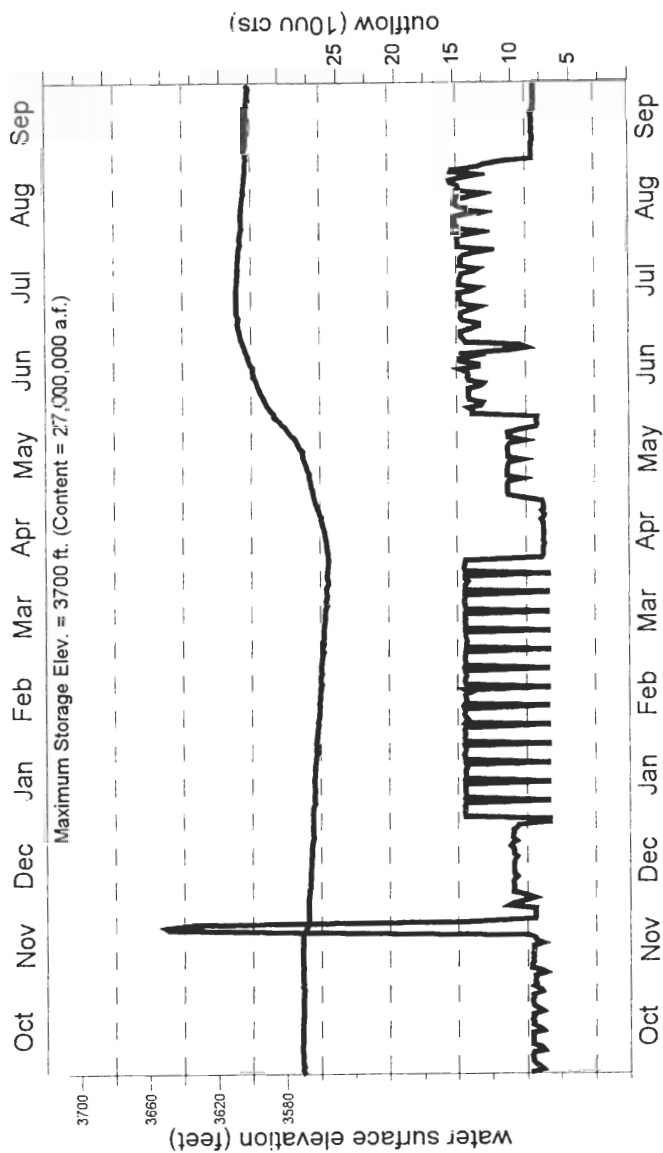


# Lake Powell - Glen Canyon Dam

Live Storage Capacity - 24,322,000 acre-feet

Power Generation Capacity - 1,356,000 KW

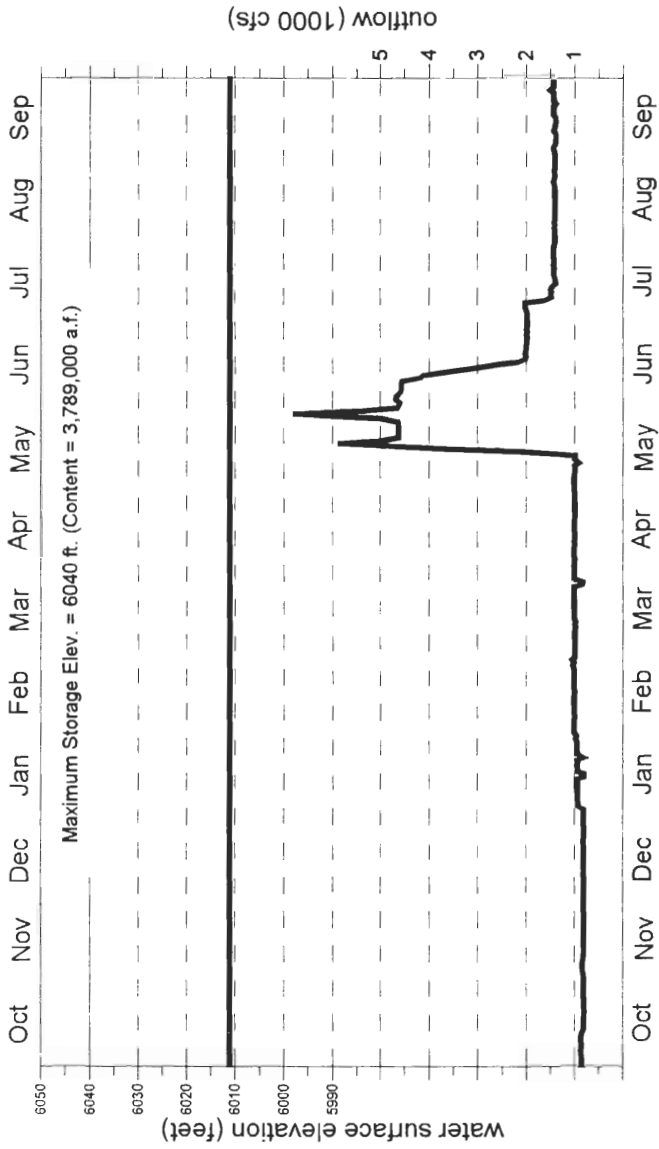
Live Storage 9/30/05 - 11,939,000 acre-feet



Lake Powell  
Water Year 2005

# Flaming Gorge

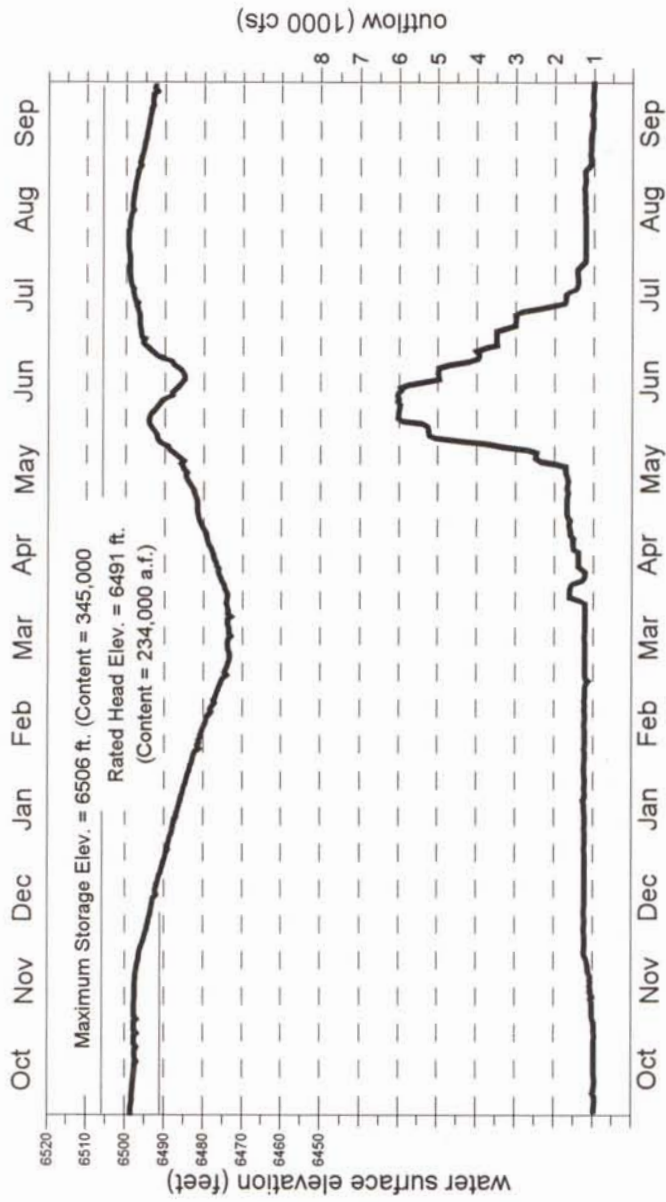
Live Storage Capacity - 3,749,000 acre-feet  
 Power Generation Capacity - 144,000 KW  
 Live Storage 9/30/05 - 3,176,900 acre-feet



Flaming Gorge Reservoir  
 Water Year 2005

# Fontenelle

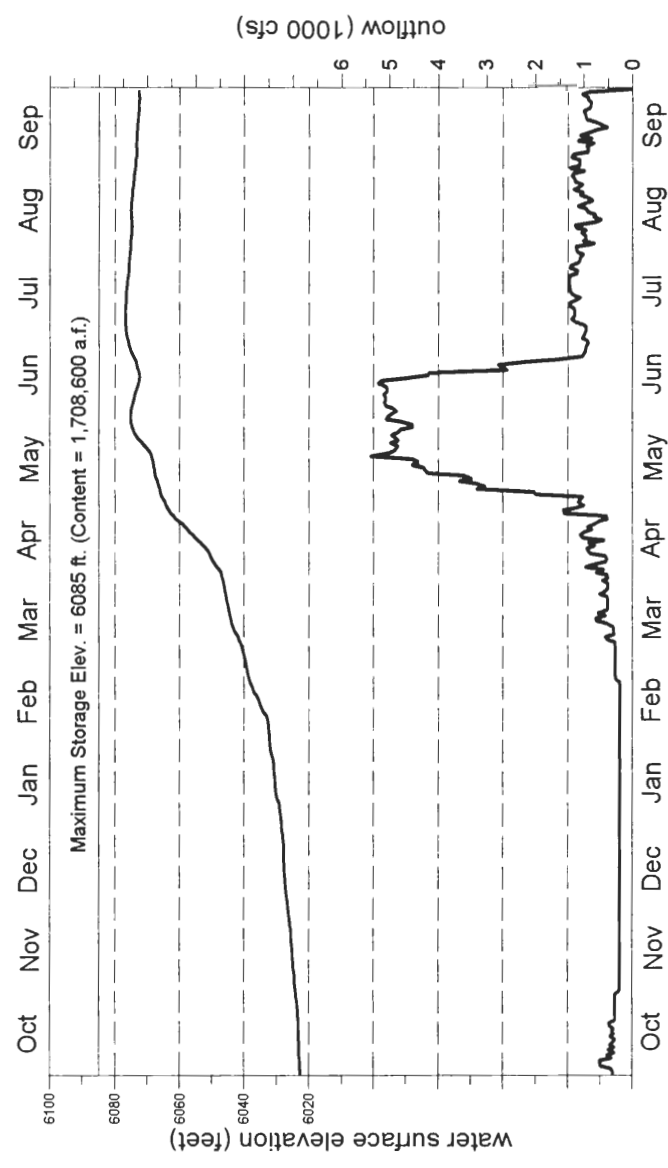
Live Storage Capacity - 344,800 acre-feet  
 Power Generation Capacity - 13,000 KW  
 Live Storage 9/30/05 - 245,400 acre-feet



Fontenelle Reservoir  
 Water Year 2005

# Navajo

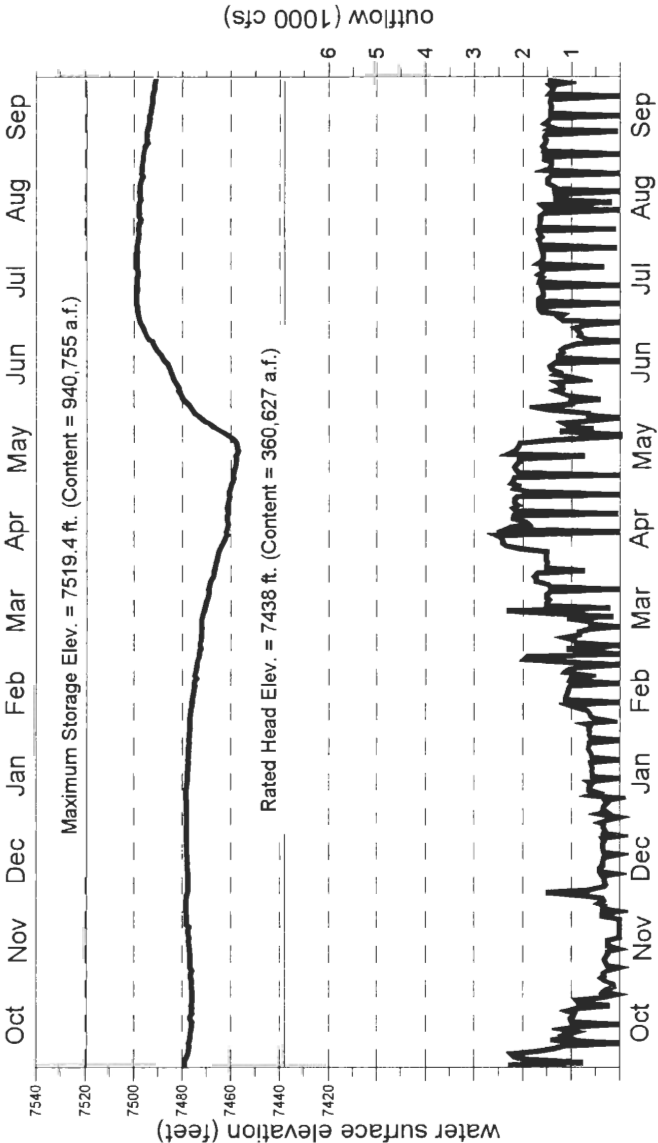
Live Storage Capacity - 1,695,900 acre-feet  
 Power Generation Capacity - 0 KW  
 Live Storage 9/30/04 - 935,100 acre-feet



Navajo Reservoir  
 Water Year 2004

Blue Mesa

Live Storage Capacity - 829,000 acre-feet  
Power Generation Capacity - 96,000 KW  
Live Storage 9/30/05 -588,400 acre-feet



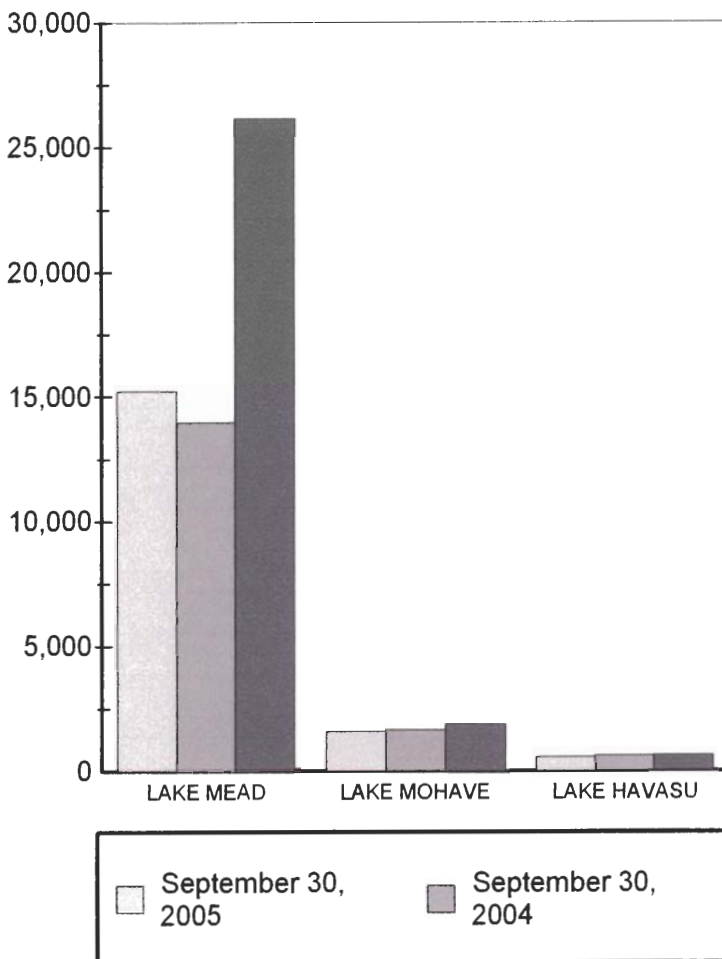
Blue Mesa Reservoir  
Water Year 2005

# Storage In Principal Reservoirs - Water Year 2005

## Lower Basin

### Live Storage Contents

reservoir	Sept. 30, 2004 (acre-feet)	percent live capacity	Sept. 30, 2005 (acre-feet)	percent live capacity	change in contents (acre-feet)
LAKE MEAD	13,937,000	53.3%	15,219,000	58.2%	1,282,000
LAKE MOHAVE	1,605,000	88.7%	1,572,700	86.9%	-32,300
LAKE HAVASU	589,000	95.2%	554,300	89.5%	-34,700
TOTAL	16,131,000		17,346,000		1,215,000

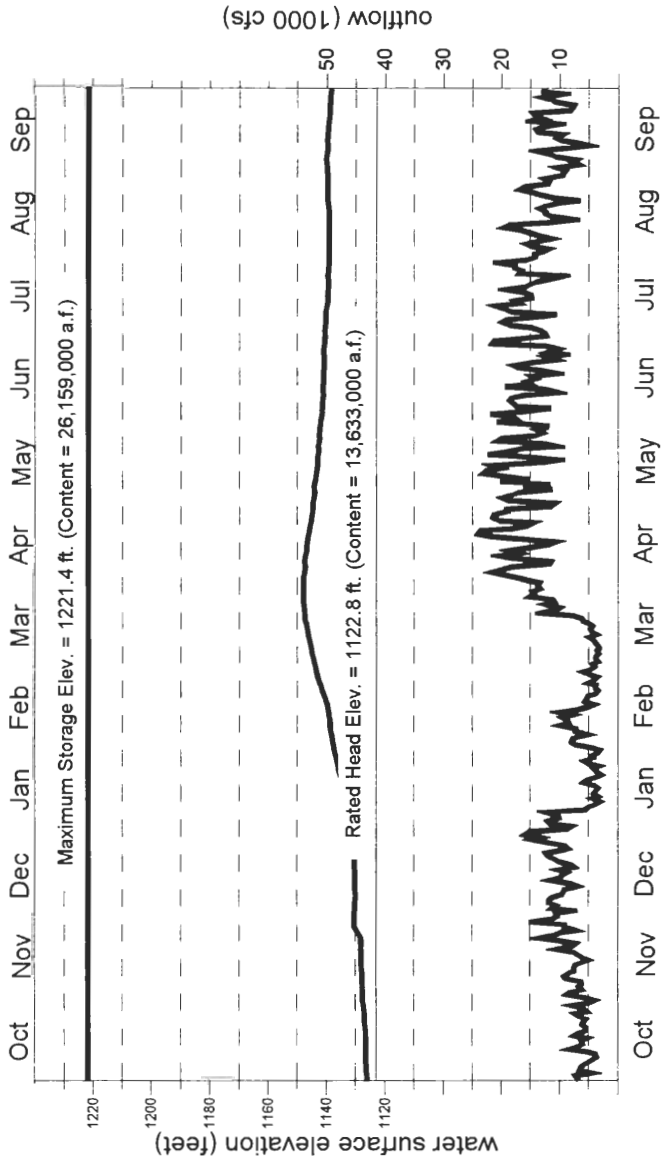


# Lake Mead - Hoover Dam

Live Storage Capacity - 26,159,000 acre-feet

Power Generation Capacity - 1,914,000 KW

Live Storage 9/30/05 - 15,219,000 acre-feet



Lake Mead Reservoir  
Water Year 2005

#### 4. Flows of Colorado River

Runoff<sup>7</sup> during the year ending September 30, 2005 ranged from 97 percent of the long term mean (1923-2002) mean at the Colorado River Station near Cisco, Utah to 140 percent of the long term (1928-2002) at the San Juan River station near Bluff, Utah. The volumes of runoff at these stations were 5,065,000 acre-feet and 2,397,000 acre-feet respectively. Runoff at the Green River station near Green River, Utah totaled 4,689,000 acre-feet, which was 105 percent of the long term (1906-2002) mean.

Table 3 on page 24 and 25 shows the estimated virgin flow of the Colorado River at Lee Ferry, Arizona for each water year from 1896 through 2005. Column (4) of the table shows the average virgin flow for any given year within the period computed through water year 2005. Column (5) shows the average virgin flow for a given year within the period computed since water year 1896. Column (6) shows the average virgin flow for each progressive ten-year period beginning with the ten-year period ending on September 30, 1905. The difference between the virgin flow for a given year and the average flow over the 110 year period, 1896 through 2005, is shown in Column (7).

Article III(d) of the Colorado River compact stipulates that "the States of the Upper division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in a continuing progressive series beginning with the first day of October next succeeding the ratification of this Compact." Prior to the storage of water in the Colorado River Storage Project reservoirs, which began in 1962, the flow of the river at Lee Ferry in any ten consecutive years was greatly in excess of the 75,000,000 acre-feet required by the Compact. Beginning in 1962, Colorado River Storage Project reservoirs have regulated the river above Glen Canyon Dam. Table 4, on page 26, shows the historic flow at Lee Ferry for the period 1953 through 2005. The historic flow for each progressive ten-year period from 1953 through 2005, beginning with the ten-year period ending September 30, 1962, the commencement of storage in Colorado River Storage Project reservoirs, is shown in Column (3).

In each consecutive ten-year period, the total flow equaled or exceeded the 75,000,000 acre-feet required by the Compact. The flow at Lee Ferry during the ten-year period ending September 30, 2005 was 101,631,000 acre-feet.

The graphs on pages 29 and 30 illustrate some of the pertinent historical facts related to the amounts of water produced by the Colorado River System above Lee Ferry, Arizona, the compact division point between the Upper and Lower Colorado River Basins. The first graph, on page 29, is entitled Colorado River Flow at Lee Ferry, Arizona. The top of each vertical bar represents the estimated virgin flow of the river, i.e., the flow of the river in million of acre-feet past Lee Ferry for a given year had it not been depleted by activities of man. Each vertical bar has two components: The lower shaded part represents the estimated or measured historic flow at Lee Ferry, and the difference between the two sections of the bar in any given year represents the stream depletion, or the amount of water estimated to have been removed by man from the virgin supply upstream from Lee Ferry. It is worth noting that in 1977, and again in 1981, the historic flow at Lee Ferry exceeded the virgin flow. Beginning in 1962, part of this depletion at Lee Ferry was caused by the retention and storage of water in storage units of the Colorado River Storage Project. The horizontal line (at approximately 14.8 million acre-feet) shows the long-term average virgin flow from 1896 through 2005. Because the Colorado River Compact is administered on the basis of running averages covering periods of ten years, the progressive ten-year average historic and virgin flows are displayed on this graph.

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<sup>7</sup>Based on provisional records subject to revision.

Table 3  
ESTIMATED VIRGIN FLOW AT LEE FERRY  
(million acre-feet)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Years to 2003	Year Ending Sept. 3	Estimated Virgin Flow	Average to 2003	Average Since 1896	Progressive 10-year Moving Average	Virgin Flow Minus 108-year Average
110	1896	10.1	14.8	10.1		-4.7
109	1897	18.0	14.9	14.1		3.2
108	1898	13.8	14.8	14.0		-1.0
107	1899	15.9	14.8	14.5		1.0
106	1900	13.2	14.8	14.2		-1.7
105	1901	13.6	14.8	14.1		-1.3
104	1902	9.4	14.9	13.4		-5.5
103	1903	14.8	14.9	13.6		-0.1
102	1904	15.6	14.9	13.8		0.7
101	1905	16.0	14.9	14.0	14.0	1.1
100	1906	19.1	14.9	14.5	14.9	4.2
99	1907	23.4	14.9	15.2	15.5	8.5
98	1908	12.9	14.8	15.1	15.4	-2.0
97	1909	23.3	14.8	15.7	16.1	8.4
96	1910	14.2	14.7	15.6	16.2	-0.7
95	1911	16.0	14.7	15.6	16.5	1.1
94	1912	20.5	14.7	15.9	17.6	5.6
93	1913	14.5	14.6	15.8	17.6	-0.4
92	1914	21.2	14.6	16.1	18.1	6.3
91	1915	14.0	14.5	16.0	17.9	-0.9
90	1916	19.2	14.6	16.1	17.9	4.3
89	1917	24.0	14.5	16.5	18.0	9.1
88	1918	15.4	14.4	16.4	18.2	0.5
87	1919	12.5	14.4	16.3	17.2	-2.4
86	1920	22.0	14.4	16.5	17.9	7.1
85	1921	23.0	14.3	16.8	18.6	8.1
84	1922	18.3	14.2	16.8	18.4	3.4
83	1923	18.3	14.2	16.9	18.8	3.4
82	1924	14.2	14.1	16.8	18.1	-0.7
81	1925	13.0	14.1	16.6	18.0	-1.9
80	1926	15.9	14.1	16.6	17.7	1.0
79	1927	18.6	14.1	16.7	17.1	3.7
78	1928	17.3	14.0	16.7	17.3	2.4
77	1929	21.4	14.0	16.8	18.2	6.5
76	1930	14.9	13.9	16.8	17.5	0.0
75	1931	7.8	13.9	16.5	16.0	-7.1
74	1932	17.2	14.0	16.6	15.9	2.3
73	1933	11.4	13.9	16.4	15.2	-3.5
72	1934	5.6	13.9	16.1	14.3	-9.3
71	1935	11.6	14.1	16.0	14.2	-3.3
70	1936	13.8	14.1	16.0	14.0	-1.1
69	1937	13.7	14.1	15.9	13.5	-1.2
68	1938	17.5	14.1	16.0	13.5	2.6
67	1939	11.1	14.1	15.8	12.5	-3.8
66	1940	8.6	14.1	15.7	11.8	-6.3
65	1941	18.1	14.2	15.7	12.9	3.2
64	1942	19.1	14.1	15.8	13.1	4.2
63	1943	13.1	14.1	15.8	13.2	-1.8
62	1944	15.2	14.1	15.7	14.2	0.3
61	1945	13.4	14.1	15.7	14.4	0.3
60	1946	10.4	14.1	15.6	14.0	-1.5
59	1947	15.5	14.1	15.6	14.2	-4.5
58	1948	15.6	14.1	15.6	14.0	0.6
57	1949	16.4	14.1	15.6	14.5	1.5
56	1950	12.9	14.0	15.6	15.0	-2.0
55	1951	11.6	14.1	15.5	14.3	-3.3
54	1952	20.7	14.1	15.6	14.5	5.8
53	1953	10.6	14.0	15.5	14.2	-4.3
52	1954	7.7	14.0	15.4	13.5	-7.2

Table 3  
ESTIMATED VIRGIN FLOW AT LEE FERRY  
(million acre-feet)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Years to 2003	Year Ending Sept 3	Estimated Virgin Flow	Average to 2005	Average Since 1896	Progressive 10-year Moving Average	Virgin Flow Minus 110-year Average
51	1955	9.2	14.2	15.3	13.1	-5.6
50	1956	10.7	14.3	15.2	13.1	-4.2
49	1957	20.1	14.3	15.3	13.6	5.2
48	1958	16.5	14.3	15.3	13.6	1.6
47	1959	8.6	14.2	15.2	12.9	-6.3
46	1960	11.3	14.3	15.1	12.7	-3.6
45	1961	8.5	14.4	15.0	12.2	-6.4
44	1962	17.3	14.6	15.0	12.1	2.4
43	1963	8.4	14.5	15.0	11.8	-6.5
42	1964	10.2	14.6	14.9	12.1	-4.7
41	1965	18.9	14.8	14.9	13.1	4.0
40	1966	11.2	14.7	14.9	13.1	-3.7
39	1967	11.9	14.7	14.8	12.3	-3.0
38	1968	13.7	14.8	14.8	12.0	-1.2
37	1969	14.4	14.9	14.8	12.6	-0.5
36	1970	15.4	14.9	14.8	13.0	0.5
35	1971	15.1	14.9	14.8	13.7	0.2
34	1972	12.2	14.8	14.8	13.1	-2.7
33	1973	19.4	14.9	14.9	14.2	4.5
32	1974	13.3	14.8	14.8	14.6	-1.6
31	1975	16.6	14.8	14.9	14.3	1.7
30	1976	11.6	14.8	14.8	14.4	-3.3
29	1977	5.8	14.9	14.7	13.8	-9.1
28	1978	15.2	15.2	14.7	13.9	0.3
27	1979	17.9	15.1	14.8	14.3	3.0
26	1980	17.5	15.0	14.8	14.5	2.6
25	1981	8.2	14.9	14.7	13.8	-6.7
24	1982	16.2	15.2	14.7	14.2	1.3
23	1983	24.0	15.2	14.8	14.6	9.1
22	1984	24.5	14.7	14.9	15.8	9.6
21	1985	20.8	14.2	15.0	16.2	5.9
20	1986	21.9	13.9	15.1	17.2	7.0
19	1987	16.9	13.4	15.1	18.3	2.0
18	1988	11.8	13.2	15.1	18.0	-3.1
17	1989	10.1	13.3	15.0	17.2	-4.8
16	1990	9.0	13.3	15.0	16.3	-5.9
15	1991	12.3	13.8	14.9	16.8	-2.6
14	1992	11.0	14.0	14.9	16.2	-3.9
13	1993	18.0	14.2	14.9	15.6	3.1
12	1994	10.5	13.9	14.9	14.2	-4.4
11	1995	20.1	14.2	14.9	14.2	5.2
10	1996	14.3	13.5	14.9	13.4	-0.6
9	1997	21	13.4	15.0	13.8	6.1
8	1998	16.9	12.1	15.0	14.3	2.0
7	1999	16.4	11.2	15.0	15.0	1.5
6	2000	10.9	9.9	15.0	15.1	-4.0
5	2001	11	9.5	14.9	15.0	-3.9
4	2002	6.4	8.8	14.9	14.6	-8.5
3	2003	11.1	11.1	14.8	13.9	-3.8
2	2004	10.9	14.3	14.8	13.9	-3.9
1	2005	17.7	17.7	14.8	13.7	2.9
Maximum		24.5			18.8	9.6
Minimum		5.6			11.8	-9.3
Average		14.8			15.0	0.0

Table 4  
HISTORIC FLOW AT LEE FERRY  
1953-2005

Water Year Ending Sept. 30	Historic Flow (1,000 a.f.)	Progressive 10- Year Total (1,000 a.f.)
1954	6,116	
1955	7,307	
1956	8,750	
1957	17,340	
1958	14,260	
1959	6,756	
1960	9,192	
1961	6,674	
1962	14,790	
1963	2,520	93,705
1964	2,427	90,016
1965	10,835	93,544
1966	7,870	92,664
1967	7,824	83,148
1968	8,358	77,246
1969	8,850	79,340
1970	8,688	78,836
1971	8,607	80,769
1972	9,330	75,309
1973	10,141	82,930
1974	8,277	88,780
1975	9,274	87,219
1976	8,494	87,843
1977	8,269	88,288
1978	8,369	88,299
1979	8,333	87,782
1980	10,950	90,044
1981	8,316	89,753
1982	8,323	88,746
1983	17,520	96,125
1984	20,518	108,366
1985	19,109	118,201
1986	16,866	126,573
1987	13,450	131,754
1988	8,160	131,545
1989	7,995	131,207
1990	8,125	128,382
1991	8,132	128,198
1992	8,023	127,898
1993	8,137	118,515
1994	8,306	106,303
1995	9,242	96,436
1996	11,530	91,100
1997	13,857	91,507
1998	13,444	96,791
1999	11,428	100,224
2000	9,603	101,702
2001	8,362	101,932
2002	8,346	102,255
2003	8,365	102,483
2004	8,335	102,512
2005*	8,361	101,631

Storage in Flaming Gorge and Navajo Reservoirs began in 1962.

Storage in Glen Canyon Reservoir began in 1963.

Storage in Fontenelle reservoir began in 1964.

\*Based upon provisional streamflow records subject to revision.

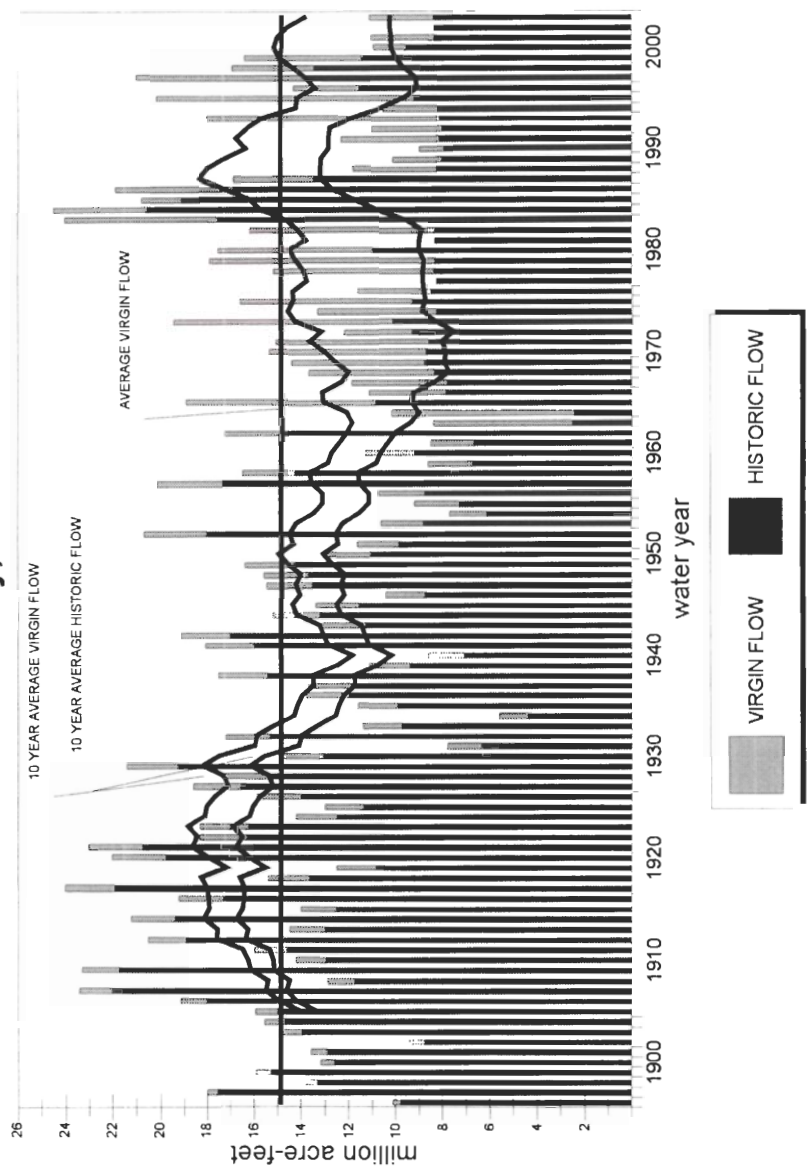
The second graph on page 30, entitled Lee Ferry Average Annual Flow for Selected Periods, is a graphical representation of historic and virgin flow averages for several periods of record. The periods of water years selected were those to which reference is usually made for various purposes in documents pertaining to the Colorado River System.

Several important hydrologic facts are apparent from these two graphs on pages 29 and 30.

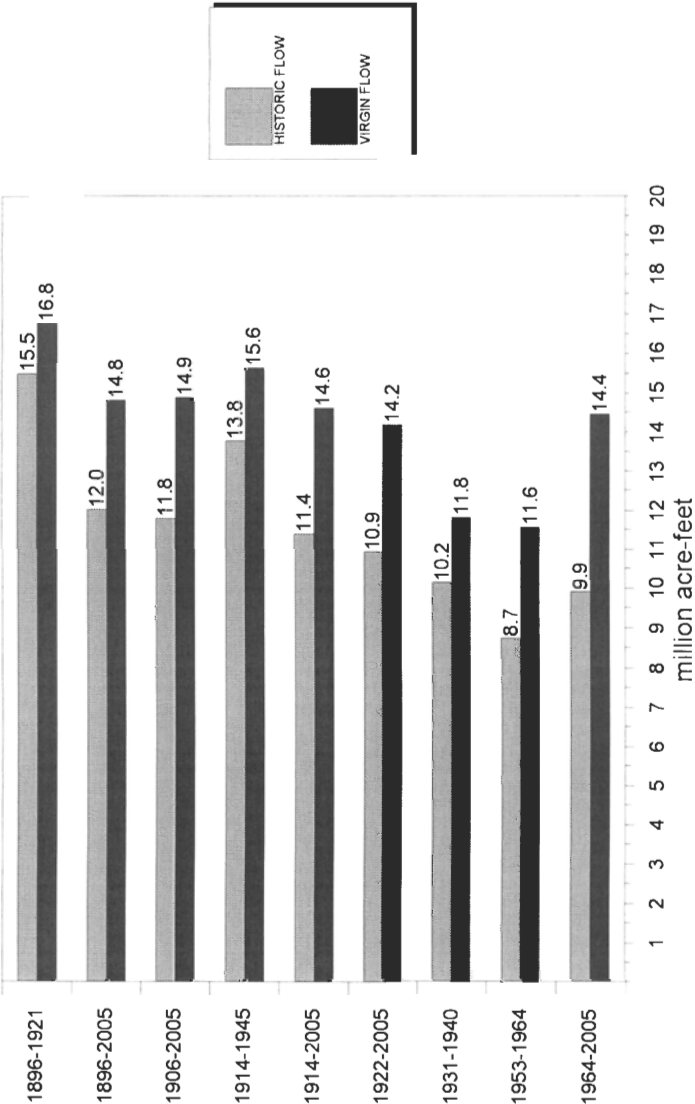
- (1) A vast majority of the high flows occurred prior to 1929.
- (2) Since the 1924-1933 decade, the progressive ten-year average virgin flow has not exceeded the average virgin flow except in the 1941-1950 and the exceptionally wet 1975-1984 through 1984-1993 decades.
- (3) For the period 1896-1921, which is prior to the Colorado River Compact of 1922, the average virgin flow was estimated to be 16.8 million acre-feet per year, which is considerably greater than for any other period selected, including the long-term average. A stream-gaging station at Lees Ferry, Arizona was not installed until 1921. Thus, the virgin flow at Lees Ferry prior to the 1922 Compact is estimated based upon records obtained at other stations, e.g. the stream gage on the Colorado River at Yuma, Arizona for the period 1902-1921.
- (4) For the longest period shown, 1896- 2005, the estimated average annual virgin flow is 14.8 million acre-feet, and the average annual historic flow is 12.0 million acre-feet.
- (5) For the next longest period, 1906-2005, the estimated average annual virgin flow is 14.9 million acre-feet, and the average annual historic flow is 11.8 million acre-feet. Many of the early records for this series of years as well as for the 1896-2005 period are based upon the estimates of flows made at other gaging stations, as mentioned in (3) above. This average is about equal to the 15.0 million acre-feet estimated for the 1906-1967 period which was used as the basis for justification of a water supply for the Central Arizona Project authorized in 1968.
- (6) The estimated average annual virgin flow during the 1914-2005 period is 14.6 million acre-feet. This period is an extension of the 1914-1965 period used in the Upper  
  
Colorado Region Comprehensive Framework studies of 1971. The average annual virgin flow for the 1914-1965 time period is 14.6 million acre-feet.
- (7) The average annual virgin flow for the period 1914-1945 is 15.6 million acre-feet. This was the period of record used by the negotiators of the Upper Colorado River Basin Compact of 1948.
- (8) For the period 1922-2005, which is the period of record since the signing of the Colorado River Compact, the average annual virgin flow is 14.21 million acre-feet, and the average annual historic flow is 10.9 million acre-feet. Records for this series of years are based upon actual measurements of flows at Lees Ferry. The ten-year moving average flow since 1922 is considerably less than the ten-year moving average flow prior to 1922.
- (9) Two completely unrelated ten-year periods of minimum flows have occurred since 1930. During these periods, 1931-1940 and 1954-1963, the average annual virgin flow amounts to only 11.9 million acre-feet.

- (10) For a 12-year period, 1953-1964, the average annual virgin flow amounts to only 11.6 million acre-feet.
- (11) Since Glen Canyon Dam was closed in 1963, the estimated virgin flow for the subsequent 42 years is 14.4 million acre-feet. The estimated historical flow for the same period (1963-2005) is 9.9 million acre-feet.

# Colorado River Flow at Lee Ferry, Arizona



# Lee Ferry Average Annual Virgin Flow For Selected Periods



## **B. LEGAL**

### **1. Water Newsletter**

The legal staff continues to inform the Commissioners, their advisers and other interested parties about developments in the courts, Congress and certain Federal agencies through the *Water Newsletter*. Current information can be found in the newsletter. In addition, the legal staff has prepared legal memoranda on matters needing more detailed treatment.

### **2. Court Case**

Action has been taken in the following case of importance to the Upper Colorado River Basin States:

*Orff v. United States*, 545 U.S. \_\_\_\_, 162 L.Ed.2d 544, 125 S.Ct. \_\_\_\_ (2005).

Petitioners in this case are individual farmers and farming entities in California who purchase water from respondent Westlands Water District (Westlands). Westlands receives its water from the United States Bureau of Reclamation (Reclamation) under a 1963 contract between Westlands and Reclamation. Petitioners contend that Reclamation breached the contract in 1993 when the agency reduced the water supply to Westlands. Although petitioners are not parties to the contract, they claim they are entitled to enforce it as intended third-party beneficiaries; that the United States waived its sovereign immunity from suits for breach of contract in a provision of the Reclamation Reform Act of 1982, § 221, 96 Stat. 1271, 43 U.S.C. § 390uu; and therefore that they may sue the United States in Federal district court for breach of the 1963 contract. The Court holds that § 390uu does not waive the United States' immunity from suits directly against the United States; rather, the statute grants consent to join the United States as a necessary party defendant in an action between other parties to permit a complete adjudication of rights under a reclamation contract.

### **3. Legislation**

In the First Session of the 109th Congress (without regard to the water year), Congress enacted the following statutes that are important to the Upper Colorado River Basin States:

Public Law 109-108, approved November 22, 2005, making appropriations for Science, the Departments of State, Justice and Commerce and related agencies for the fiscal year ending September 30, 2006.

Public Law 109-103, approved November 19, 2005, making appropriations for energy and water development for the fiscal year ending September 30, 2006.

Public Law 109-97, approved November 10, 2005, making appropriations for Agriculture, Rural Development, Food and Drug Administration and Related Agencies for the fiscal year ending September 30, 2006.

Public Law 109-93, approved October 26, 2005, to adjust the boundary of Rocky Mountain National Park in the State of Colorado.

Public Law 109-54, approved August 2, 2005, making appropriations for the Department of the Interior, environment and related agencies for the fiscal year ending September 30, 2006.

## **COLORADO RIVER STORAGE PROJECT AND PARTICIPATING PROJECTS**

### **A. AUTHORIZED STORAGE UNITS**

*(Information relative to storage units and participating projects has been provided by the United States Department of the Interior, Bureau of Reclamation.)*

The Colorado River Storage Project (CRSP) was authorized for construction by the United States Congress in the CRSP Act of April 11, 1956 (70 Stat. 105). Four storage units were authorized by this Act: Glen Canyon Dam and Reservoir (Lake Powell) on the Colorado River in Utah and Arizona; Navajo Dam and Reservoir on the San Juan River in New Mexico and Colorado; Flaming Gorge Dam and Reservoir on the Green River in Utah and Wyoming; and the Wayne N. Aspinall Storage Unit (Aspinall Unit), formerly named the Curecanti Storage Unit and rededicated in July 1981, on the Gunnison River in Colorado. The Aspinall Unit consists of three dams and reservoirs: Blue Mesa, Morrow Point, and Crystal. Combined, the four storage units provide about 33,583,000 acre-feet of water storage capacity. The CRSP Act, as amended, also authorized the construction of 11 participating projects. Ten additional participating projects have been authorized by subsequent congressional legislation.

The storage units and participating projects are described in the 57<sup>th</sup> and earlier annual reports of the Upper Colorado River Commission. Progress in construction, planning, operation, and investigation of the storage units and participating projects accomplished during the past water year is briefly outlined as follows:

#### **1. Glen Canyon Storage Unit**

Glen Canyon Dam and Reservoir (Lake Powell) comprises the key storage unit of the CRSP and is the largest of the initial four, providing about 80 percent of the storage and generating capacity. Construction of the dam was completed in 1963. In addition to water storage for flood control and consumptive uses, Glen Canyon Dam was built as a hydroelectric peaking power facility, permitting it to move from low electrical output during low power demand to high electrical output in peak demand periods. To that extent, flow releases from the dam were adjusted daily and at times hourly, to respond to variances in electrical demand.

At optimum operations, the generators at Glen Canyon Dam are capable of producing 1,304 megawatts of power. Water releases from the dam occur at 200-230 feet below the surface of Lake Powell at full pool, which results in clear cold water with year-round temperatures of 45 degrees F to 50 degrees F. During protracted droughts, such as occurred from 1999-2004, Lake Powell elevations decline to levels where warmer water is drawn through the penstocks and released downstream. The recreation, irrigation, and hydropower benefits introduced to the Southwest by Glen Canyon Dam are extensive and continue to expand.

Since the damming of the river in 1963, there has been only one flow release that approached average pre-dam spring floods. In 1983, a combination of unanticipated hydrologic events in the Upper Colorado River Basin, combined with a lack of available storage space in Lake Powell, resulted in emergency releases from Glen Canyon Dam that reached 93,000 cubic feet per second (cfs). Except for the flood events of the mid-1980s, historic daily releases prior to the preparation of the final Glen

Canyon Dam environmental impact statement (EIS) generally ranged between 1,000 cfs and 25,000 cfs, with flows averaging between 5,000 cfs and 20,000 cfs.

As a result of construction and operation of Glen Canyon Dam, the Colorado River ecosystem below the dam has changed significantly from its pre-dam natural character. In addition, the dam's highly variable flow releases from 1964 to 1991 caused concern over resource degradation resulting from dam operations. The Secretary of the Interior (Secretary) adopted interim operations criteria in October 1991 that narrowed the range of daily powerplant fluctuations. Since the signing of the operating criteria in February 1997, these releases do not now exceed 25,000 cfs, other than during occasional experimental flows, and have most often averaged between 10,000 cfs and 20,000 cfs.

Responding to concerns that changes to the Colorado River ecosystem were resulting from dam operations, Reclamation launched the Glen Canyon Environmental Studies program in 1982. The research program's first phase (1982-1988) focused on developing baseline resource assessments of physical and biotic resources. The second program phase (1989-1996) expanded research programs in native and non-native fishes, hydrology and aquatic habitats, terrestrial flora and fauna, cultural and ethnic resources, and social and economic impacts.

By the late 1980s, sufficient knowledge had been developed to raise concerns that downstream impacts were occurring and that additional information needed to be developed to quantify the effects and to develop management actions that could avoid and/or mitigate the impacts. This collective information, and other factors, led to a July 1989 decision by the Secretary to direct Reclamation to prepare an EIS on the operation of Glen Canyon Dam. The intent was to evaluate alternative operation strategies to lessen the impacts of operations on downstream resources.

In October 1992, the President signed into law the Reclamation Projects Authorization and Adjustments Act, Public Law (P.L.) 102-575. Responding to continued concerns over potential impacts of Glen Canyon Dam operations on downstream resources, Congress included the Grand Canyon Protection Act (GCPA) as Title 18 of the Reclamation Projects Act. Section 1802(a) of the GCPA requires the Secretary to 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 protect, 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.

The GCPA directs the Secretary to implement this section in a manner fully consistent with all existing laws that govern allocation, appropriation, development and exportation of the waters of the Colorado River Basin.

Section 1804 of the GCPA required preparation of an EIS, adoption of operating criteria and plans, reports to Congress, and allocation of costs. The Operation of Glen Canyon Dam Final Environmental Impact Statement was filed with the Environmental Protection Agency in March 1995 and a Record of Decision (ROD) was signed in October 1996. The ROD changed two flow parameters from those shown in the preferred alternative of the EIS. They were (1) increasing the normal maximum flow from 20,000 cfs to 25,000 cfs and (2) increasing the upramp rate from 2,500 cfs/hour to 4,000 cfs/hour. The ROD also changed the triggering mechanisms for conducting beach/habitat-building flows (experimental flows above powerplant capacity). Instead of conducting them in years when Lake Powell storage is low on January 1, they were to be conducted in years when Lake Powell storage is high and reservoir releases in excess of powerplant capacity are required for dam safety purposes.

Following the signing of the ROD, the Secretary adopted a set of operating criteria and a 1997 plan of operation. This terminated the 1991 interim flow criteria.

The signing of the ROD began a new chapter in the history of Glen Canyon Dam. In addition to meeting traditional water and power needs, the dam is now being operated in a more environmentally sensitive manner. The EIS process demonstrated the value of a cooperative, integrative approach to dealing with complex environmental issues. The inclusion of all stakeholders resulted in a process that will serve to guide future operations of Glen Canyon Dam and become a template for other river systems.

#### **a. Adaptive Management**

Section 1805 of the GCPA directs the Secretary to establish and implement long-term monitoring programs on the natural, recreational and cultural resources of Grand Canyon National Park and Glen Canyon National Recreation Area. The Adaptive Management Program (AMP) is a key element of the preferred alternative outlined in the final EIS and implemented by the ROD. The program provides for operation of Glen Canyon Dam for environmental purposes in Glen and Grand Canyons in addition to traditional water and power generation.

The AMP provides a process for incorporating science into recommendations to the Secretary from a diverse group of stakeholders in the evaluation and management of future dam operations. The AMP calls for the continued interaction of managers and scientists to both monitor the effects of current dam operations on the Colorado River ecosystem and to conduct research on alternative dam operating criteria that may be necessary to ensure protection of resources and improve natural processes. The AMP identifies the following entities that contribute to the adaptive management process: (1) Adaptive Management Work Group (AMWG), (2) Technical Work Group (TWG), (3) Grand Canyon Monitoring and Research Center (GCMRC) and (4) independent review panels.

The AMWG is a Federal Advisory Committee chartered by the Secretary and consists of a group of stakeholders including federal and state resource managers, Native American tribes, power marketers, environmental groups, recreationists, and representatives of other interest groups. The AMWG was established to develop, evaluate, and recommend alternative operations strategies for Glen Canyon Dam and make recommendations to the Secretary. The AMWG does not displace federal agency, tribal or state agency legal authority and responsibility to manage resources in the best interests of both the environment and society.

In addition to the AMWG, the TWG and GCMRC were created to play vital roles as part of the adaptive management process. The TWG is composed of technical representatives appointed by the AMWG. The TWG provides the AMWG detailed guidance on issues and objectives, develops criteria and standards for research and monitoring programs, provides information for annual resource reports and translates the AMWG's management objectives into research needs for the GCMRC. The GCMRC (now under the auspices of the United States Geological Survey) conducts the research and monitoring necessary to evaluate operations, and the independent review panels provide outside review and credibility. The AMWG currently meets two to three times a year, and the TWG currently meets about six times a year.

#### **b. Glen Canyon Dam Temperature Modification Project**

Prior to construction of Glen Canyon Dam, the Colorado River would warm seasonally from near freezing to about 85°F. Since construction of the dam, releases from the dam have been cold throughout the year (about 45-55°F). Cold temperatures can cause thermal shock to young endangered fish and increase mortality as they descend from warm tributaries into the mainstem of the Colorado River. A biological opinion issued in December 1994 by the U.S. Fish and Wildlife

Service found that the operation of Glen Canyon Dam jeopardized the continued existence of two endangered fish and adversely modified their critical habitats. The reasonable and prudent alternative provided that Reclamation implement a selective withdrawal program and determine feasibility.

Based on Reclamation's September 1997 feasibility cost estimates, a selective withdrawal structure could cost up to \$140 million, depending upon the type of design. The least expensive modification evaluated would take advantage of the existing trashrack structure and bulkhead gate rails, reducing the construction costs to \$20 to \$40 million. More expensive options could be used in a greater number of years and a wider range of reservoir elevations.

In January 1999, Reclamation released a draft EA for public review. Peer review of the document suggested that a testing and monitoring plan be prepared and included in the draft EA. This and other concerns led Reclamation to withdraw the plan and continue studies on the feasibility of selective withdrawal. Reclamation has continued evaluating the feasibility of a temperature control device by convening experts in workshops and commissioning a risk assessment by Science Advisors to the AMP. In August 2003, after hearing results of the risk assessment, the AMWG recommended that Reclamation should proceed in completing the environmental compliance for the temperature control device. Reclamation issued a scoping letter on a proposal to modify two of the eight penstocks in the dam with temperature control devices and to test the devices through adaptive management before making a decision on whether additional modification would be warranted. The estimated cost of modifying two penstocks with an external frame selective withdrawal that would operate from full pool to the penstocks was \$81 million, an amount considered prohibitive, so Reclamation has commissioned a study to evaluate designs of lower cost and a more restricted range of operations. If significant adverse impacts are found in that evaluation, the no-action alternative, which is to continue to release cold water through the existing power penstock intake, will be considered.

### **c. Recreational Use**

The extensive recreational use of Glen Canyon National Recreation Area, which surrounds Lake Powell, is demonstrated by the visitation of 1,928,274 people during calendar year 2005, an increase of 66,502 over 2004 numbers. Visitation numbers for the Carl Hayden Visitor Center are no longer being tracked separately but are included in the numbers above. The National Park Service has concession-operated facilities at Wahweap, Dangling Rope, Halls Crossing, Hite, and Bullfrog Basin on the reservoir and at Lees Ferry located 16 miles below the dam on the Colorado River.

The Park Service increased its weekly and annual vehicle entrance fees beginning January 1, 2006. Weekly fees were increased \$5 from \$15 to \$20 per vehicle and the annual fees went from \$20 to \$30. The Park is able to keep 80 percent of the fees generated to fund improvements to the park. A partial list of the many projects being funded with fees are an upgrade at the Wahweap picnic area, rehabilitation of the Spencer Trail and extending the Antelope Point public launch ramp (in cooperation with BIA and the Navajo Nation) for which an environmental assessment was released in February 2005.

The Navajo Nation, in partnership with the National Park Service and the Bureau of Indian Affairs, opened the Antelope Point Marina public launch ramp in July 1999, but because of the drought for the past few years, the ramp has been unusable due to low water. Antelope Point Marina was opened for business in June 2004 and is currently being leased and operated by Antelope Point Holdings, LLC under a lease agreement with the Navajo Nation and a concession contract with the National Park Service. Phase II is expected to be completed in July 2006 and will include private, resort-style bathrooms and laundry facilities at the marina, a floating marina village with a full-service restaurant, a marina store, public restrooms and tour boat operations. In addition, a public marina

with 200 slips will be built including 120 wet slips reserved for the houseboat and power boat rental fleet and the remaining 80 wet slips reserved for courtesy and commercial purposes. Phase III, scheduled to be completed in February 2007, will include a 150-space recreational vehicle area with water and power, a 50-unit campground area, public restrooms that will have shower and laundry facilities and a convenience store. Phase IV, the final phase, is scheduled to be completed in December 2008. This last stage will feature a 225-unit resort as well as a Navajo cultural center and studios to showcase Navajo artists.

In August 2005, the Park Service issued a prospectus for a concession contract to provide guided interpretive river raft trips within the NRA. The subsequent concession contract will require the awardee to provide guided interpretive river raft trips on a 15 mile flat water section of the Colorado River from the Glen Canyon Dam ending at Lees Ferry. Proposals from prospective concessionaires were due October 27, 2005.

Visitation at Rainbow Bridge for calendar year 2005 was reported by the National Park Service to be 81,206, an increase of 7,531 over 2004 numbers. The bridge is considered a sacred site by Native Americans and many go to the site to pray and hold religious ceremonies. The Park Service has requested that other visitors voluntarily respect this and keep from approaching too closely or walking under the bridge. Personal watercraft use in the Rainbow Bridge area has been banned since 2000.

The Carl Hayden Visitor Center, adjacent to Glen Canyon Dam and powerplant in Page, Arizona is owned and maintained by Reclamation and operated by the National Park Service. The Glen Canyon Natural History Association conducts public tours of the dam and operates the book sales area in the visitor center. Public guided tours of the dam had been discontinued because of the national threat level advisory and the need to implement stronger security measures at the dam. However, tours are now on-going as long as the threat advisory stays at yellow or below. No self-guided tours of the dam are allowed.

The visitor center was remodeled during late 2003 and early 2004 with new, fully-refurbished public restrooms, an employees-only restroom and a new glass facade which extends the usable interior on the south side of the building. In 2005, the National Park Service's office space and restrooms inside the visitor center were remodeled. In out-years, new interpretive exhibits will be installed that will provide access and effective communications for all visitors, including those who have communication impairments.

## **2. Flaming Gorge Storage Unit**

Flaming Gorge Dam and Powerplant were completed in 1963. Upgrading of the units in 1992 increased the plant nameplate capacity from 108 megawatts to about 151 megawatts.

In water year 2005, Flaming Gorge Dam was operated in accordance with the Biological Opinion on the Operation of Flaming Gorge Dam, issued in November 1992. The biological opinion calls for high spring releases to occur each year, timed with the peak of the Yampa River, so as to mimic historic Green River flows. A new biological opinion was received from the U.S. Fish and Wildlife Service in 2005 which stated that if the proposed action were implemented, the four endangered fish species in the Colorado River system may be adversely affected but would not be jeopardized.

In September 2000, a final report entitled *Flow and Temperature Recommendations for Endangered Fishes in the Green River Downstream of Flaming Gorge Dam* was published by the Upper Colorado River Endangered Fish Recovery Program (Recovery Program). The report, prepared by a multi-disciplinary team, synthesizes research conducted on endangered fish in the Green River under the

Recovery Program and presents flow recommendations for three reaches of the Green River. Reclamation began the National Environmental Policy Act (NEPA) process on the implementation of an operation at Flaming Gorge Dam that meets these flow recommendations. A Notice of Intent to prepare an EIS was published in the *Federal Register* on June 6, 2000. The draft EIS was published in September 2004, the final EIS was published in November 2005, and a ROD is scheduled for completion in the first quarter of 2006.

#### **a. Recreational Use**

A new interagency agreement between the Ashley National Forest and the Bureau of Reclamation for management of the primary jurisdiction area (visitor center, dam, Reclamation warehouses and some water treatment facilities) was signed in 2004 and will be in effect for 10 years with a potential to renew after that time.

Boat ramps and marinas are located at several sites around the lake, and there are 26 designated campgrounds in the area, four of which are accessible only by boat. Fishing is an important recreational activity both on the reservoir and in the Green River below the dam, as is rafting. Other activities in the area include camping, picnicking, scenic biking, hiking, horseback riding, motor coach tours, snowmobiling, snowshoeing and cross-country skiing. Public tours of the dam are conducted by the Intermountain Natural History Association, a non-profit partner at the Visitor Center. Tours of the inside of the dam are conducted when the terrorist alert level is low. However, when the terrorist alert level is high, tours of the inside of the dam are suspended and tourists are taken to a dam overlook area where guides present information about construction and operation of the dam.

Fee changes in the NRA were implemented in September 2005 per the recently passed Federal Lands Recreation Enhancement Act (REA). Current fees are \$2 per day, \$5 for 16 days, or \$20 for the annual pass. There are no plans to increase fees in 2006. The fee is only to be implemented in areas or corridors where improvements have been made and services and facilities are available to the public. This includes, but is not limited to, sites where there are restrooms, paved boat ramps and courtesy docks, fish cleaning stations, paved parking areas, designated picnic sites and developed beaches. Designated High Impact Recreation Areas, where fees are required, will include a ¼ mile corridor surrounding the access road from the highway to the lake or river destination point. Fees apply at boat ramps at Antelope Flat, Anvil Draw, Buckboard Crossing, Cedar Springs, Firehole Canyon, the Green River, Holmes Crossing, Lucerne Valley, Mustang Ridge and Sheep Creek. Under the law, all campgrounds fees except those managed by concessions are to be returned to the Forest Service for facilities and visitor services improvement.

### **3. Navajo Storage Unit**

Navajo Dam was completed in 1963. The water stored behind Navajo Dam pursuant to the Colorado River Storage Project Act provides a water supply for the Navajo Indian Irrigation Project (NIIP) near Farmington, New Mexico, and the Hammond participating project. Part of the water is also used for municipal and industrial (M&I) purposes in northwestern New Mexico.

Between 2002 and 2004, Reclamation approved subcontracts between the Jicarilla Apache Nation and San Juan River water users to address severe drought conditions. A shortage sharing agreement was negotiated each year to protect water storage, water uses and endangered species. Subcontracts were issued pursuant to the December 8, 1992, contract between the Jicarilla Apache Nation and the United States and the Jicarilla Apache Nation Water Rights Settlement Act of January 3, 1992 (P.L. 102-441).



Navajo Dam, New Mexico - Courtesy of Bureau of Reclamation

Reclamation is completing an FEIS on the operations of Navajo Dam and Reservoir (Navajo Unit). The cooperating agencies assisting Reclamation in the EIS process include the: Jicarilla Apache Nation, Southern Ute Indian Tribe, Navajo Nation, Ute Mountain Ute Tribe, Southwestern Water Conservation District, New Mexico Interstate Stream Commission, San Juan Water Commission, City of Farmington, Albuquerque Army Corps of Engineers, U.S. Fish and Wildlife Service, Bureau of Indian Affairs, Bureau of Land Management, Colorado Water Conservation Board and National Park Service.

The draft EIS was released for public review and comment in September 2002. The public comment period concluded on December 4, 2002, and over 350 comments were received. The draft EIS evaluated the potential impacts of operating Navajo Reservoir to assist in meeting the flow recommendations provided by the San Juan River Basin Recovery Implementation Program. The purpose of the proposed federal action, in concert with other recovery actions, is to provide sufficient releases of water at times, quantities and durations necessary to assist in conserving two endangered fish species and their designated critical habitat in the San Juan River downstream from Farmington, New Mexico. Reclamation would maintain the authorized purposes of the Navajo Unit which include enabling future water development to proceed in the San Juan River Basin in compliance with applicable laws, compacts, court decrees and American Indian trust responsibilities. At this time, Reclamation and Department of the Interior staff are working to obtain an acceptable final biological opinion (BO). After a final BO is received, it will take approximately three months before the final EIS can be released, with the potential for a Record of Decision to be issued a minimum of 30 days thereafter.

#### **a. Recreational Use**

In September 2005, Reclamation released a draft Environmental Assessment and Resource Management Plan (RMP) for public comment for lands within the Navajo Reservoir area. Comments were due by December 9, 2005. The RMP is needed because of increasing and conflicting demands on the area's resources and the complexity of resource management issues at the reservoir. The finished RMP will "guide long-term management of Reclamation lands and resources associated with the Navajo Unit, in a manner which protects Reclamation project purposes, meets the needs of the nation and the public, protects and/or improves area resources, complies with applicable laws and regulations, and coordinates with other entities' management direction."

Under separate agreements with Reclamation, the Colorado Division of Parks and Outdoor Recreation (State Parks) is responsible for public recreation at Navajo Reservoir within the state of Colorado, and New Mexico State Parks manages public recreation at the reservoir within the state of New Mexico. State Parks now operates and maintains the San Juan Marina on the Colorado side of the lake. Through the use of state monies, the marina and its associated facilities have been greatly improved.

Because of high water, the replacement of the old marina concession and the closure of Miller Mesa in 2004 (New Mexico side) to public use, visitation at Arboles (Colorado side) increased to the point that shoreline camping had to be closed to visitors in June 2005 in order to protect resources and lessen visitor conflict. Colorado State Parks restricted camping to the 117 campsites near the visitor center, 15 sites at Windsurf Beach and four designated campsites at Arboles Point. A maximum of one camping unit with two vehicles and six people is allowed at each site. State Parks strongly urged potential visitors to make reservations before coming to the park to ensure campsite availability.

Action planning for accessibility improvements at Arboles has been completed and is waiting funding for completion. While most of the facilities at Arboles are accessible to visitors with disabilities, some

additional work needs to be done before the park can be considered to be completely compliant with standards for accessibility, including interpretive and boating and fishing programs at the park.

On the New Mexico side, New Mexico State Parks continues its management and improvement of the recreation areas with some cost-share assistance from Reclamation. Three separate recreation areas comprise Navajo Lake State Park in New Mexico. Pine River, the most developed area along the lake, includes a visitor center with interpretive exhibits. Sims Mesa is across the lake and also has a small visitor center with interpretive exhibits. The San Juan River area below the dam is world renowned for excellent trout fishing and includes some wheelchair-accessible fishing facilities. Navajo Lake is New Mexico's second largest lake and offers the full gamut of water sports and services. It contains both cold- and warm-water fish species.

All three recreation areas on the New Mexico side of Navajo Reservoir have been evaluated for compliance with accessibility law and standards. Management determinations and action planning for needed improvements to provide better access and experience for visitors with disabilities are currently being accomplished.

Every year for the past nine years, Reclamation's Farmington Construction Office has sponsored a successful C.A.S.T. (Catch A Special Thrill) for Kids fishing event. The event is accomplished with the assistance of local BASS organizations, private entities and volunteers, and the C.A.S.T. for Kids Foundation. The C.A.S.T. for Kids experience provides a one-day fishing and boating opportunity for children who have disabilities or who are otherwise disadvantaged. It is a family-oriented activity, and the communities near the New Mexico side of Navajo Reservoir participate. The next event is scheduled for May 6, 2006.

#### **4. Wayne N. Aspinall Storage Unit**

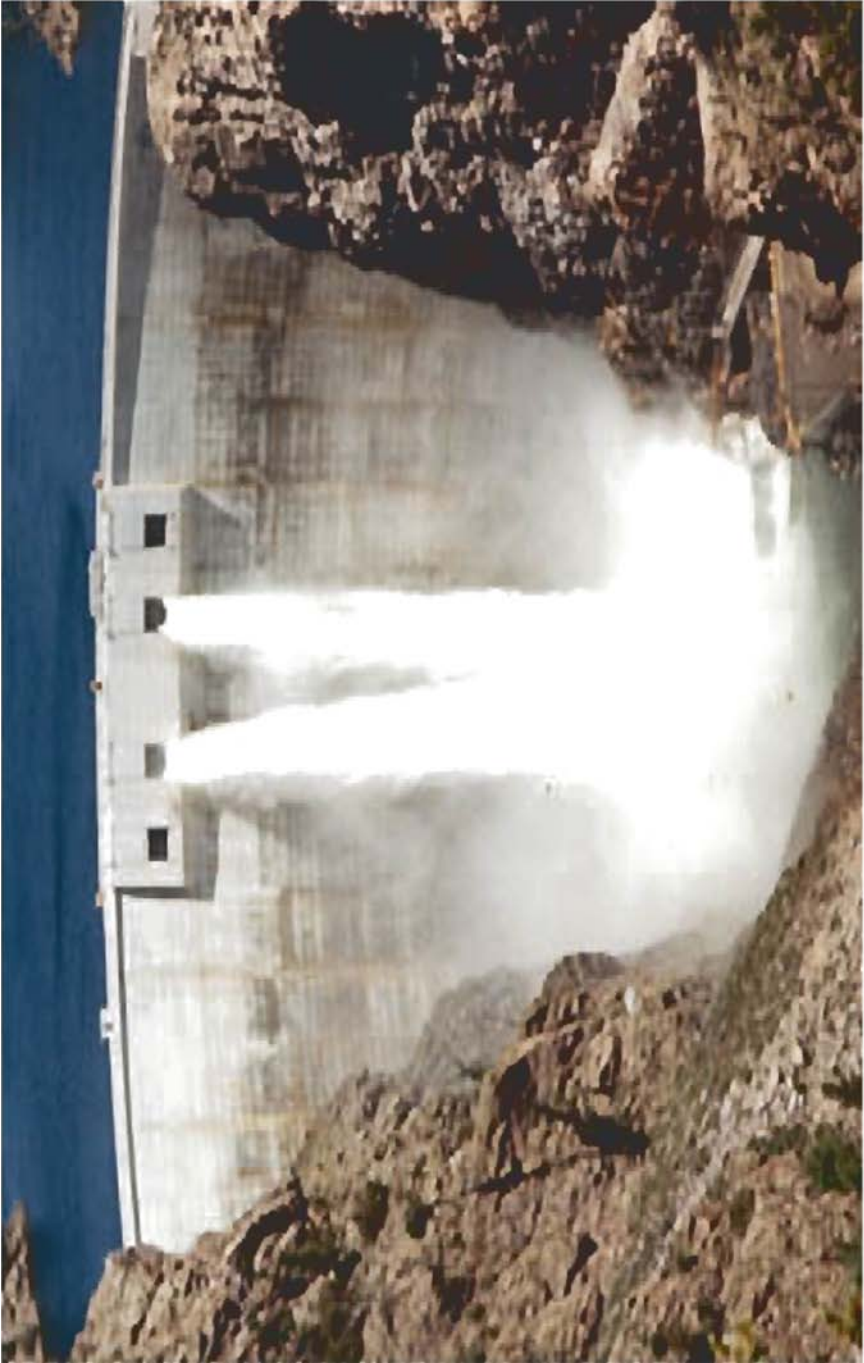
The Aspinall Unit includes Blue Mesa, Morrow Point, and Crystal dams, reservoirs and powerplants. The Aspinall Unit is located in Gunnison and Montrose Counties, Colorado on the Gunnison River upstream from the Black Canyon of the Gunnison National Park.

Similar to Glen Canyon, Flaming Gorge, and Navajo, the Aspinall Unit is being evaluated to determine how operations can be modified to assist downstream endangered fish. Flow recommendations for endangered fish in the Gunnison River were completed in 2003. Reclamation has initiated preparation of an EIS on Aspinall operations to provide an operational pattern to assist in the conservation of endangered fish while continuing to meet Aspinall Unit purposes.

Reclamation is also working with the Department of the Interior to help resolve federal reserved water right issues within the downstream Black Canyon of the Gunnison National Park. Water rights reserved for the Black Canyon in 1933 were upheld and ordered for quantification by the Colorado Supreme Court in 1982. The National Park Service completed data collection to quantify the right and filed for quantification in 2001. There were many objectors to the right, and a stay of proceedings was granted to facilitate negotiations. In April 2003, the Department of the Interior and the State of Colorado signed an agreement to resolve the reserved right; the agreement calls for a 1933 reserved right of 300 cfs. In addition, Colorado will develop a 2003 instream flow right to protect spring flows. Work is ongoing to implement the agreement; however, the agreement is being challenged in court.

##### **a. Recreational Use**

Recreation use for the Aspinall Unit is managed by the National Park Service as the Curecanti National Recreation Area (NRA). Reported visitation in 2005 for the NRA was reported to be 882,768, which is a decrease of 150,000+ from the 2004 numbers. The reason for this was likely due to an outbreak of bubonic plague in a couple of prairie dog populations resulting in the closure



Morrow Point Dam, Aspinall Unit, Colorado -Bureau of Reclamation Photo

of two campgrounds, particularly the largest and most popular (Elk Creek Campground), which was closed over the Memorial Day weekend. Public notice of the outbreaks more than likely kept some visitors away all season.

The recreation area offers a variety of drive-in, boat-in and hike-in campgrounds. Facilities range from the highly developed Elk Creek Campground to remote boat-in campsites. Activities include fishing, hiking, wildlife viewing, camping, picnicking, photography and boating.

In 1965, the National Park Service entered into an agreement with the Bureau of Reclamation to construct and manage recreational facilities and to manage natural and cultural resources and recreation on and adjacent to the reservoirs. The area then became known as the Curecanti National Recreation Area. The NRA is currently identified by an administrative boundary that has not been established by legislation. Curecanti offers 10 campgrounds that include a variety of drive-in, boat-in and hike-in experiences. Facilities range from Elk Creek Campground with showers, marina, restaurant, amphitheater and visitor center, to remote boat-in campsites on Blue Mesa Reservoir. Half of the developed campgrounds have been added to the national reservation system website, [www.ReserveUSA.com](http://www.ReserveUSA.com). The most popular activities at Curecanti include hiking, wildlife viewing, camping, picnicking, photography, boating, salmon and trout fishing, hunting, windsurfing, sailing, waterskiing, cross country skiing and ice-fishing.

In 1999, Congress directed the National Park Service to conduct a Resource Protection Study to assess area resources within and surrounding the NRA and to identify and recommend a variety of practicable alternatives and tools to protect those resources. Congress would like this information prior to writing legislation that would formally establish the NRA. A report on the study's findings and recommendations will be sent to Congress in the winter of 2005. Congress will make the final determination as to what action, if any, to take. The Curecanti National Recreation Area is under the national fee demonstration program, and several projects have been undertaken with the funds raised.

The National Park Service is now offering a Morrow Point Boat Tour that takes 1.5 hours through the upper Black Canyon within the boundaries of the NRA. Reservations are required and participants enjoy the leisure of a pontoon boat ride along with a natural history interpretive program offered by a park ranger. Cost for adults is \$15 and children under 13 cost \$7.50. The tour begins at Pine Creek boat dock, which is a 1.5 mile round trip hike along the Pine Creek Trail and includes a 232-step stairway. This tour is not accessible to persons with mobility impairments.

## **5. Storage Units Fishery Information**

The Flaming Gorge, Wayne N. Aspinall, Glen Canyon and Navajo storage units continue to provide excellent warm- and cold-water fishing both in the reservoirs and in the tailwater streams below the dams. Visitors at these reservoirs totaled between about 4.8 million in 2005. Lake Powell accounted for 40 percent of the total recreation visits, Flaming Gorge accounted for 31 percent, Curecanti accounted for 18 percent and Navajo accounted for 11 percent.

Lake Powell is almost exclusively a warm-water fishery with bluegill, striped bass, crappie, walleye, channel catfish, and smallmouth and largemouth bass as the harvested species. (In June 2005, an angler caught a 42-inch, 38.5-pound striped bass). Angling use on reservoirs appears to be constant; while demand and use for the tailwaters is increasing dramatically. (Reclamation does not gather specific data on angler usage at its reservoirs).

The cool, clear depths of Flaming Gorge are ideal for trout. These famous angling waters have produced fish of state and world record size, including: lake trout (Mackinaw) over 50 pounds, German brown trout over 30 pounds and rainbow trout over 25 pounds. Flaming Gorge also supports numerous cutthroat trout, Kokanee salmon, small mouth bass and channel catfish. While the lake

claims the big ones, the Green River below the dam boasts one of the nation's finest blue ribbon trout streams. Fish populations in the river have been counted as high as 22,000 per river mile. In September 2005, the Utah Division of Wildlife Resources celebrated Kokanee Salmon Day at Sheep Creek, a tributary that empties into Flaming Gorge Reservoir, in recognition of the spawning Kokanee in the area. Every fall, Kokanee leave Flaming Gorge Reservoir and migrate into the tributaries where they spawn.

In November 2005, fish consumption advisory was issued for the Green River channel catfish in the Desolation Canyon area due to elevated mercury levels found in the fish there. Additional sampling of the Green River above and below Desolation Canyon will be conducted in 2006 to determine if the advisory should be expanded.

The Aspinall reservoirs are exclusively cold-water fisheries, with five species of sports fish available: rainbow, mackinaw, brown and brook trout, as well as kokanee salmon. The Aspinall reservoirs boast the largest kokanee salmon fishery in the United States.

Navajo Reservoir provides both cold-and warm-water fisheries, including catfish, crappie, and smallmouth bass in the shallows and near the lake surface. Kokanee salmon, northern pike and many varieties of trout are found in the deeper, colder waters. In September 2005, the New Mexico Game Commission approved a management plan for the San Juan River below Navajo Dam in hopes of ensuring the world-class trout fishing opportunities during drought and changing water flows. The plan includes enhancements to habitat, limits on the numbers of anglers allowed on the river over the course of a year and at any one time and improved angler access.

The four tailwaters (the San Juan River below Navajo Dam, the Green River below Flaming Gorge Dam, the Gunnison River below Crystal Dam and the Colorado River below Glen Canyon Dam) have provided "blue ribbon" trout fishing that many view as some of the best in the western United States. The Green River tailwater receives about one half of the total use, with the Colorado River tailwater, San Juan River tailwater and Gunnison River tailwater providing the remainder.

## **B. TRANSMISSION DIVISION**

The power system includes high voltage transmission lines that interconnect to the Colorado River Storage Project hydro-powerplants and deliver power to major load centers or other delivery points. The system is interconnected with adjacent federal, public and private utility transmission systems. The Transmission Division was transferred to the Department of Energy, Western Area Power Administration, in fiscal year 1978.

Generation at CRSP powerplants amounted to 4.27 billion kilowatt-hours during fiscal year 2005. The major portion, 3.22 billion kilowatt-hours, was produced at Glen Canyon Dam. The balance was produced at Flaming Gorge, Blue Mesa, Morrow Point, Crystal, Fontenelle, McPhee and Towaoc Power plants.

Table 5 lists the gross generation for fiscal years 2004 and 2005 and the percentage of change:

**Table 5**  
**Gross Generation (Kilowatt-Hours)**  
**and Percentage of Change for**  
**Fiscal Years 2004 and 2005**

<b>Powerplant</b>	<b>Fiscal Year 2004</b>	<b>Fiscal Year 2005</b>	<b>Percent Change</b>
Glen Canyon	3,328,793,000	3,217,926,000	-3.3
Flaming Gorge	236,681,000	346,982,000	46.6
Blue Mesa	142,539,000	204,827,000	43.7
Morrow Point	195,118,000	270,599,000	38.7
Crystal	4,705,000	139,123,000	2,856.9
Fontenelle	45,472,000	67,595,000	48.7
McPhee	2,655,481	4,292,835	61.7
Towaoc	16,486,900	17,134,331	3.9
<b>Total</b>	<b>3,972,450,381</b>	<b>4,268,479,166</b>	<b>7.5</b>

### **C. AUTHORIZED PARTICIPATING PROJECTS**

Twenty-one participating projects have been authorized by Congress. Eleven were authorized by the initial authorizing Act of April 11, 1956 (70 Stat. 105), two were authorized by the Act of June 13, 1962 (76 Stat. 96), three were authorized by the Act of September 2, 1964 (78 Stat. 852), and five were authorized by the Act of September 30, 1968 (82 Stat. 886). Ten are in Colorado, three in New Mexico, two in Utah, four in Wyoming, one in both Colorado and Wyoming and one in both Colorado and New Mexico. Participating projects develop, or would develop, water in the upper Colorado River system for irrigation, M&I uses and other purposes and participate in the use of revenues from the Upper Colorado River Basin Fund to help repay the costs of irrigation features that are beyond the ability of the water users to repay.

Table 6 shows completed participating projects:

**Table 6**  
**Completed Participating Projects**

<b>Project</b>	<b>State</b>	<b>Dam</b>	<b>Year Completed</b>
Fruitgrowers	Colorado	Fruitgrowers	1939
Uncompahgre	Colorado	Taylor Park	1937
Mancos	Colorado	Jackson Gulch	1950
Paonia	Colorado	Paonia	1962
Smith Fork	Colorado	Crawford	1962
Florida	Colorado	Lemon	1963
Navajo	Colorado	Navajo	1963
Aspinall Unit	Colorado	Blue Mesa	1966
Silt	Colorado	Rifle Gap	1966
Aspinall Unit	Colorado	Morrow Point	1968
Bostwick Park	Colorado	Silver Jack	1971
Aspinall Unit	Colorado	Crystal	1976
Dallas Creek	Colorado	Ridgway	1991
Dolores Project	Colorado	McPhee	1998
Hammond	New Mexico	---	1962
San Juan-Chama	New Mexico	Heron	1971
Vernal Unit	Utah	Steinaker	1961
Emery County	Utah	Joes Valley	1966
Lyman	Utah	Stateline	1979
Eden	Wyoming	Big Sandy	1952
Eden	Wyoming	Eden	1959
Seedskadee	Wyoming	Fontenelle	1968
Lyman	Wyoming	Meeks Cabin	1971

The present status of construction, investigation and recreational facilities for the participating projects is as follows:

## **1. Colorado**

### **a. Fryingpan-Arkansas Project**

Although the Fryingpan-Arkansas Project is not a participating project of the CRSP because it does not participate in the Upper Colorado River Basin Fund, it is sometimes referred to as a limited participating project because it does utilize water diverted from the upper Colorado River system to the eastern slope of Colorado.

The Eastern Colorado Area Office, located in Loveland, Colorado, directs the operation and maintenance activities of the Fryingpan-Arkansas Project. A field office in Pueblo, Colorado coordinates with the Southeastern Colorado Water Conservancy District and the State Division Engineer.

NEPA compliance on the Ruedi Round II Water Marketing Program was completed on January 16, 1990 with the signing of a ROD on the proposed action. The proposed action made 46,500 acre-feet of water available for marketing to western slope contractors. In 1999, the U.S. Fish and Wildlife Service issued a Final Programmatic Biological Opinion for the Bureau of Reclamation's Operations and Depletions, Other Depletions, and Funding and Implementation of the Recovery Program Actions in the Upper Colorado River above the Confluence with the Gunnison River, which was accepted by Reclamation in January 2000. In 2003, Reclamation, the U.S. Fish and Wildlife Service and the Colorado Water Conservation Board executed a long-term agreement (through the year 2012) described in the Final Programmatic Biological Opinion to make 10,825 acre-feet /year of water available to enhance flows in the 15-Mile Reach. This water is in addition to water made available as a result of earlier Endangered Species Act consultation on the Ruedi Round II Water Marketing Program (5,000 acre-feet/year withheld from water sales and 5,000 acre-feet made available in 4 out of 5 years).

Contents of reservoirs within the Fryingpan-Arkansas Project as of September 30, 2005 were as follows: Ruedi Reservoir, 83,851 acre-feet; Turquoise Lake, 117,272 acre-feet; combined Mt. Elbert Forebay and Twin Lakes Reservoir, 114,433 acre-feet; and Pueblo Reservoir, 91,008 acre-feet. During water year 2004 (October 1, 2004 through September 30, 2005), transmountain diversions from the Colorado River Basin in Colorado by the Fryingpan-Arkansas Project via the Charles H. Boustead Tunnel totaled 54,686 acre-feet.

### **b. Dolores Project**

Dolores Project construction began in 1976. By fiscal year 1995, all primary project facilities were completed and in operation. All remaining work has been completed with the exception of final archeology reports which are scheduled to be completed by February 2006. In 1996, Reclamation signed petitions allocating the last approximately 1,800 acre-feet of full-service irrigation water to full-service users. Reclamation substantially completed construction of the Dolores Project in fiscal year 1998. The final cost allocation for the project was completed in October 2000 and approved by the Upper Colorado Regional Director by memorandum dated January 25, 2001.

Reclamation negotiated agreements with the three primary contractual beneficiaries: the Dolores Water Conservancy District (District), Montezuma Valley Irrigation Company and Ute Mountain Ute Indian Tribe. These cooperative agreements and grants provided for the benefitting entities to complete the work rather than using Reclamation's traditional construction methods. There are no

major remaining Reclamation items to be completed. Reclamation has deposited \$371,000 with the National Fish and Wildlife Foundation to be used for cost sharing of the acquisition of up to 3,300 acre-feet of water for fish and wildlife enhancement downstream from McPhee Dam. To date, no water has been acquired for the downstream fishery.

The District's agreements for completing its work items and providing 3,900 acre-feet of water for downstream fish and wildlife purposes were completed in 1998. Full payment was made to the Montezuma Valley Irrigation Company under a grant agreement with fiscal year 1996 funds. The Ute Mountain Ute Tribe's agreement allowing Reclamation to lease 3,300 acre-feet of unused tribal irrigation water has been completed. The grant agreement allowing the tribe to complete their work items was completed September 30, 2004. Payment in full was made in fiscal year 1996 for leasing 3,300 acre-feet of water for downstream fish and wildlife purposes, and full payment under the grant allowing completion of work items has been made.

In order to mitigate construction of salinity control modifications to the Upper Hermana, Lone Pine and Rocky Ford Laterals (parts of the Dolores Project), 55 acres of new wetlands were developed at the Lone Dome Wetlands Area below McPhee Dam. In order to complete the remaining 20 acres of mitigation, Reclamation has developed Simon Draw wetlands near the Totten Reservoir area. A long-term management agreement between Reclamation and the Colorado Division of Wildlife for operation and maintenance of the Lone Dome Wetlands Area is in place, and a similar agreement with the Montezuma Valley Irrigation Company is in negotiations.

Recreation at McPhee Reservoir is the responsibility of the San Juan National Forest, Dolores Ranger District, through a contract with Reclamation. The Lone Dome Recreation Area is located below McPhee Dam and includes 12 miles of public access to the Dolores River. This area is comprised of lands administered by the U.S. Forest Service, Bureau of Land Management and Colorado Division of Wildlife. The U.S. Forest Service is currently studying ways to improve recreation at the reservoir through the formation of the McPhee Recreation Plan Committee (MRPC). The MRPC is a grassroots effort consisting of representatives from various local governmental and non-profit organizations. The two camping areas (family and group) can be reserved on the [www.ReserveUSA.com](http://www.ReserveUSA.com) website. The campgrounds provide many services including a boat ramp, a fish cleaning station and showers. A marina fire at McPhee destroyed the facility in 2002. A decision to replace the facility was made by the Forest Service in January 2005, with completion scheduled for May 2006.

### **c. Fruitland Mesa Project**

The Fruitland Mesa Project was found to be infeasible and was cancelled. As required by Section 204(I) of the Federal Land Policy and Management Act (P.L. 94-579), Reclamation completed a withdrawal review on lands withdrawn for the Fruitland Mesa Project. In December 1988, Reclamation submitted a request to the Bureau of Land Management recommending that its withdrawals for this project, totaling approximately 22,600 acres, be terminated in their entirety. That recommendation was never processed by the Bureau of Land Management. In September 1996, the Interior Department's Inspector General completed an audit report entitled, *Withdrawn Lands, Department of the Interior*. As a result of recommendations made in that audit report, it was anticipated that the Bureau of Land Management would soon begin to clear a large backlog of unprocessed recommendations. At the request of Reclamation, the Bureau of Land Management, on September 22, 2005, notified Reclamation by letter that the requested revocation was being held up by the Bureau of Land Management pending the completion of its Resource Management Plan for the area.

#### **d. West Divide Project and San Miguel Project**

Both projects were found to be economically unjustified and were cancelled. As required by Section 204(l) of the Federal Land Policy and Management Act (P.L. 94-579), Reclamation completed a withdrawal review on lands withdrawn for the West Divide Project. In March 1987, Reclamation submitted a request to the Bureau of Land Management recommending that its withdrawals for this project, totaling approximately 739.6 acres, be terminated in their entirety. On September 1, 1999, the Bureau of Land Management revoked 740 acres for the West Divide Project withdrawn by the Secretary's Order of December 8, 1942. A withdrawal was never processed by the Bureau of Land Management for the San Miguel Project.

#### **e. Dallas Creek Project**

Block notice number one was issued for the Dallas Creek Project on May 31, 1989 covering all M&I water use. The notice involved 28,100 acre-feet of water. Repayment on that notice began in 1990. Block notice number two was issued on March 21, 1990. The notice included all irrigation waters for the project, involving 11,200 acre-feet. The notice was issued to Tri-County Water Conservancy District. The first payment under the repayment contract was made in February 1993 and will continue until February 2042.

An accessibility evaluation of the recreation facilities at Ridgway Reservoir was completed in 2003. A determination is being made as to what improvements are needed to accommodate visitors with disabilities and to provide them with a quality recreation experience. Due to other higher-priority work, action plans to correct identified deficiencies have not been completed; however, it's anticipated they will be within the next year or so. Recreation at Ridgway Reservoir is managed by the Colorado Division of Parks and Outdoor Recreation under an agreement with Reclamation. Boating, scuba diving, water skiing, windsurfing and swimming are some of the offerings at the park. Ridgway Marina, Inc., the concessionaire who operated the marina, informed the Park in March 2005 it would not be operating the marina any longer, and the business was put up for sale. As a result, the marina was not open for business during the 2005 recreation season but is expected to be re-opened under new owners for the 2006 season. There are numerous picnicking and camping sites available including miles of trails around the reservoir and downstream of the dam. In addition, Ridgway State Park has a friends group that contributes time and talent to provide enhancements to the park.

The Western Colorado Area Office (WCAO) of the Bureau of Reclamation sponsored another successful Catch a Special Thrill (C.A.S.T.) for Kids event at Ridgway in May 2005. Special needs children from the area fished the ponds below the dam and enjoyed lunch and gift handouts after fishing. It's anticipated that WCAO will again sponsor a C.A.S.T. for Kids event at the reservoir where fishing ponds below the dam are stocked for that purpose. The 2006 event is scheduled for May.

#### **f. Smith Fork Project**

Recreation at Crawford Reservoir is managed by the Colorado Division of Parks and Outdoor Recreation under an agreement with Reclamation. All major construction for rehabilitation of existing recreation facilities at Crawford Reservoir was completed in fiscal year 1997. Rehabilitation included water, sewer, electric and road upgrades; campground expansion and modification; and construction of a maintenance building. An accessibility evaluation for the recreation facilities is underway and should be completed by the end of 2006. In the spring of 2006, an existing fishing access route will be upgraded to meet existing accessibility standards. Due to funding limits, this route was not included in the Recreation Rehabilitation Program which was completed in 1997.

## **g. Silt Project**

Recent growth in western Colorado has caused the Public Service Company of Colorado (now XCEL Energy) to begin upgrading its electrical transmission lines from 69 kV to 115kV. This upgrade is anticipated to be complete in 2006. In order for the Silt Pumping Plant to continue to deliver Silt Project irrigation water, the Silt Water Conservancy District (Reclamation's project managing entity) must replace the existing transformer (69kV-2.4kV) with a new transformer (115kV-2.4 kV). In 2003, the District developed a feasibility study for the transformer replacement. The total cost of the project is estimated at \$540,100 and will be financed by the District, loans and in-kind services and grants. The District has been approved for a \$486,000 loan from the Colorado Water Conservation Board. Western Area Power Administration has completed the transformer design and specifications. Transformer replacement will be scheduled once XCEL Energy finalizes its decision and schedule to upgrade its electrical transmission lines.

By the end of 2006, Reclamation and the State of Colorado will complete a major construction project to rehabilitate recreation facilities at Rifle Gap Reservoir. Rehabilitation includes upgrading the park's infrastructure (sewer, water, electricity, and roads); recreation facilities (campgrounds, picnic sites, boat ramp, group use area, restrooms and parking); and support facilities (Visitor Center, Park Headquarters and maintenance building). The park has remained open throughout construction with some traffic re-routed around the new visitor center. All work is being cost-shared with the Colorado Division of Parks and Outdoor Recreation and is designed and constructed to meet accessibility and health and safety standards.

## **h. Paonia Project**

Recreation at Paonia Reservoir is managed by the Colorado Division of Parks and Outdoor Recreation under agreement with Reclamation. The original recreation facilities were built in 1963, and Colorado State Parks assumed management in 1965. There are two campgrounds, a picnic area and boat launching facilities.

The recreation facilities are currently being upgraded as part of the Recreation Rehabilitation Program between the State of Colorado and Reclamation. Construction will be completed by the end of 2006. This is a small park and offers a primitive experience. Three toilet facilities will be made fully accessible (parking and route) under the rehabilitation program. Since there is no drinking water available at the reservoir, visitors are encouraged to bring their own. The recreational attractions at Paonia Reservoir include the beautiful landscape surrounding the park, waterskiing and camping. The park's abundance of wildflowers make it a destination for photographers and native plant hobbyists. It is also known for northern pike fishing (best from late June through late August).

## **2. Colorado and New Mexico**

### **a. Animas-La Plata Project**

The Animas-La Plata Project is located in southwestern Colorado and northwestern New Mexico and was first authorized by the Colorado River Basin Project Act of 1968 (P.L. 90-537). In 1988, it was incorporated into the Colorado Ute Indian Water Rights Settlement Act (P.L. 100-585). The Colorado Ute Settlement Act Amendments of 2000 (Title III of P.L. 106-554, December 21, 2000) provide for implementation and completion of the project. Approval to begin construction was granted in October 2001, and initial site work started in April 2002. Construction of the Durango Pumping Plant and Ridges Basin Dam and Reservoir will provide the Southern Ute Indian and Ute Mountain Ute Tribes with a reliable water supply for their future needs while protecting scarce water resources for existing water users in southwestern Colorado and northwestern New Mexico.

Nine contracts with the Ute Mountain Ute Tribe have been negotiated and/or awarded for the construction of various project features, with a cumulative contract value totaling approximately \$207 million out of the total estimated construction cost of nearly \$291 million (\$291 million represents total value of actual construction activities—there are additional costs for the acquisition of lands, environmental mitigation, cultural resources, sunk costs, non-contract costs and the like). One large contract for the completion of Ridges Basin Dam was awarded in March 2005, and construction has begun.

Overall costs of the project are estimated at \$552 million (October 2006 price level). About \$231 million has been obligated as of September 2005. It remains a priority of the Secretary to implement the Colorado Ute Settlement Act Amendments of 2000 by completing the project in a cost effective and efficient manner.

Recreation-related development for the Animas-La Plata Project is supposed to be performed by a non-federal entity. Planning includes development on the Ridges Basin Reservoir and the purchase, using project funds, of public access points along the Animas River. A minimum pool in the reservoir will be provided to improve water quality and support a recreational fishery. Development plans around the reservoir consists of facilities that would provide for a broad range of recreational activities such as camping, hiking, picnicking, boating, fishing and sightseeing.

### **3. Colorado and Wyoming**

#### **a. Savery-Pot Hook Project**

The Savery-Pot Hook Project was found to be infeasible and was cancelled. As required by Section 204(l) of the Federal Land Policy and Management Act (P.L. 94-579), Reclamation completed a withdrawal review on lands withdrawn for the Savery-Pot Hook Project. In April 1983, Reclamation submitted a request to the Wyoming Bureau of Land Management State Director recommending that its withdrawals for the project, totaling approximately 11,303 acres, be terminated in their entirety. That recommendation was not processed by the Bureau of Land Management. In September 1996, the Interior Department's Inspector General completed an audit report entitled, *Withdrawn Lands, Department of the Interior*. As a result of recommendations made in that audit report, it was anticipated that the Bureau of Land Management would soon begin to clear a large backlog of unprocessed recommendations. In July of 1999, Reclamation sent another request to the Wyoming Bureau of Land Management requesting a revocation of withdrawn lands for the project. In September of 2000, a similar request was sent to the Bureau of Land Management for the state of Colorado. All of the land for the Savory-Pot Hook Project located in the state of Colorado has now been revoked. There are presently 1,205.42 acres still withdrawn for the Savory-Pot Hook Project in Wyoming. On April 4, 2005, Reclamation submitted a request to the Wyoming Bureau of Land Management State Director recommending the revocation of the remaining 1,205.42 acres of withdrawn project lands located in Wyoming. Reclamation is awaiting a response from the Wyoming Bureau of Land Management.

### **4. New Mexico**

#### **a. Navajo Indian Irrigation Project**

The Navajo Indian Irrigation Project (NIIP) was authorized in 1962 by Public Law 87-483 to develop the necessary infrastructure to deliver San Juan River water to approximately 110,630 acres of farmland in the northeastern part of the Navajo Reservation near Farmington, New Mexico. Reclamation was designated by Congress to design, construct, and initially operate and maintain

the project. The authorizing legislation also provided that construction funding for the project is sought by the Bureau of Indian Affairs (BIA) in its budget appropriation.

The project's facilities are, and will be, constructed in 11 blocks of approximately 10,000 acres each. Currently, NIIP is about 70 percent complete with eight blocks completed and approximately 77,040 acres currently under irrigation. In fiscal year 2003, a moratorium on new construction was placed on NIIP until a Memorandum of Understanding between the Department of the Interior and the Navajo Nation has been completed and signed. Completion of NIIP will require an additional \$580 to \$591 million and 18 to 31 more years depending on the level of annual appropriations (\$40 million to \$26 million per year) allocated by Congress.

The farmland served by NIIP is operated by the Navajo Agricultural Products Industry (NAPI), an enterprise of the Navajo Nation charged with managing and operating a commercial farm on lands held in trust for the Navajo Nation. During 2005, the farm produced high value crops including potatoes, wheat, corn and beans processed and marketed under the "Navajo Pride" brand.

The fiscal year 2006 BIA appropriation that will be transferred to Reclamation is about \$10 million. With the moratorium on any new construction, the fiscal year 2006 construction budget will be used to fund the correction of construction deficiencies and transfer inspection punch-list items.

## **5. Utah**

### **a. Central Utah Project**

The Central Utah Project (CUP) provides water for irrigation, M&I use and power generation. Benefits also include recreation, fish and wildlife, flood control, water conservation, water quality control and area development. The initial phase consists of six units. The largest of these is the Bonneville Unit that involves the diversion of water from the Uinta Basin, a part of the Colorado River Basin, to the Great Basin, with associated resource developments in both basins. The other units, Vernal, Uintah, Upalco and Jensen, provide for local development in the Uinta Basin.

#### **(i). Bonneville Unit**

Legislation introduced in 1991 by the Utah congressional delegation to increase the ceiling to allow completion of the Bonneville Unit of the CUP was passed on October 30, 1992, as P.L. 102-575, Central Utah Project Completion Act (CUPCA). The legislation allows the Central Utah Water Conservancy District (District) to plan and construct the remaining CUP features under the purview of the Department of the Interior. Interior's CUPCA Office and the District have prioritized remaining work items to ensure that the most important work is accomplished first under the remaining ceiling.

The Utah Lake Drainage Basin Water Delivery System (ULS) will complete the Bonneville Unit by delivering 101,900 acre-feet of Bonneville Unit water from the Strawberry Reservoir to the Wasatch Front area. The ULS was first announced in a *Federal Register* notice on October 14, 1998. On September 30, 2004, the Department of the Interior filed the ULS Final Environmental Impact Statement and on December 22, 2004, the Assistant Secretary for Water and Science signed the ULS Record of Decision. Contracts for implementation of the ULS have been negotiated and were executed on March 15, 2005. Construction of the ULS is planned to begin in the spring of 2007. The District completed a Supplement to the 1988 Definite Plan Report for the Bonneville Unit which was approved by the CUPCA Office and Reclamation on November 19, 2004.

Public Law 107-366, enacted December 19, 2002, amended the CUPCA, among other things, and authorized the implementation of a pilot management program. The pilot management program will



Jordanelle Dam, Bonneville Unit CUP - Courtesy of Bureau of Reclamation

exist for a period not to exceed five years and shall provide a mechanism for the Secretary and the Central Utah Water Conservancy District to create a mutually acceptable organization within Reclamation to assist the Secretary in her responsibilities for the long-term management of the Bonneville Unit. Such a pilot management program may be extended indefinitely by mutual agreement between the Secretary and the District.

There are five reservoirs that are part of the Bonneville Unit where Reclamation has built facilities for recreational use. The five areas are Jordanelle, Strawberry, Starvation, Currant Creek and Upper Stillwater.

Jordanelle Reservoir is the newest reservoir, and recreation development took place in the late 1980s and early 1990s. There are two main developed areas, Hailstone and Rock Cliff. Hailstone is a large campground and day-use area on the west side of the reservoir. This is the side that experiences the most intensive use including walk-in and RV camping, motorized boating, personal watercraft launch area, three group use pavilions, 41 family picnic sites and a marina store and restaurant. It is the favored location for boaters and RV campers. Rock Cliff Nature Center, along the Upper Provo River, includes a wetlands boardwalk and interpretive walk, walk-in camping, picnicking, river fishing and bird watching in the riparian corridor. It offers visitors a quieter experience than Hailstone.

Recreation and public use at Jordanelle Reservoir is managed by the Utah Division of Parks and Recreation under an agreement with Reclamation. The day use area and a portion of the campgrounds at Hailstone Recreation Area were evaluated in 2004 for compliance with laws and standards governing access for persons with disabilities. The data for those areas is being reviewed, and determinations will be made as to what needs to be done to improve the facilities to meet the intent of the law. The campgrounds, marina area and Keetley area were scheduled to be completed in 2005, but other work took precedence. It is anticipated that this work will be completed within the next year. Jordanelle offers ongoing interpretive programs for school-age children, nature hikes and boating safety programs throughout the recreation season.

Utah State Parks re-constructed and expanded the boat ramp at Rock Cliff in 2004. Additional parking was also installed to accommodate the increasing numbers of visitors. The Rock Cliff Nature Center received a Conservation Assessment Program (CAP) grant from the Institute of Museum and Library Services and Heritage Preservation. The nature center will use funds and CAP expertise to identify conservation needs of its collection and recommend ways to correctly improve collection conditions.

Strawberry Reservoir was enlarged in the 1980s under authority of the Bonneville Unit legislation. As part of Reclamation's commitment to provide recreation opportunities, new facilities were built. There are four main developed areas, Strawberry Bay, Soldier Creek, Renegade Point and Aspen Grove. Reservations for many of the camp loops at Strawberry can be made through the website [www.ReserveUSA.com](http://www.ReserveUSA.com).

- Strawberry Bay features 345 campsites. The picnic areas have shelters, and there are evening interpretive programs available in the summer. There's an interpretive trail from the visitor center. A fish-cleaning station is available near the reservoir. In the winter there are groomed snowmobile trails and ice fishing access. There's also a gas station, restaurant and grocery store and an amphitheater.
- Renegade Point has 66 campsites, and a trail from the campground leads to the eastern arm of the reservoir or south along Poison Ridge to Big Springs.

- Soldier Creek has 166 camp sites and 3 group picnic areas, some with shelters. Day use fishing is available on the northern and eastern sides of the lake, and there's a scenic overlook for those who wish to make a loop drive.
- Aspen Grove features 52 campsites, and a trail follows the shoreline back to the main part of the reservoir and Renegade Point. There are day use areas nearby along the Strawberry River and at Soldier Creek near the dam. There's also a small marina store and fish cleaning station here.

Recreation management at Strawberry Reservoir is under the jurisdiction of the U.S. Forest Service, Uinta National Forest. The managed recreation season is May through October, and there is high use on holidays and weekends. Ice fishing is very popular during the winter months. Available fish species include rainbow and cutthroat trout. Strawberry Reservoir is considered by many to be Utah's premier trout fishing lake.

Starvation State Park was established in 1972, two years after construction of the dam. The Utah Division of Parks and Recreation manages recreation at the reservoir under agreement with Reclamation. Facilities include 54 recreational vehicle (RV) sites (without utilities), 20 tent sites, group camp sites, a group day use pavilion, RV waste disposal, showers, drinking water, modern restrooms and vault toilets in more remote areas. There is an annual walleye fishing tournament that has become quite popular, with trophy fish being caught each year. The park and reservoir offer numerous coves, remote beaches and unusually blue water. Off-road vehicle use is allowed in some areas; however, visitors should consult with State Park employees on areas that are open to use.

Currant Creek Reservoir is a high elevation lake within a timbered setting. Development began in 1977 with the construction of an earth-fill dam, and the reservoir finished filling in 1982. The reservoir shoreline is 85 percent under the jurisdiction of the U.S. Forest Service, with the remaining 15 percent private with restricted access. Recreation management at Currant Creek is also under the jurisdiction of the U.S. Forest Service, Uinta National Forest. There is a campground at the reservoir with 49 campsites, tent sites, picnic areas, swimming, toilets, and a boat ramp. Winter access is restricted as the canyon is not plowed. Some of the camp sites at Currant Creek are reservable under the [www.ReserveUSA.com](http://www.ReserveUSA.com) website.

Upper Stillwater is another high mountain reservoir that has one main campground, Rock Creek. The reservoir serves as a popular trailhead into the High Uintas Wilderness with the boundary only one mile north of the dam near the high water line for the reservoir. Recreation management is under the jurisdiction of the U.S. Forest Service, Ashley National Forest. The managed recreation season is from June through September with high use on holidays and weekends. Available fish species include rainbow, brown and brook trout. Each year, several Federal, state and local entities and volunteers organize to provide a free fishing day at the mitigation ponds on lower Rock Creek for students at Con Amore school. Con Amore is the Uinta Basin's main education facility for children who have developmental disabilities.

## **(ii). Jensen Unit**

Recreation management at Red Fleet Reservoir is performed by the Utah Division of Parks and Recreation under an agreement with the Bureau of Reclamation. Facilities include a small sandy beach, boat launching ramp, two modern rest rooms, 29 campsites, 32 covered picnic tables and fish cleaning and sewage disposal stations. Several years ago a dinosaur track way dating back 200 million years was discovered on the east side of the reservoir. Because there is only a primitive trail

and steep terrain that leads to the track way, an interpretive exhibit about the dinosaur tracks was installed in the campground on the west side almost directly across from the track way in order to provide visitors who have small children, elderly persons and those who have mobility impairments some experience with these paleontological resources. An accessibility evaluation as well as recreation facilities upgrades have taken place at Red Fleet Reservoir. Determinations will be made in the near future on what (if anything) needs to be done to upgrade facilities to provide better access to persons with disabilities.

### **(iii). Vernal Unit**

Recreation at Steinaker Reservoir is managed by the Utah Division of Parks and Recreation under an agreement with the Bureau of Reclamation. The park was opened to the public in 1964. Sandy beaches, swimming, boating and waterskiing top the list of activities. Year-round fishing is for rainbow trout and largemouth bass. Facilities include a boat launching ramp, modern restrooms, sewage disposal station, 31 individual campsites and two group-use pavilions. An accessibility evaluation has been completed at Steinaker Reservoir. Results from an evaluation resulted in a new and supplemental day use area being built that is accessible to persons with mobility impairments. Decisions on other upgrades needed for the park to improve access will be made within a couple of years.

### **b. Emery County Project**

Recreation at Huntington North Reservoir is managed by the Utah Division of Parks and Recreation under an agreement with the Bureau of Reclamation. The State Park has 237 acres open to boating, swimming and fishing. Facilities include 22 camping units, numerous picnic sites, modern restrooms, showers, sewage disposal station, boat launching and a large, covered group-use pavilion. Some recreation facilities enhancement at Huntington North has taken place and will continue into the future as funding becomes available. Available fish species include largemouth bass and bluegill. Crawdads are numerous because of the warm water, and catching them is a favorite activity for kids visiting the area. Many migratory birds, particularly waterfowl, are present.

## **6. Wyoming**

### **a. Lyman Project**

Recreation at Meeks Cabin Dam is the responsibility of the U.S. Forest Service, Wasatch-Cache National Forest, under authority of Public Law 89-72, as amended. The managed recreation season is from June through October with moderate use. Available fish species include cutthroat trout and whitefish. There are 24 campsites at the reservoir and drinking water and restrooms are provided. Preferred activities are camping picnicking, and motorized boating. Reservations for the campsites are not needed.

Recreation at Stateline Dam and Reservoir is the responsibility of the U.S. Forest Service, Wasatch-Cache National Forest, under authority of Public Law 89-72, as amended. The managed recreation season is June through October with moderate use. There is a campground with 41 campsites available as well as drinking water, restrooms, a recreational vehicle dump station and a boat ramp. Some of the facilities are accessible to persons with mobility impairments. The most common fish species are rainbow, brook and cutthroat trout. To the north and to the east of the campground are a number of multi-use trails and roads which loop among the many lakes in the forest. Reservations for the campsites can be made through the [www.ReserveUSA.com](http://www.ReserveUSA.com) website.



Meeks Cabin Dam, Lyman Project, Wyoming - Courtesy of Bureau of Reclamation

## **b. Seedskaadee Project**

Recreation facilities at Fontenelle Reservoir have been managed by the Bureau of Land Management under an agreement with the Bureau of Reclamation for the past 10 years. Fontenelle Creek Recreation Area is the only completely developed site on the reservoir and offers campsites with restrooms and running water. There are also a boat ramp, vault toilets and a group picnic area. There are three other campgrounds (Tailrace, Weeping Rock and Slate Creek) located below Fontenelle Dam that are more primitive, although vault toilets and some developed facilities are available. Recreation use is extensive along the river below the dam, and upgrades are needed in all of the campgrounds in order to better serve the public and protect the riverine resources. An accessibility evaluation of the recreation facilities was conducted in 2001, and determinations are currently being made as to what improvements are needed to better serve the needs of visitors with disabilities. It is anticipated that action plans to correct identified deficiencies will be completed by the end of 2006.

Fishing is the primary recreation activity and species in the reservoir and river include rainbow, brown and cutthroat trout. Slate Creek Campground has become quite popular for group gatherings, and holiday weekends see a surge in visitors at the river campgrounds. In an effort to better control vehicular traffic in the Slate Creek Campground area and encourage revegetation of the riparian corridor, traffic barriers were put in between the established roadway and the river.

## **7. New Mexico**

### **a. San Juan-Chama Project**

A resource management plan initiated in 1995 for Heron Reservoir was completed in March 1998. The Environmental Assessment was completed in December 1997 and distributed to all interested parties. The resource management plan and environmental analysis provide a guide for future resource management decisions and identifies problems, issues, and opportunities at Heron Reservoir.

Through the resource management planning process, Heron Lake State Park has been designated a "quiet lake" where boats operate at no-wake speeds only. An accessibility evaluation on the recreation facilities at Heron Reservoir was completed in 2002. An accessibility action plan has been completed identifying those improvements and the estimated costs necessary to meet the needs of visitors with disabilities. It is expected that the work will be cost-shared with New Mexico State Parks.

Recreation at Heron Reservoir is managed by the New Mexico State Parks under an agreement with the Bureau of Reclamation. Camping, fishing, sailing and hiking are popular summer activities. Cross-country skiing and ice fishing are available during the winter. There are multiple campgrounds, picnic areas and dispersed camping along the lake shore. There is also a trail that leads from near the dam at Heron to the north end of El Vado Reservoir, a hike of about 5.5 miles. The continuing low water elevation at the reservoir has severely hampered the launching of boats from the two main boat ramps and eliminated the only marina on the lake.

Recreation at Nambe Falls Reservoir is managed by the Nambe Pueblo under an agreement with Reclamation. Reclamation pays the Pueblo for some of the recreation operation and maintenance activities management, although the recreation area is day-use only with operating hours between sunrise and sunset. The area is usually closed from mid-November to mid-March. Fishing is a popular activity on the lake, and available species include rainbow and cutthroat trout and salmon. Anglers need to obtain a fishing permit from the Nambe Pueblo. Other activities include motorized

boating (electric motors only), picnicking and hiking. Fishing downstream from the dam is not allowed, although there is a small day-use area located there. In 2003, an accessibility evaluation was conducted on the recreation facilities at the reservoir (not at the area below the dam). Management determinations have been made and action plans put in place to correct the identified deficiencies. Proposed work is now waiting funding to address the reported deficiencies.

#### D. RECREATIONAL USE AT RESERVOIRS

Office of Management and Budget approval to continue to collect visitor use information was received July 3, 2003 and will expire July 31, 2006. A centralized data base has been developed, and visitor use data has been entered for some areas, but not for others, because of competing priorities. Table 7 shows visitor use figures (where available) for CRSP and participating project reservoirs.

**Table 7**  
**Recreational Use At Reservoirs**

<b>Recreation Area</b>	<b>Estimated Visitation</b>	<b>Period of Data Collection</b>
Crawford Reservoir	78,797	June 2003 through June 2004
Curecanti National Recreation Area	882,768	Calendar year 2005
Currant Creek Reservoir	11,001	Calendar year 2005
Flaming Gorge National Recreation Area	1,500,001	Fiscal year 2003
Fontenelle Reservoir	4,201	Fiscal year 2005
Fruitgrowers	12	October 2003 through September 2004
Glen Canyon National Recreation Area	1,928,274	Calendar year 2005
Heron Reservoir	113,220	July 2003 through June 2004
Huntington North Reservoir	37,385	July 2004 through June 2005
Jackson Gulch Reservoir	41,407	July 2003 through June 2004
Joe's Valley Reservoir	85,001	October 2004 through September 2005
Jordanelle Reservoir	151,773	July 2004 through June 2005
Lemon Reservoir	7,325	October 2003 through September 2004
McPhee Reservoir	0	Data not available
Meeks Cabin Reservoir	2,501	June 2004 through September 2005
Nambe Falls Reservoir	32,145	Calendar year 2004
Navajo Reservoir (New Mexico)	512,800	July 2003 through June 2004
Navajo Reservoir (Colorado)	259,332	January 1 through November 30, 2005
Paonia Reservoir	21,364	July 2003 through June 2004
Red Fleet Reservoir	36,134	July 2004 through June 2005
Ridgway Reservoir	332,433	July 2003 through June 2004
Rifle Gap Reservoir	105,576	July 2003 through June 2004
Silver Jack Reservoir	0	Data not available
Starvation Reservoir	99,147	July 2004 through June 2005
Stateline Reservoir	6,001	June 2004 through September 2005
Steinaker Reservoir	37,001	July 2004 through June 2005
Strawberry Reservoir	459,037	Calendar year 2005
Taylor Park Reservoir	10,000	July 2003, through June 2004
Upper Stillwater Reservoir	4,101	April 2004 through September 2005
<b>Total</b>	<b>6,790,351</b>	

## **E. STATUS OF OTHER RECLAMATION PROJECTS IN THE UPPER COLORADO RIVER BASIN**

### **1. Colorado**

#### **a. Fruitgrowers Dam Project**

Reclamation manages the public use at Fruitgrowers Reservoir. The reservoir and surrounding area have listed as “important” bird sites by the state of Colorado, and they have been determined to be “globally significant” areas under the American Bird Conservancy criteria because of their importance to migrating sandhill cranes and white-faced ibis as well as the presence of some southwestern willow flycatchers. The International Birding Association has determined that the area is an important area for shorebirds as well. The reservoir also hosts the largest nesting colony of western grebes in Colorado, and more than 200 species of birds have been sighted. It has been estimated by the Audubon Society that 26 percent of the greater sandhill cranes stop at Fruitgrowers Reservoir during spring migration. For two weekends in March there is the Eckert Crane Days Festival at Fruitgrowers Reservoir that is sponsored by the Black Canyon Audubon Society and Surface Creek Winery and Gallery. This has been an annual event for many years. A watchable wildlife trail and viewing area accessible to persons with disabilities was constructed in 1993. However, water quality issues at Fruitgrowers Reservoir have prevented the public from utilizing the wildlife trail to its full potential.

Reclamation is continuing its work to eliminate as much as possible the invasive tamarisk (salt cedar) that has spread throughout the reservoir area. The tamarisk is removed with machinery and then the cleared area treated with herbicides to keep regeneration from occurring. In addition, selective Russian Olive removal is being done with the older more mature trees being kept and the younger ones being removed.

#### **b. Uncompahgre Project**

The proposed AB Lateral Hydropower Facility has been withdrawn by the project sponsors. The facility would have generated electrical power, improved the Uncompahgre Project irrigation system and enhanced revenues of the Uncompahgre Valley Water Users Association.

The recreation facilities at Taylor Park Reservoir are managed by the U.S. Forest Service under a management agreement with Reclamation. Since some of the recreation sites are very old, Reclamation decided to conduct some necessary accessibility improvements. During the fall of 2004, a walkway and parking areas for an existing vault toilet near the boat ramp were installed. The new facilities are accessible and compliant with laws and standards governing access for persons with disabilities. The reservoir, with 2,400 acres of surface water, offers good fishing and includes trout species, northern pike and Kokanee salmon.

#### **c. Dominguez Project (Whitewater)**

The Dominguez Project was found to be infeasible and was cancelled. As required by Section 204(l) of the Federal Land Policy and Management Act (P.L. 94-579), Reclamation completed a withdrawal review on lands withdrawn for the Dominguez Project. In December 1988, Reclamation submitted a request to the Bureau of Land Management recommending that its withdrawals for the project, totaling approximately 28,444 acres, be terminated in their entirety. That recommendation was not processed by the Bureau of Land Management. In September 1996, the Interior Department’s Inspector General

completed an audit report entitled *Withdrawn Lands, Department of the Interior*. As a result of recommendations made in that audit report, it was anticipated that the Bureau of Land Management would soon begin to clear a large backlog of unprocessed recommendations. In April 2002, Reclamation sent a memorandum to the State Director of the Bureau of Land Management stating that the December 1988 withdrawal review is still valid and that Reclamation recommends that the 28,444 acres withdrawn for the Dominguez Project be revoked. That request has not yet been processed. On July 8, 2005, Reclamation sent another memorandum to the State Director of the Bureau of Land Management requesting the status of the request of the revocation of lands for the Dominguez Project. On September 22, 2005, Reclamation was informed that the Montrose Office of the Bureau of Land Management has held up the revocation pending completion of their Resource Management Plan for the area.

#### **d. Mancos Project**

At the request of the Mancos Water Conservancy District, Congress passed P.L. 106-549 (114 Stat. 2743) on December 19, 2000, which authorized the Secretary of the Interior to contract with the Mancos Water Conservancy District to use Mancos Project facilities for impounding, storage, diverting and carriage of non-project water for irrigation, domestic, municipal, industrial and any other beneficial purposes. Modifications have been made to improve the efficiency and reliability of the domestic water line that supplies water to the Mesa Verde National Park, the town of Mancos and outlying areas.

Reclamation and the Mancos Water Conservancy District plan to enter into the following water contracts in 2006: (a) a water service contract with the Mancos Rural Water Company and the District for up to 300 acre-feet of project water to be used for municipal, industrial and domestic purposes; and (b) a carriage contract with the town of Mancos and the District which allows the town to carry 1.6 cfs of their non-project water through Mancos Project facilities when capacity is available.

Recreation at Jackson Gulch Reservoir is managed by the Colorado Division of Parks and Outdoor Recreation under an agreement with the Bureau of Reclamation. Mancos State Park became part of the Colorado State Parks system in 1987. Camping, fishing, hiking, picnicking, wildlife viewing and winter sports are all popular activities at the park. In partnership with Colorado State Parks, Reclamation recently approved a fuel reduction/elimination of dead trees project for the Jackson Gulch Reservoir Area. Implementation of the plan should occur in 2006. There is a network of multiple-use trails (foot, horse, bike and ski) at the reservoir and one (Chicken Creek) that leads into the adjacent San Juan National Forest.

An accessibility evaluation of the recreation facilities has been completed. Upgrades are waiting funding, and it is anticipated that needed improvements will be cost-shared with Colorado State Parks. Reclamation was able to secure some funding (\$7,000) in fiscal year 2006 to begin some retrofits.

#### **e. Pine River Project**

The Pine River Irrigation District and Reclamation have initiated contract negotiations for the use of Pine River Project water from Vallecito Reservoir for municipal, industrial and miscellaneous purposes pursuant to the Sale of Water for Miscellaneous Purposes Act of February 25, 1920. This contract will establish the terms and conditions for the proposed conversion of Pine River Project water from irrigation to miscellaneous purposes and uses other than irrigation. Reclamation will also

need to comply with the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, along with meeting the requirements of the 1920 Act.

## **F. INVESTIGATIONS**

The Upper Colorado Region Investigations budget for fiscal year 2005 was about \$3.5 million, with approximately 51 percent being directed within the Upper Colorado River Basin. About 17 percent of the General Investigations funds spent in the basin during fiscal year 2005 were for salinity control activities including support of the Colorado River Storage System model, economic impact studies, salinity monitoring and verification studies, program coordination, other salinity control activities and managing the basin wide salinity control program.

Ongoing planning investigations include the Navajo-Gallup Water Supply Project, the Navajo Nation Investigations Program, the San Juan River Basin Investigations Program, the Uintah Basin Water Supply/Quality Optimization Study and Coordinated Canal Operations – Southwestern Wyoming. Reclamation continues to provide assistance to states, as requested, through its Technical Assistance to States Program and continues to coordinate with other natural resource agencies on critical water resource related problems and issues with funds appropriated through the Environmental and Interagency Coordination account. Funds are also provided in the General Planning Activities account for Reclamation to conduct critical short-term investigation activities not funded by other programs.

### **1. New Mexico**

#### **a. Navajo-Gallup Water Supply Project**

Reclamation is providing planning and technical assistance for this project. The project's purpose is to provide year 2040 municipal and industrial water to the city of Gallup and the Jicarilla and Navajo Nations in New Mexico and the Window Rock area of the Navajo Nation in Arizona. Existing groundwater supplies will be augmented to meet current and future water demands. A preferred alternative has been identified and a Draft Planning Report/Environmental Impact Statement is scheduled for 2006.

#### **b. Navajo Nation Investigations Program (New Mexico, Utah and Arizona)**

In 2000, Reclamation signed a Memorandum of Understanding with the Navajo Nation to establish the foundation for a long-term partnership to provide assistance to the Nation in resolving its water resource-related problems. The water resources of the Nation are severely limited and the lack of infrastructure and infrastructure deficiencies adversely impact the health, economy and welfare of the Navajo people. The lack of adequate domestic, municipal and industrial water is currently the Nation's greatest water resource problem. This program is focusing on identifying the domestic, municipal and industrial water needs of each region of the reservation, evaluating the available resources and developing appraisal-level alternatives to meet those needs. Specific studies to be conducted under this program are determined by the Navajo Nation and Reclamation in consultation with participating agencies. During fiscal year 2005, a Summary Report for the Ojo Encino-Torreón, New Mexico Water Distribution System Analysis was completed, and Part 2 of the Page-Lechee Water Supply Study was completed.

### **c. San Juan River Basin Investigations Program (New Mexico, Colorado, Utah and Arizona)**

Reclamation is collecting data and conducting investigations, in cooperation with numerous other entities, necessary to resolve the many and complex water resource management issues in the San Juan River Basin. The demand for water in the basin exceeds the supply and until critical issues affecting current and future uses are resolved, existing uses are in jeopardy, and new development is on hold. The major issues include: (1) settlement and implementation of settlements of water right claims of four Native American tribes, (2) providing instream flows for recovery of endangered fish in the San Juan River, and (3) providing water supplies to meet the needs of the rapid development and population growth that is occurring in the basin. Reclamation is currently using a RiverWare framework hydrological model of the basin to evaluate the overall effects of proposed new depletions on existing uses and the instream flow required for the endangered fish. In fiscal year 2005, Reclamation continued water resources studies including completion of Graphic Information System (GIS) canal mapping projects in the Pine River and Animas River Basins, continued water quality investigations in the Upper Animas River basin to locate and quantify heavy metals loading to the River and conducted nutrient loading investigations of the Animas River from the upper reaches to the mouth to locate and quantify nutrient loading to the River.

## **2. Utah**

### **a. Uintah Basin Water Supply/Quality Optimization Study**

This study is investigating the operation of the various Federal and non-Federal water projects on the Duchesne River and its tributaries. The study involves the installation of a basin-wide real-time monitoring and control system, the development of a basin-wide Website ([www.duchesneriver.org](http://www.duchesneriver.org)) for displaying the real-time and historic information, and the development of an optimization plan to better utilize the existing water supplies through coordinated regional operation. During 2005, the monitoring and control system was extended into the Lake Fork/Yellowstone River drainage, tributaries of the Duchesne River. A major base station for collecting and managing the real-time information was established at the Moon Lake Water User Association office in Roosevelt. During 2006, the real-time network will be extended into the Uinta/Whiterocks River drainage.

### **b. Emery County Water Management Study (Phase II)**

Using monies from a "Water 2025" challenge grant and monies provided through Reclamation's research program, the Emery County real-time monitoring network is being expanded to include the automation on the area's major water control facilities. This work, which was initiated during 2005, will be completed during 2006. In addition, the possibilities for using RiverWare (a hydrologic modeling package) for the real-time operations of Huntington and Cottonwood creeks are being investigated. This work is being heavily cost-shared by the Emery Water Conservancy District.

### **c. Replacement of Spillway at Scofield Dam**

Corrective action studies are underway for replacing the deteriorating spillway at Scofield Dam, operated by the Carbon Water Conservancy District. The spillway will need to be replaced to preserve the safety of the dam. These studies are being funded by the Safety of Dams Program.

#### **d. Modification of Echo Dam**

Corrective action studies are underway for modification of Echo Dam, operated by the Weber River Water Users Association. The foundation of Echo Dam and its emergency spillway will need to be modified to preserve the safety of the dam. These studies are being funded by the Safety of Dams Program.

### **3. Wyoming**

#### **a. Coordinated Canal Operations – Southwestern Wyoming**

Reclamation has been working with the Bridger Valley Water Conservancy District on plans to automate Meeks Cabin and Stateline Dams, thereby making both facilities more responsive to changing hydrologic and weather conditions. The actual installation work has been temporarily delayed while issues related to power are resolved.

## **G. RESERVOIR OPERATIONS**

### **1. 2005 Hydrology Summary VI and Reservoir Status**

The Colorado River Basin experienced five consecutive years of extreme drought during water years 2000 through 2004. Unregulated<sup>8</sup> inflow into Lake Powell during this 5-year period was only 62, 59, 25, 51, and 49 percent of average, respectively. These years of low inflow resulted in significant drawdown of Colorado River reservoirs. As water year 2005 began (on October 1, 2004), reservoir storage in Lake Powell and Lake Mead had been reduced to 38 and 54 percent of capacity, respectively.

Improved hydrologic conditions were observed in water year 2005. Numerous precipitation events in the fall of 2004 helped reduce soil moisture deficits caused by the drought. The system responded to these fall precipitation events with increased flows. November 2004 was the first month with above average inflow to Lake Powell since September of 1999. Snowpack in the Upper Colorado River Basin ranged from average to moderately above average throughout the winter of 2004-2005. Snowpack above Lake Powell on April 1, 2005, was 118 percent of average. Unregulated inflow into Lake Powell during the April through July runoff period in 2005 was 8.81 million acre-feet (maf [10,900 million cubic meters or mcm]), or 111 percent of the 30-year average<sup>9</sup>. Peak inflow to Lake Powell was 76,900 cubic feet per second (cfs [2,180 cubic meters per second or cms]) and occurred on May 29, 2005. Peak inflow to Lake Powell had not reached this level since 1997. Reservoir storage in Lake Powell increased by 2.77 maf (3,420 mcm) during water year 2005. Storage in reservoirs upstream of Lake Powell has increased by approximately 1.12 maf (1,380 mcm) in water year 2005.

Tributary flows in the Lower Colorado River Basin were exceptionally high during the first half of water year 2005 due to Pacific storm events bringing above average precipitation into the southwestern region of the United States. Lower Basin tributary flows, both measured and unmeasured, were approximately 2.98 maf (3,676 mcm), 224 percent of the long-term average (1906-1995). The

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<sup>8</sup> Unregulated inflow adjusts for the effects of operations at upstream reservoirs. It is computed by adding the change in storage and the evaporation losses from upstream reservoirs to the observed inflow. Unregulated inflow is used because it provides an inflow time series that is not biased by upstream reservoir operations.

<sup>9</sup> Inflow statistics throughout this document will be compared to the 30-year average, 1971-2000, unless otherwise noted.

precipitation from these storms triggered flood control releases from the Corps of Engineers' (Corps) dams in Arizona, as well as reducing the demands in the Lower Basin. Flood control releases from Alamo and Painted Rock Dams were coordinated with Reclamation for inclusion in scheduling releases from Hoover, Davis and Parker Dams. Because of these tributary flows and reduced demands, Lake Mead storage increased by 1.28 maf (1,579 mcm) during water year 2005.

Inflows into Lake Mead include the measured tributary flows of the Little Colorado River and the Virgin River and unmeasured tributary flows. For water year 2005, the Little Colorado River flows were 147 percent of the long-term average, and the Virgin River flows were 293 percent of the long-term average. Unmeasured flows into Lake Mead for the water year were 230 percent of the long-term average. The total tributary inflows into Lake Mead were 1.84 maf (2,269 mcm), 225 percent of average.

For water year 2005, total inflow from the Bill Williams River into the mainstem was 0.557 maf (686 mcm), 510 percent of the long-term average, and the total inflow from the Gila River into the mainstem was 0.264 maf (326 mcm)<sup>10</sup>.

At the beginning of water year 2005, Colorado River total system storage was 49 percent of capacity. As of September 30, 2005, total system storage was 59 percent of capacity, an increase of approximately 5.10 maf (6,290 mcm). When compared to total system storage on September 30, 2003 (34.1 maf [42,062 mcm]), the gain in storage in water year 2005 offset the decrease in storage in water year 2004. While drought conditions in the Colorado River Basin eased in 2005, reservoir storage, particularly in Lake Powell and Lake Mead, remains relatively low.

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<sup>10</sup> Gila River flows are very sporadic. These flows occur very seldom, and when they do, they are typically of high magnitude.

Table 8 lists the October 1, 2005, reservoir vacant space, live storage, water elevation, percent of capacity, change in storage and change in water elevation during water year 2005.

**Table 8**  
**Reservoir Conditions on October 1, 2005**

Reservoir	Vacant Space	Live Storage	Water Elevation	Percent of Capacity	Change in Storage	Change in Elevation
	(maf)	(maf)	(ft)	(%)	(maf)	(ft)
Fontenelle	0.100	0.245	6,492.6	71	-0.043	-6.0
Flaming Gorge	0.572	3.177	6,025.5	85	0.498	14.3
Blue Mesa	0.241	0.588	7,490.9	71	0.081	10.7
Navajo	0.179	1.516	6,072.6	89	0.581	50.1
Lake Powell	12.38	11.94	3,602.0	49	2.770	31.2
Lake Mead	10.66	15.22	1,138.4	59	1.282	12.5
Lake Mohave	0.237	1.573	638.3	87	-0.032	-1.2
Lake Havasu	0.065	0.554	446.6	89	-0.035	-1.8
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Totals	24.435	34.811		59	5.102	

\*From October 1, 2004, to September 30, 2005.

**2. 2006 Water Supply Assumptions**

For 2006 operations, three reservoir unregulated inflow scenarios were developed and analyzed and are labeled as probable maximum, most probable and probable minimum. The attached graphs show these inflow scenarios with associated release patterns and end-of-month contents for each reservoir.

Although there is considerable uncertainty associated with streamflow forecasts and reservoir operating plans made a year in advance, these projections are valuable in analyzing probable impacts on project uses and purposes. The National Weather Service's Colorado Basin River Forecast Center developed the inflow for the most probable inflow scenario in 2006 using the Ensemble Streamflow Prediction (ESP) model. Most probable inflow for Lake Powell in water year 2006 is 11.18 maf (13,780 mcm), or 93 percent of average. The minimum inflow scenario (90 percent exceedance) and maximum inflow scenario (10 percent exceedance) were developed with a Pearson Type III statistical distribution using historical inflow data as input<sup>11</sup>. Minimum probable inflow to Lake Powell in water year 2006 is 5.41 maf (6,670 mcm), or 45 percent of average. Maximum probable inflow is 18.20 maf (22,440 mcm) or 151 percent of average. The three inflow scenarios for Lake Powell are shown in Table 9.

<sup>11</sup> Inflow data from the period 1976-2002 was used to develop the three inflow scenarios.

The monthly volumes of inflow resulting from these assumptions were input into Reclamation's monthly reservoir simulation model, used to plan reservoir operations for the upcoming 24-month period. Starting with October 1, 2005 reservoir storage conditions, the monthly releases for each reservoir were adjusted until release and storage levels best accomplished project purposes.

**Table 9**  
**Projected Unregulated Inflow**  
**Into Lake Powell for Water Year 2006**

Time Period	Probable Maximum	Most Probable	Probable Minimum
10/05–12/05	1.25	1.25	1.25
1/06 – 3/06	1.96	1.45	0.84
4/06 – 7/06	13.56	7.40	2.62
8/06 – 9/06	1.43	1.08	0.70
10/06 – 12/06	1.39	1.39	1.39
WY 2006	18.20	11.18	5.41
CY 2006	18.34	11.32	5.55

### **3. Summary of Reservoir Operations in 2005 and Projected 2006 Reservoir Operations**

The regulation of the Colorado River has had effects on downstream aquatic and riparian resources. Controlled releases from dams have modified temperature, sediment load, and flow patterns, resulting in increased productivity of some introduced aquatic resources and the development of economically significant sport fisheries. However, these same releases have detrimental effects on endangered and other native species. Operating strategies designed to protect and enhance downstream aquatic and riparian resources have been established at several locations in the Colorado River Basin.

In the Upper Basin, public stakeholder work groups have been established at Fontenelle Dam, Flaming Gorge Dam, the Aspinall Unit, Navajo Dam and Glen Canyon Dam.<sup>12</sup> These work groups provide a public forum for information dissemination on ongoing and projected reservoir operations throughout the year. These work groups allow stakeholders the opportunity to provide information and feedback on ongoing reservoir operations.

Modifications to planned operations may be made based on changes in forecast conditions or other relevant factors. Due to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Upper Colorado Recovery Program), the San Juan River Basin Recovery Implementation Program (San Juan Recovery Program), Section 7 consultations under the Endangered Species Act (ESA) and other downstream concerns, modification to the monthly

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<sup>12</sup> At Glen Canyon Dam, the Adaptive Management Work Group (AMWG), a Federal Advisory Committee, was established in 1997. Additional information on the AMWG can be found at [www.usbr.gov/uc/rm/amp](http://www.usbr.gov/uc/rm/amp).

operation plans may be based on other factors in addition to changes in streamflow forecasts. Decisions on spring peak releases and downstream habitat target flows may be made midway through the runoff season. Reclamation will initiate meetings with the U.S. Fish and Wildlife Service (Service), representatives of the Basin States and with public stakeholder work groups to facilitate the discussions necessary to finalize site-specific operations plans.

Reclamation completed ESA Section 7 consultation with the Service in April 1997 and again in April 2002 for on-going discretionary routine lower Colorado River operations and maintenance activities for a total period of up to eight years. On an annual basis, Reclamation's compliance with environmental commitments related to the 1997 and 2002 Biological Opinions is reported to the Service. Reclamation will continue to implement environmental commitments related to the Biological Opinion for "Interim Surplus Criteria, Secretarial Implementation Agreement, and Conservation Measures on the Lower Colorado River, Lake Mead to the Southerly International Boundary Arizona, California, and Nevada" dated January 12, 2001 (2001 Biological Opinion). In 1995, Reclamation and the Service formed a partnership with other federal, state and local public agencies and private organizations to develop the Lower Colorado River Multi-Species Conservation Program (LCR MSCP). This program permits both non-federal and federal parties to participate in and address ESA compliance requirements under Sections 7 and 10 of the ESA. The final LCR MSCP environmental compliance documents (i.e., Habitat Conservation Plan (HCP), Biological Assessment and Programmatic Environmental Impact Statement/Environmental Impact Report) were completed in December 2004. In April 2005, all remaining LCR MSCP implementation documents and agreements were executed by the Secretary and/or other federal and non-federal participating agencies, including the Record of Decision; the Implementing Agreement; the Funding and Management Agreement; the ESA Section 10 incidental take authorization permit; the ESA Section 7 Biological Opinion; and the Section 2081 Permit (applicable only to the California permittees). The implementation of the 2001 Biological Opinion conservation and mitigation measures shall be credited against the requirements of the LCR MSCP in accordance with the HCP.

The following paragraphs discuss the operation of each of the reservoirs with respect to compact, decree, statutory water delivery obligations and instream flow needs for maintaining or improving aquatic resources, where appropriate.

#### **a. Fontenelle Reservoir**

Hydrologic conditions improved in water year 2005 in the Upper Green River Basin in comparison to the previous five consecutive years. The April through July inflow to Fontenelle Reservoir during water year 2005 was 0.843 maf (1,040 mcm), which was 98 percent of normal. Fontenelle Reservoir nearly filled in 2005, and bypass releases were necessary in order to accommodate the spring runoff. Inflow peaked at 8,350 cfs or 236 cms on June 26, 2005. Releases from Fontenelle Reservoir reached a maximum of 6,000 cfs (170 cms) between June 2, 2005, and June 15, 2005. These maximum releases were a combination of bypass releases and power plant releases. The releases through the power plant during this period were at power plant capacity, approximately 1,500 cfs (40 cms). The peak elevation of Fontenelle Reservoir during water year 2005 was 6,499.5 feet (1,981.0 meters) which occurred on August 6, 2005. This elevation is 6.5 feet (2.0 meters) below the spillway crest elevation.

The most probable April through July inflow to Fontenelle Reservoir during water year 2006 is 0.844 maf (1,040 mcm). This volume far exceeds 0.345 maf (426 mcm), the storage capacity of Fontenelle Reservoir. For this reason, the most probable and maximum probable inflow scenarios require releases during the spring that exceed the capacity of the power plant to avoid uncontrolled spills from the reservoir. It is very likely that Fontenelle Reservoir will fill during water year 2006. In order to minimize high spring releases and to maximize downstream water resources and power

production, the reservoir will most likely be drawn down to the minimum pool elevation of 6,463 feet (1,970 meters) by early April 2006, which corresponds to a volume of 0.093 maf (115 mcm) of live storage.

## **b. Flaming Gorge Reservoir**

Inflows to Flaming Gorge Reservoir during water year 2005 were near normal and well above the inflow volumes received during the preceding 5 years (2000 to 2004). The annual unregulated inflow volume for water year 2005 was 1.59 maf (1,960 mcm), which was 92 percent of normal. The annual unregulated inflow volumes during the drought period (water year 2000 through water year 2004) were 56, 43, 31, 44 and 51 percent of normal, respectively. Flaming Gorge Reservoir did not fill during water year 2005. On October 1, 2004, the beginning of water year 2005, the reservoir elevation was 6,011.2 feet above sea level (1,832 meters). The reservoir elevation increased during water year 2005 and ended water year 2005 (on September 30, 2005) at an elevation of 6,025.5 feet (1,836.6 meters). The water year ending reservoir elevation was 14.5 feet (4.4 meters) below the full pool elevation of 6,040 feet (1,841 meters), which corresponds to an available storage space of 0.572 maf (706 mcm).

The Upper Colorado Recovery Program made a request to Reclamation to modify the releases from Flaming Gorge Dam during the spring to achieve three specific target flows in the Green River below the confluence with the Yampa River. For this test flow, the targets requested were 14,000 cfs (396 cms) for 2 days, 16,000 cfs (453 cms) for 2 days and 18,000 cfs (510 cms) for 2 days. Reclamation agreed to attempt to meet these specific targets within the limited release capacity of the power plant and two bypass tubes (total capacity of 8,600 cfs). On May 17, 2005, Reclamation increased releases to power plant capacity of 4,600 cfs (130 cms). Bypass releases were initiated on May 18, 2005 and maintained through May 20, 2005 to achieve the flow request. From May 28, 2005 through June 1, 2005, bypass releases were again implemented and adjusted as the flow of the Yampa River changed in order to achieve the flows requested by the Upper Colorado Recovery Program. The highest level of bypass release was 2,200 cfs (62 cms), which occurred on May 30, 2005. This bypass release combined with power plant capacity releases of 4,600 cfs (130 cms) resulted in a total release of 6,800 cfs (193 cms) on May 30, 2005. The total volume of water bypassed during the test was 13,300 acre-feet (16.4 mcm).

The flow of the Green River measured at Jensen, Utah, reached 14,000 cfs (396 cms) on May 21, 2005 and remained near this level for 1 day. A flow of 18,000 cfs (510 cms) at Jensen was reached on May 23, 2005, with the flow at or above this flow level for 4 days. The 16,000 cfs (453 cms) was achieved and maintained for 3 days beginning on May 29, 2005. The highest flow recorded for the Green River at Jensen, Utah was 19,700 cfs (558 cms), which occurred on May 26, 2005. Flows on the Yampa River provided the majority of this peak flow. Bypass releases from Flaming Gorge were not utilized from May 21, 2005 through May 27, 2005. Releases from Flaming Gorge during this period were power plant capacity releases of 4,600 cfs (130 cms). These flows were considered a test release under the Final Biological Opinion on the Operation of Flaming Gorge, dated November 25, 1992 (1992 Biological Opinion). Reclamation, the Service and Western Area Power Administration conducted informal consultations in setting up the parameters of the test release.

In September 2000, a final report titled "Flow and Temperature Recommendations for Endangered Fishes in the Green River Downstream of Flaming Gorge Dam" (Flaming Gorge Flow Recommendations) was published by the Upper Colorado Recovery Program. The report compiled and summarized research conducted on endangered fish in the Green River under the Upper Colorado Recovery Program and presented flow recommendations for three segments of the Green River. Reclamation is in the process of conducting a National Environmental Policy Act (NEPA) process to determine the best operational alternative for Flaming Gorge Dam to meet these flow recommendations, to the extent possible, while maintaining authorized project purposes. A draft EIS

was released to the public in September 2004, a final EIS was published in November 2005 and a ROD is scheduled for completion in the first quarter of 2006.

During water year 2006, Flaming Gorge Dam will be operated in conformance with the 1992 Biological Opinion until such time that the ROD is adopted. High spring releases will likely continue to occur each year, timed with the Yampa River's spring runoff peak flow, followed by low summer and autumn base flows. Under the most probable scenario, releases in the winter and early spring during 2006 will be relatively low (approximately 1,400 cfs [40 cms]).

### **c. Blue Mesa, Morrow Point and Crystal Reservoirs (Aspinall Unit)**

Near-average to above-average snow pack conditions prevailed in the Gunnison Basin during water year 2005. The April through July unregulated runoff into Blue Mesa Reservoir in 2005 was 0.589 maf (727 mcm) or 82 percent of average. Water year 2005 unregulated inflow into Blue Mesa Reservoir was 0.812 maf (1,011 mcm) or 81 percent of average. Runoff conditions were improved considerably compared to the five preceding years of drought. The net effect of the 2005 runoff and the water conservation practices by water users in the basin resulted in water in storage in Blue Mesa Reservoir increasing during water year 2005 by 0.081 maf (100 mcm). Storage in Blue Mesa Reservoir on September 30, 2005 was 0.588 maf (725 mcm), or 71 percent of capacity.

Releases from Aspinall Unit reservoirs in 2005 were near normal levels. Releases from the Aspinall Unit were reduced on November 12, 2004 to provide for a flow of 350 cfs (9.9 cms) in the Gunnison River through the Black Canyon (below the Gunnison Tunnel). This flow was maintained until early January 2005 at which time flows in the Black Canyon were increased to 600 cfs (17 cms). Water year 2005 power plant bypasses were approximately 0.082 maf (101 mcm) at Crystal Dam. These bypass releases occurred because the power plant was shut down from mid-October 2003 through February 2005 for generator rewind and turbine repair.

On August 16, 1995, Memorandum of Agreement (MOA) No. 95-07-40-R1760 was signed by the Bureau of Reclamation, Service and Colorado Water Conservation Board. The purpose of the MOA was to provide water to the Redlands Fish Ladder and assure at least 300 cfs (8.5 cms) of flow in the 2-mile reach of the Gunnison River between the Redlands Fish Ladder and the confluence of the Gunnison and Colorado Rivers (2-mile reach). This MOA was extended for an additional five years on June 30, 2000. A key provision of the MOA requires that the parties adopt a plan to share water shortages in dry years, when total storage at Blue Mesa Reservoir is projected to drop below 0.4 maf (493 mcm) by the end of the calendar year. In 2004 it was not necessary to operate under a shared-shortage arrangement, because there was sufficient runoff. However, the MOA was not renewed in 2005. Reclamation intends to operate the Aspinall Unit to meet the intent of the MOA if water supplies are available. While deliveries of 100 cfs (2.8 cms) to the Redlands Fish Ladder can be protected under Colorado water law, absent the MOA, the additional releases for the benefit of the 2-mile reach cannot.

In July 2003, a final report titled "Flow Recommendations to Benefit Endangered Fishes in the Colorado and Gunnison Rivers" was published by the Upper Colorado Recovery Program. The report compiled and summarized the results of endangered fish research in the Gunnison and Upper Colorado Rivers under the Upper Colorado Recovery Program. The report presents flow recommendations for two different river reaches: one for the lower Gunnison River between Delta and Grand Junction, Colorado as measured at Whitewater (Gunnison River near Grand Junction gage) Grand Junction; and the other for the Colorado River downstream of the Gunnison River confluence as measured at the Colorado-Utah State line. In January 2004, Reclamation published a Notice of Intent to prepare an EIS on operations to assist with meeting the flow recommendations or a

reasonable alternative to them while maintaining authorized project purposes. Public scoping meetings were held in February 2004. A draft EIS is likely to be released in 2006.

On January 17, 2001, the United States filed an application to quantify the Federal reserved water right decreed to the Black Canyon of the Gunnison National Monument. The water right is for flows in the Gunnison River through the Black Canyon of the Gunnison National Park downstream of the Gunnison Tunnel. On April 2, 2003, the Department of the Interior and the State of Colorado reached agreement regarding water for the Park. Under the 2003 agreement, an amended water right application was filed by the United States for the National Park Service for 300 cfs (8.5 cms) with a 1933 priority date. Additionally, the Colorado Water Conservation Board filed, under the State of Colorado instream flow program, for additional flows in excess of those required to fulfill the purposes of the Aspinall Unit (with a 2003 priority date) to provide for protection of additional water resources for the Park. However, the 2003 amended water right application is currently being challenged in United States District Court in Colorado. Because of this challenge, the Colorado Water Court for Water Division 4 stayed proceedings on the amended Federal claim for the 300 cfs flow pending the outcome of the case before the District Court. The State of Colorado and others challenged the Colorado Water Court stay in the Colorado Supreme Court and in November 2004, the Colorado Supreme Court upheld the water court's decision. No action has been pursued on the Colorado Water Conservation Board's filing for the peak flows (flows in excess of those required to fulfill the purposes of the Aspinall Unit) in the Colorado Water Court for Water Division 4, and no action is anticipated until the amended Federal claim is settled. In short, the reserved water right claim for the Black Canyon of the Gunnison National Park has not yet been quantified.

For water year 2006, the Aspinall Unit will be operated to conserve storage while meeting downstream delivery requirements, consistent with authorized project purposes. Under normal conditions, the minimum release objectives of the Aspinall Unit are to meet the delivery requirements of the Uncompahgre Valley Project, to meet senior water rights downstream, to the extent possible maintain a year round minimum flow of 300 cfs (8.5 cms) in the Gunnison River through the Black Canyon and to the extent possible maintain a minimum flow of 300 cfs (8.5 cms) in the 2-mile reach below the Redlands Diversion Dam during the months of July through October. In dry years, the 300 cfs (8.5 cms) flow through the canyon and the 2-mile reach can be reduced. In 2006 under the most probable inflow conditions, flows through the Black Canyon of the Gunnison National Park will be above the 300 cfs (8.5 cms) minimum release objective during the summer months. Consideration shall be given to the gold medal trout fishery in the Black Canyon and recreational interests consistent with project purposes. Releases during 2006 will be planned to minimize large fluctuations in the daily and monthly flows in the Gunnison River below the Gunnison Tunnel diversion.

Under the minimum probable inflow scenario, Blue Mesa Reservoir is not expected to fill in 2006. Under the most probable and maximum probable inflow scenarios, Blue Mesa Reservoir is expected to fill in 2006.

#### **d. Navajo Reservoir**

Inflow to Navajo Reservoir in 2005 exceeded the 30-year average, marking the first time since 1999 that inflows were above average. The April through July unregulated inflow into Navajo Reservoir in water year 2005 was 1.184 maf (1,460 mcm), or 151 percent of average. Water year 2005 unregulated inflow was 1.58 maf (1,950 mcm), or 142 percent of average. This followed five consecutive years of below average inflow. Unregulated inflow to Navajo Reservoir in water years 2000, 2001, 2002, 2003 and 2004 was 42, 93, 11, 44 and 72 percent of average, respectively. Storage in Navajo Reservoir was significantly reduced due to these protracted drought conditions. The above average inflow in 2005 resulted in Navajo Reservoir nearly filling in 2005. The reservoir reached a peak water surface elevation of 6,076.8 feet on July 8, 2005, 8.2 feet (2.5 meters) from full

pool. The water surface elevation at Navajo Reservoir on September 30, 2005 was 6,072.6 feet (1,850.9 meters), with reservoir storage at 89 percent of capacity.

The final report titled "Flow Recommendations for the San Juan River" (San Juan Flow Recommendations), which outlines flow recommendations for the San Juan River below Navajo Dam, was completed by the San Juan Recovery Program in May 1999. The report synthesizes research conducted on endangered fish in the San Juan River over a 7-year period. The purpose of the report is to provide flow recommendations for the San Juan River that promote the recovery of the endangered Colorado pikeminnow and razorback sucker, maintain important habitat for these two species as well as the other native species, and provide information for the evaluation of continued water development in the basin. These flow recommendations may be revised in the future to reflect knowledge gained over the last several years of operation.

Reclamation is proceeding through a NEPA process on the implementation of operations at Navajo Dam that meet the San Juan Flow Recommendations or a reasonable alternative to them. A Notice of Intent to prepare an EIS was filed on October 1, 1999 in the Federal Register. A draft EIS was released on September 4, 2002. In June 2004, the Service issued a non-jeopardy draft biological opinion for the operations of Navajo Dam to meet the San Juan Flow Recommendations or a reasonable alternative. A final biological opinion is expected in 2005. The completion of the final EIS could occur within four months after receiving the final biological opinion, with the ROD to follow a minimum of 30 days later.

The San Juan Flow Recommendations called for making the maximum spring peak release from Navajo Reservoir in 2005. The spring release pattern implemented in 2005 followed the ramping rates in the San Juan Flow Recommendations. Releases were increased beginning April 27, 2005. A release rate of 4,400 cfs (125 cms) was reached on May 18, 2005, and the release remained at that rate until June 16, 2005. Releases were reduced to the base summer release rate of 500 cfs (14 cms) on June 24, 2005. At times, higher-than-normal base flows were released from Navajo Reservoir during the late summer months during water year 2005. Releases from Navajo Reservoir from July through September 2005 averaged 574 cfs (16.3 cms) and were as high as 750 cfs (21 cms) in early September. These releases were necessary due to decreasing flows in the San Juan River endangered fish critical habitat area (Farmington to Lake Powell). The San Juan Flow Recommendations call for an average weekly flow of between 500 cfs (14 cms) and 1,000 cfs (28 cms) in this reach of the river.

In response to the below average storage level in Navajo Reservoir at the end of water year 2004, an agreement was developed among water users who agreed to limit their water use in 2005 to the rates/volumes indicated in the agreement. The 2005 "Recommendations for Administration and Operation of the San Juan River" were similar to the agreements that were developed in 2003 and 2004. Ten major water users, including the Jicarilla Apache and Navajo Nations, Hammond Conservancy District, Public Service Company of New Mexico, City of Farmington, Arizona Public Service Company, BHP-Billiton, Bloomfield Irrigation District, Farmers Mutual Ditch and Jewett Valley Ditch, endorsed the recommendations which included limitations on diversions for 2005, criteria for determining a shortage and shortage-sharing requirements in the event of a water supply shortfall, including sharing of shortages between the water users and the flow demands for endangered fish habitat. In addition to the ten major water users, the New Mexico Interstate Stream Commission, the Bureau of Indian Affairs, the Service and the San Juan Recovery Program all provided input to the recommendations, and the recommendations were accepted for reservoir operation and river administration purposes by Reclamation and the New Mexico State Engineer. Because of sufficient inflow into Navajo Reservoir in 2005, no shortages occurred during the 2005 water year.

In March 2005, the repair of the 4' x 4' tandem outlet gates at Navajo Dam was completed.

Navajo Reservoir storage levels are expected to be above average in 2006 under the most probable and maximum probable inflow scenarios. Minimum allowable releases from the reservoir will likely be 250 cfs (7 cms) through the fall and winter, subject to NEPA compliance. Under all inflow conditions in 2006, the maximum spring peak release as provided for in the San Juan Flow Recommendations is likely to occur.

#### **e. Lake Powell**

Inflow to Lake Powell was above average in water year 2005, and for the first time since water year 1999, the water surface elevation at Lake Powell increased. Five years of extreme drought in the Colorado River Basin caused the water surface elevation of Lake Powell to decline over a five and a half year period (from September 1999 through April 2005). The water surface elevation of Lake Powell reached a low on April 8, 2005, at 3,555.1 feet (1,083.6 meters), 144.9 feet from full pool. Lake Powell had not been this low since 1969, prior to the reservoir's first filling in 1980. Reservoir storage on April 8, 2005 was only 33 percent of capacity. Above-average inflow reversed this trend in 2005. On September 30, 2005, the water surface elevation of Lake Powell had increased to 3,602.0 feet (1,097.9 meters), 98.0 feet (29.9 meters) from full pool.

Lake Powell began water year 2005 with 9.169 maf (11,310 mcm) of water in storage (38 percent of capacity), 4.77 maf (5,880 mcm) lower than that of Lake Mead. As water year 2005 ended on September 30, 2005, Lake Powell storage had increased to 11.94 maf (14,730 mcm) or 49 percent of capacity. Because of reduced storage and Lake Powell storage being less than Lake Mead storage, releases from Glen Canyon Dam in 2005 were scheduled to maintain the minimum release objective from Lake Powell of 8.23 maf (10,150 mcm) in accordance with Article II(2) of the Operating Criteria. Forecasted inflow to Lake Powell was above average for the majority of water year 2005. While inflow was above average, the inflow volume was not sufficient to trigger storage equalization releases from Lake Powell to Lake Mead. The total release from Lake Powell in water year 2005 was 8.23 maf (10,150 mcm).

April through July unregulated inflow to Lake Powell in water year 2005 was 8.81 maf (10,900 mcm), or 111 percent of average. Water year 2005 unregulated inflow was 12.62 maf (15,560 mcm), or 105 percent of average. Lake Powell reached a seasonal peak elevation of 3,608.4 feet (1,099.8 meters), 91.6 feet from full, on July 14, 2005.

In 2003 and 2004, Reclamation conducted a NEPA process to study the effects of implementing an interim 602(a) storage guideline to assist in the determination of the quantity of water considered necessary to be in storage as of September 30 of each year as required by Section 602(a) of the Colorado River Basin Project Act. The guideline was originally proposed by the Colorado River Basin States (65 Federal Register 48537, August 8, 2000). A Final Environmental Assessment titled "Adoption of an Interim 602(a) Storage Guideline" was completed in March 2004. A Finding of No Significant Impact (FONSI) was approved by the Regional Directors of Reclamation's Upper and Lower Colorado Regions in March 2004. Under the Interim 602(a) Guideline, 602(a) storage requirements determined in accordance with Article II(1) of the Operating Criteria will utilize a value of not less than 14.85 maf (elevation 3,630 feet) for Lake Powell through the year 2016.

On April 24, 2002, members of the Glen Canyon Adaptive Management Work Group (AMWG) recommended to the Secretary that a 2-year experimental flow test be made from Glen Canyon Dam beginning in water year 2003. The recommendation addressed the decline of two key resources downstream of Glen Canyon Dam: fine sediment and the endangered humpback chub. On August 11, 2004, members of the AMWG recommended to the Secretary that replication of the daily high fluctuating releases (5,000 to 20,000 cfs) continue adaptively from January through April of 2005.

The AMWG also proposed that if the Secretary proceeded to implement a high-flow release to mobilize sediment in water year 2005, such release take place in November 2004 rather than January 2005.

To document the proposed experimental flows for water year 2003 and 2004, Reclamation, the National Park Service and the United States Geological Survey jointly prepared the Proposed Experimental Releases from Glen Canyon Dam and Removal of Non-Native Fish EA (September 2002) under NEPA. The EA incorporated a Biological Assessment for the Fish and Wildlife Service under the ESA. A FONSI on the experimental releases was signed by the three agencies on December 6, 2002. To address the AMWG's August 11, 2004 recommendations for water years 2005 and 2006, a supplemental EA was prepared by these same three agencies. A FONSI for the supplemental EA was signed on November 11, 2004.

Large flow events on the Paria River and other tributaries below Glen Canyon Dam from September 2004 through November 2004 resulted in the required input of sediment to trigger a high-flow test, as described in the EA and supplemental EA. Beginning on Sunday, November 21, 2004, consistent with the NEPA documentation, a high-flow test from Glen Canyon Dam was initiated. Releases were increased to power plant capacity, and subsequently releases from the river outlet tubes (bypass tubes) were initiated. A peak flow of approximately 41,000 cfs was released for 60 hours. The total volume of water bypassing the power plant during the high-flow test was 92,700 acre-feet (114 mcm). The goal of the high-flow test was to mobilize and redistribute sediment input from tributaries downstream from the dam to enlarge existing beaches, sandbars and backwaters. Post high-flow assessment data have documented substantial increases to beaches and sandbars in upper Marble Canyon. Monitoring of these features will continue to assess their longevity.

Daily high fluctuating releases (fish suppression flows) from Glen Canyon Dam, another aspect of the experimental flows, were carried out from January 2 through April 8, 2005. Releases during this period ranged between a high of 20,000 cfs (566 cms) to a low of 5,000 cfs (142 cms) each day (except Sundays) under revised ramping rates as described in the EA and the supplemental EA. These fish suppression flows are intended to benefit the endangered humpback chub by reducing the spawning and recruitment of nonnative fish.

On August 31, 2005, the AMWG approved a budget and work plan for 2006. Included in the work plan is a recommendation to return to operations consistent with the parameters of the Glen Canyon Operating Criteria (the ROD for the Glen Canyon Dam Final Environmental Impact Statement) in January through April of 2006. Pending consideration by the Secretary of this recommendation, fish suppression flows are not anticipated in 2006. The work plan approved by the AMWG also recommends that test releases greater than powerplant capacity not be implemented in 2006. This recommendation reflects the need to fully assess the effects of the November 2004 test release on sediment conservation in Marble and Grand Canyons during 2006.

Beginning on September 3, 2005 and continuing through October 31, 2005, a low-flow test release took place from Glen Canyon Dam. This test release was implemented to analyze the effects of two release regimes, steady and limited fluctuating releases, on endangered humpback chub habitats and on conservation of fine sediment in the river corridor below Glen Canyon Dam. From September 3, 2005 through September 20, 2005, the daily fluctuation range in Glen Canyon Dam releases was limited to a low of 6,500 cfs (184 cms) to a high of 9,000 cfs (255 cms). From September 21, 2005 through October 7, 2005, steady releases of 8,000 cfs (227 cms) were implemented. From October 8, 2005, through October 19, 2005, the 6,500 cfs (184 cms) to 9,000 cfs (255 cms) fluctuating flow regime was repeated. From October 20, 2005 through October 31, 2005, releases returned to the steady 8,000 cfs (227 cms) release regime, completing the test.

During water year 2006 under the most probable and minimum probable inflow scenario, the objective shall be to maintain a minimum release of water from Lake Powell of 8.23 maf (10,150 mcm) consistent with Article II(2) of the Operating Criteria. Under the maximum probable inflow condition, an annual release of approximately 11.4 maf (14,060 mcm) would be required to equalize storage between Lake Powell and Lake Mead on September 30, 2006. Releases to equalize storage between Lakes Powell and Mead will be made in 2006 if storage in Lake Powell is projected to be greater than 14.85 maf (elevation 3,630 feet) on September 30, 2006 and active storage in Lake Powell is greater than active storage in Lake Mead. Under the most probable inflow in 2006, the projected water surface elevation at Lake Powell on September 30, 2006 will be 3,625.5 feet (1,105.1 meters) with 13.90 maf (17,150 mcm) of storage (57 percent of capacity).

In 2006, scheduled maintenance activities at Glen Canyon Dam power plant will require that one or more of the eight generating units periodically be offline. Coordination between Reclamation offices in Salt Lake City, Utah and Page, Arizona will take place in the scheduling of maintenance activities to minimize impacts, including those on experimental releases.

Because of less than full storage conditions in Lake Powell resulting from the drought in the Colorado River Basin, releases for dam safety purposes are highly unlikely in 2006. If implemented, releases greater than power plant capacity would be made consistent with the 1956 Colorado River Storage Project Act, the 1968 Colorado River Basin Project Act and the 1992 Grand Canyon Protection Act. Reservoir releases in excess of power plant capacity required for dam safety purposes during high reservoir conditions may be used to accomplish the objectives of the Beach/Habitat Building Flow according to the terms contained in the Glen Canyon Dam ROD and as published in the Glen Canyon Dam Operating Criteria (62 Federal Register 9447, Mar. 3, 1997).

Daily and hourly releases in 2006 will be made according to the parameters of the ROD for the Glen Canyon Dam Final Environmental Impact Statement (GCDFEIS) preferred alternative and the Glen Canyon Dam Operating Criteria, as shown in Table 10. Exceptions to these parameters may be made during power system emergencies or for purposes of humanitarian search and rescue.

**Table 10**  
**Glen Canyon Dam Release Restrictions**  
**(Glen Canyon Dam Operating Criteria)**

Releases from Lake Powell in water year 2006 will continue to reflect consideration of the uses and purposes identified in the authorizing legislation for Glen Canyon Dam. Powerplant releases and Beach/Habitat

<u>Parameter</u>	<u>cfs</u>	<u>cms</u>	<u>Conditions</u>
Maximum flow <sup>6</sup>	25,000	708.0	
Minimum flow	5,000	141.6	Nighttime
	8,000	226.6	7:00 a.m. to 7:00 p.m.
Ramp rates			
Ascending	4,000	113.3	Per Hour
Descending	1,500	42.5	Per Hour
Daily fluctuations <sup>7</sup>	5,000 / 8,000	141.6 / 226.6	

Building Flows will reflect criteria based on the findings, conclusions, and recommendations made in the ROD for the GCDFEIS pursuant to the Grand Canyon Protection Act of 1992 and appropriate NEPA documentation regarding experimental flows. The schedule of monthly releases under the most probable inflow scenario for water year 2006 is displayed in Table 11.

<sup>6</sup> May be exceeded during beach/habitat building flows, habitat maintenance flows, or when necessary to manage above average hydrologic conditions.

<sup>7</sup> Daily fluctuations limit is 5,000 cfs (141.6 cms) for months with release volumes less than 0.600 maf (740 mcm); 6,000 cfs (169.9 cms) for monthly release volumes of 0.600 to 0.800 maf (740 to 987 mcm); and 8,000 cfs (226.6 cms) for monthly volumes over 0.800 maf (990 mcm).

Releases from Lake Powell in water year 2006 will continue to reflect consideration of the uses and purposes identified in the authorizing legislation for Glen Canyon Dam. Power plant releases and Beach/Habitat Building Flows will reflect criteria based on the findings, conclusions and recommendations made in the ROD for the GCDFEIS pursuant to the Grand Canyon Protection Act of 1992 and appropriate NEPA documentation regarding experimental flows. The schedule of monthly releases under the most probable inflow scenario for water year 2006 is displayed in Table 11.

**Table 11**  
**Scheduled Monthly Releases from Lake Powell in Water year 2006**  
**Under Most Probable Inflow Conditions<sup>8</sup>**

Month	Monthly Release (maf)	Monthly Release (mcm)
October 2005	0.500 maf	620 mcm
November 2005	0.500 maf	620 mcm
December 2005	0.800 maf	990 mcm
January 2006	0.800 maf	990 mcm
February 2006	0.800 maf	990 mcm
March 2006	0.600 maf	740 mcm
April 2006	0.600 maf	740 mcm
May 2006	0.600 maf	740 mcm
June 2006	0.800 maf	990 mcm
July 2006	0.865 maf	1070 mcm
August 2006	0.865 maf	1070 mcm
September 2006	0.500 maf	620 mcm

**H. FISH AND WILDLIFE**

The Upper Colorado River Endangered Fish Recovery Program (Recovery Program) is in its 18th year of implementation. The Recovery Program is a cooperative effort among the states of Colorado, Utah and Wyoming; representatives from the environmental and water user communities; the Colorado River Energy Distributors Association, Western Area Power Administration, Service, National Park Service and Bureau of Reclamation. The intent of the program is to recover the endangered Colorado River fish species while the states continue to develop their Colorado River

<sup>8</sup> Modifications to scheduled monthly releases from Lake Powell would be made based on changes in forecast conditions or other relevant factors.

Compact entitlements. The U.S. Fish and Wildlife Service relies upon Recovery Program accomplishments to serve as the “reasonable and prudent alternative” (RPA) for depletion impacts when issuing biological opinions on existing and new water projects requiring Endangered Species Act consultations. Since its inception in 1988, the Recovery Program has served as the RPA in the issuance of biological opinions covering projects depleting over 1.7 million acre-feet of water.

The Recovery Program is one of the oldest basin wide recovery efforts and exemplifies successful cooperation among diverse stakeholders to recover endangered species while developing water and power projects. The Recovery Program provides for collaborative problem solving and proactive efforts that reduce costly litigation. Due to its success, the program has served as a model for other similar programs in the West including the San Juan River Basin Recovery Implementation Program (SJRBRIP) on the San Juan River in Colorado, New Mexico and Utah; the Middle Rio Grande Endangered Species Collaborative Program on the Rio Grande in New Mexico; and the soon-to-be formalized June Sucker Recovery Implementation Program on the Provo River/Utah Lake system in Utah. The Recovery Program also served as a model for the Multi-Species Conservation Program for the lower Colorado River.

In fiscal year 2005, research projects and operation and maintenance activities funded for the Recovery Program totaled almost \$4.4 million. Also in fiscal year 2005, capital projects totaling almost \$14 million were initiated to accomplish physical habitat improvements. Major Recovery Program accomplishments include: (1) construction of canal system improvements to the Grand Valley Project in order to increase irrigation system efficiency and conserve water to improve river flows for the benefit of endangered fish species, (2) construction of a fish screen at the Grand Valley Project diversion dam, (3) construction of a fish screen at the Redlands Water and Power Company diversion dam on the Gunnison River (4) renewed emphasis on non-native fish control, (5) re-operation of Reclamation dams to more closely resemble the natural hydrograph and (6) preconstruction work on a fish passage structure at the Price-Stubb diversion dam.

The SJRBRIP is ongoing in the San Juan River Basin with participation from the states of Colorado and New Mexico, four Indian tribes, the Bureau of Land Management, Reclamation, the U.S. Fish and Wildlife Service and the Bureau of Indian Affairs. The goal of the SJRBRIP is to protect and recover the native fish communities in the San Juan River while providing for continued water development consistent with state and federal laws. In fiscal year 2004, research projects funded for the SJRBRIP totaled \$1.9 million, and capital project construction funding totaled about \$1.3 million.

To date, capital project construction and acquisition of land for both the Upper Colorado and San Juan River Basin Recovery Implementation Programs have been funded primarily through appropriated non-reimbursable construction dollars. In October 2000, Congress passed legislation (P.L. 106-392) that established a cost ceiling of \$80 million. The legislation authorizes expenditures of up to \$46 million of appropriated non-reimbursable construction funds, \$17 million of state cost-share contributions and \$17 million of CRSP reimbursable hydro power revenues for capital projects. The legislation also authorizes expenditures of up to \$6 million of non-reimbursable CRSP hydro power revenues annually to support ongoing research, monitoring and operation and maintenance activities for capital projects.

## **I. APPROPRIATIONS OF FUNDS BY THE UNITED STATES CONGRESS**

The funds appropriated for fiscal year 2005 for construction of the CRSP, participating projects and recreational and fish and wildlife activities totaled \$59,507,000. Recreational and fish and wildlife activities received a total of \$3,821,000.

In fiscal year 2005, appropriations for Reclamation's Colorado River Basin wide Salinity Control Program totaled \$8.3 million, with \$19.8 million for the Natural Resources Conservation Service's Colorado River Basin Salinity Program.

Table 12, page 79, is a summary of action by the 109th Congress pertaining to appropriations of funds for the construction program of the CRSP and participating projects.

Table 13, page 80, shows the total funds approved by the United States Congress for the CRSP and participating projects and chargeable against the limitations of various authorizing Acts (P.L. 485, 84th Congress, CRSP Act, as amended in 1972 by P.L. 32-370 and in 1988 by P.L. 100-563; P.L. 87-485, San Juan-Chama and Navajo Indian Irrigation Projects Act; P.L. 88-568, Savery-Pot Hook, Bostwick Park, and Fruitland Mesa Projects Act; and P.L. 90-537, Colorado River Basin Project Act).

**Table 12**  
**Colorado River Storage Project**  
**Fiscal Year 2005 Program**

Project and State	Budget Request	Allowance		Senate Allowance	P.L. 109-103 Nov. 19, 2005
		House	Senate		
Construction Program					
CRSP Participating Projects:					
Animas-La Plata - Colorado	\$52,000,000	\$56,000,000	\$60,000,000		\$56,000,000
Bonneville Unit, CRSP	4,090,000	4,090,000	4,090,000		4,090,000
Initial Units, CRSP	373,000	373,000	373,000		373,000
TOTAL - Upper Colorado River Basin Fund	<u>\$56,463,000</u>	<u>\$60,463,000</u>	<u>\$64,463,000</u>		<u>\$60,463,000</u>
Recreational and Fish and Wildlife Facilities:					
Recreational Facilities	100,000	100,000	100,000		100,000
Fish and Wildlife Facilities	<u>3,757,000</u>	<u>3,757,000</u>	<u>3,757,000</u>		<u>3,757,000</u>
	\$3,857,000	\$3,857,000	\$3,857,000		\$3,857,000
TOTAL - Colorado River Storage Project	<u>\$60,320,000</u>	<u>\$64,320,000</u>	<u>\$68,320,000</u>		<u>\$64,320,000</u>

**Table 13**  
**Appropriations Approved by Congress for the**  
**Colorado River Storage Project and Participating Projects**

<b><u>Fiscal Year</u></b>	<b><u>Amount</u></b>
1957.....	\$ 13,000,000
1958.....	35,142,000
1959.....	68,033,335
1960.....	74,459,775
1961.....	58,700,000
1962.....	52,534,500
1963.....	108,576,000
1964.....	94,036,700
1965.....	55,800,000
1966.....	45,328,000
1967.....	46,648,000
1968.....	39,600,000
1969.....	27,700,000
1970.....	25,740,000
1971.....	24,230,000
1972.....	27,284,000
1973.....	45,770,000
1974.....	24,426,000
1975.....	22,967,000
1976.....	53,722,000
1977.....	55,200,000
1978.....	67,051,000
1979.....	76,799,000
1980.....	81,502,000
1981.....	125,686,000
1982.....	130,063,000
1983.....	132,942,000
1984.....	161,104,000
1985.....	163,503,000
1986.....	97,412,000
1987.....	110,929,000
1988.....	143,143,000
1989.....	174,005,000
1990.....	163,653,000
1991.....	145,063,000
1992.....	92,093,000
1993.....	69,333,000
1994.....	46,507,000
1995.....	23,272,000
1996.....	27,049,000
1997.....	22,410,000
1998.....	17,565,000
1999.....	4,655,000
2000.....	2,000,000
2001.....	2,000,000
2002.....	16,000,000
2003.....	35,000,000
2004.....	55,640,000
2005.....	57,512,000
2006.....	64,320,000

**TOTAL\$3,307,108,310**

Plus: Navajo Indian Irrigation Project Appropriations550,170,404  
(funds transferred to Reclamation only)

**TOTAL APPROPRIATIONS\$3,857,278,714**

Exclusive of non-reimbursable funds for fish and wildlife, recreation, etc., under Section 8  
of Public Law 485, 84th Congress, and all underfinancing and rescission actions.

## COLORADO RIVER BASIN SALINITY CONTROL PROGRAM

*(Information relative to the Colorado River Basin Salinity Control Program in the Colorado River Basin has been obtained from the United States Department of the Interior, Bureau of Reclamation and Land Management, and the United States Department of Agriculture (USDA), Natural Resources Conservation Service. Additional information may be obtained at [www.uc.usbr.gov/progact/salinity/index.html](http://www.uc.usbr.gov/progact/salinity/index.html).)*

Title II of the Colorado River Basin Salinity Control Act, P.L. 93-320 (approved June 24, 1974), directs the Secretary of the Interior to expedite the investigation, planning and implementation of the salinity control program. The program objective is to treat salinity as a basin-wide problem in order to maintain salinity concentrations at or below 1972 levels in the lower mainstem of the river while the Basin States continue to develop their compact-apportioned waters. Specifically, the Act authorizes the construction, operation and maintenance of four salinity control projects (Paradox Valley, Grand Valley, Las Vegas Wash and Crystal Geyser Units) and the expeditious completion of planning reports for 12 other projects. It also requires cost sharing by non-federal entities. The Secretary of the Interior, Secretary of Agriculture, and Administrator of the Environmental Protection Agency are directed to cooperate and coordinate their activities to meet the program objectives.

P.L. 98-569, signed into law on October 30, 1984, amends P.L. 93-320. This law amends the original salinity control program by authorizing construction of additional units by Reclamation and deauthorizing Crystal Geyser because of poor cost effectiveness. The Secretary of Agriculture is directed to establish a major voluntary on-farm cooperative salinity control program. The authorizing legislation provides for cost sharing and technical assistance to participants for planning and installing needed salinity reduction practices, including voluntary replacement of incidental fish and wildlife values foregone. Participants pay at least 30 percent of the costs to install salinity reduction and wildlife habitat practices. P.L. 98-569 also directs the Bureau of Land Management (BLM) to develop a comprehensive program for minimizing salt contributions from the 48 million acres of basin lands that it administers.

P.L. 104-20 was signed into law on July 28, 1995. This law amends the Salinity Control Act to authorize a new approach to salinity control for Reclamation. Past authorities were unit specific. This amendment authorized Reclamation to pursue salinity control anywhere in the basin. The amendment increased Reclamation's appropriation ceiling by \$75,000,000 to continue its ongoing efforts to control salinity.

The Federal Agriculture Improvement and Reform Act of 1996 (P.L. 104-127) was signed into law April 4, 1996. This Act combines the USDA's salinity control program and other programs into the Environmental Quality Incentives Program. The Act further amends the Salinity Control Act to authorize the Secretary of the Interior the option to expend funds available in the Basin Funds to carry out cost-shared salinity measures consistent with the 30 percent allocation authorized by P.L. 98-569. This cost sharing option is available for both the USDA and Reclamation programs.

P.L. 106-459 was signed into law on November 7, 2000. This law amended the Colorado River Basin Salinity Control Act to increase the appropriation ceiling for Reclamation's Basin-wide Salinity Program by \$100 million, bringing the total to \$175 million. With 30 percent cost sharing from the Colorado River Basin Funds, the total amount of funds available for the Basin-wide Salinity Program is \$250 million. This appropriation authority has allowed Reclamation to request new proposals in 1996, 1997, 1998, 2001 and 2004 under its Basin-wide Salinity Control Program. Reclamation is planning to solicit new proposals in 2005.

P.L. 106-459 also requires the Bureau of Land Management to prepare a report to Congress on the status of implementation of its comprehensive program for minimizing salt contributions to the Colorado River from lands administered by the Bureau of Land Management as directed by section 203(b)(3) of P.L. 98-569 (1984).

## **A. PROGRAM STATUS**

### **1. Bureau of Reclamation and U. S. Department of Agriculture Salinity Control Program**

Reclamation's Basin-wide Salinity Program is currently being implemented under the authorities provided in 1995 by PL 104-20. This program typically awards projects to various non-federal entities through a competitive Request for Proposal process. Projects are ranked based on cost effectiveness and performance risk factors by a committee chaired by the program manager along with representatives from the Salinity Forum and Reclamation area offices. Individual projects are constructed by local entities through construction cooperative agreements with Reclamation area offices in Provo and Grand Junction. Solicitations and awards completed by Reclamation in 1996, 1997 and 1998 consumed the available appropriation ceiling of \$75 million authorized by Congress in P.L. 104-20 to test the new program. Investigation, operation and maintenance funding levels remain at nearly \$5 million per year. The increase in appropriation authority provided by P.L. 106-459 allowed Reclamation to request new proposals in 2001 and 2004. To date, a total of 31 project contracts have been awarded totaling over \$150 million. Reclamation solicited new proposals during the winter of 2003-2004 and awarded six new project contracts during the summer of 2004. In December 2005, Reclamation released a solicitation for proposals that closed on March 24, 2006.

The USDA's Environmental Quality Incentives Program that currently provides the vehicle for Colorado River Basin salinity control activities is administered by the Natural Resources Conservation Service. In fiscal year 2004, a total appropriation of about \$19.8 million was allocated to salinity control activities under the Environmental Quality Incentives Program. These funds were used for cost sharing, technical assistance and education assistance activities.

**a. Grand Valley Unit, Colorado** – Implementation has been underway on this unit since 1979. The application of salinity control and wildlife habitat replacement practices continues. Reclamation has completed its planned project to line and pipe major portions of the irrigation delivery system. Under the USDA program, farmers continue to install underground pipelines, gated pipe, concrete-lined ditches, land leveling and a variety of other practices.

**b. Lower Gunnison Basin Unit, Colorado** – This is the largest of the USDA salinity control units and is located in Delta and Montrose counties. Implementation was initiated in 1988 on this unit. The application of salinity reduction and wildlife habitat replacement practices continues to be an integral part of implementation of the Lower Gunnison Unit. The major practices are underground pipelines, ditch lining, land leveling, irrigation water control structures, gated pipe, sprinkler and surge irrigation systems. Reclamation has installed livestock watering systems to eliminate canal and lateral use during the winter months. Under its new basin-wide salinity control authorities and the National Irrigation Water Quality Program, Reclamation has lined a small portion of the irrigation delivery system to test its effectiveness in concurrently controlling salinity and selenium. Data indicate that salinity improvements also reduce selenium loading. The first center pivot sprinkler has been installed to serve as a demonstration for future systems in the Gunnison Basin.

**c. McElmo Creek Unit, Colorado** – Implementation was initiated on this unit in 1990. Application of salinity reduction and wildlife habitat replacement practices continue to be implemented in this area, with sprinkler systems, underground pipelines and gated pipe being installed. Development and use of automatic shutoff valves for sprinkler systems continues to be widely

implemented in the project to achieve water management goals. Reclamation's salinity control activities were combined into the construction of the Dolores Project that is complete.

**d. Uinta Basin Unit, Utah** – Implementation of the USDA on-farm portion of this unit started in 1980. The major practices installed are sprinkler irrigation systems, improved surface systems, underground pipelines and gated pipe. USDA demonstration plot activities continued on Ute Indian tribal land to illustrate the benefits of sprinkler irrigation; teach principles of irrigation scheduling; and provide data on crop variations, yields and costs to determine fair market lease agreements. Starting in 1997, Reclamation's Basin-wide Program has been replacing earthen canals and laterals with pipelines to provide gravity pressure for on-farm sprinkler systems. Landowner participation has exceeded expectations.

**e. Big Sandy River Unit, Wyoming** – USDA implementation has been underway on this unit since 1988. The application of salinity reduction and wildlife habitat replacement practices is nearing completion. In this area, farmers are converting from surface flood irrigation to primarily low-pressure center pivot irrigation systems for salinity control. Studies in 2003 and beyond will investigate bringing the entire project under gravity-powered sprinkler systems.

**f. Price-San Rafael Unit, Utah** – The Record of Decision was issued in April 1997 for this project. Reclamation and the USDA began work in the project area in fiscal year 1998. In this area, a large number of groups have replaced earthen laterals with pipelines to provide gravity pressure for on-farm sprinkler systems. Reclamation has also installed livestock watering systems to eliminate canal and lateral seepage during the winter months.

**g. San Juan River Unit, New Mexico** – The USDA has completed salinity investigations on irrigated lands along the San Juan River in New Mexico from the vicinity of Fruitland, westward to Cudei. This area consists of approximately 8,400 irrigated acres within the boundaries of the Navajo Nation. Findings from the investigation were published in a verification report in July 1993. The findings indicated that irrigation on the unit is contributing to increased salt loading in the San Juan River that ultimately flows into the Colorado River. No further progress was made on any USDA planning activities in this potential project area due to the functions of the Colorado River Salinity Control Program being combined into the Environmental Quality Incentives Program.

**h. Hammond Project, New Mexico** – The Hammond Project was authorized as one of the initial participating projects of the CRSP and was constructed in the early 1960s. The project is located in northwestern New Mexico along the southern banks of the San Juan River opposite the towns of Blanco, Bloomfield and Farmington, New Mexico. The Hammond Conservancy District, under a cooperative agreement with the Bureau of Reclamation, has constructed the Hammond Salinity Project under the authority of the Basin-wide Program. This project has concrete lined and piped approximately 26 miles of the irrigation delivery system in the project area. The majority of the work has been completed. It is estimated that the lining will help remove at least 27,700 tons to as much as 68,560 tons of salt from the San Juan River.

**i. Mancos Valley Unit, Colorado** – In 2004, the USDA authorized and initiated a salinity control project on irrigated lands in the Mancos River Valley that lies adjacent to and just east of the McElmo Creek Project. This project will reduce salt loading by 15,500 tons by increasing the irrigation application efficiency on 5,400 acres and by reducing seepage in 27 ditches. Implementation will not significantly reduce the amount of irrigation water diverted annually. The total estimated project cost is \$12,500,000. Since 2004, nearly \$2 million new on-farm contracts have been developed and approved using Environmental Quality Incentives Program allocations.

**j. Muddy Creek Unit, Utah** – In 2003-2004, the Natural Resources Conservation Service conducted planning activities for salt control in the crop land areas irrigated from Muddy Creek near the town of Emery. The Muddy Creek Project was officially approved in 2005. Currently contracts are being developed, and it is anticipated that the first construction will commence in March of 2006. Plans are to install high efficiency sprinkler irrigation systems on some 6,000 acres of poorly irrigated crop land which will result in some 12,000 tons of annual salt control. The total estimated project cost would be approximately \$11.6 million.

**k. Silt Area, Colorado** – The NRCS conducted planning and evaluation of the irrigated cropland in the area around the community of Silt and determined that cost effective salt control could be implemented. A Finding of No Significant Impact and request for public comment was issued in November, 2005. It is anticipated that NRCS will proceed to adopt this area for on-farm salinity control implementation in 2006. It is likely that approximately 3000 acres of improved irrigation systems can be installed to control 4000 tons of salt annually.

**l. On-going Project Planning** – Additional projects are being assessed and evaluated for salinity control implementation in the following locations: Manila and Green River, Utah; Blacks Fork (of the Green River) near Lyman, Wyoming; and the agricultural areas around DeBeque and Whitewater, Colorado. These evaluations are in various stages of completion and might ultimately result in an additional 15,000 acres of on-farm salinity control.

## **2. Bureau of Land Management Salinity Control Program**

The Bureau of Land Management remains committed to its role in reducing the contribution of salts to the Colorado River system from public lands. As in past years, the agency has undertaken this responsibility through the multitude of individual management decisions that are made within each Bureau of Land Management jurisdiction. While salinity is not segregated as a specific program, it is affected by almost all other land management decisions that are made. Progress in salt reduction is therefore achieved through efforts to minimize the impacts of grazing, protect riparian areas, reduce off-road vehicle impacts, conduct prescribed burns and generally manage vegetative cover and reduce erosion on public lands.

The natural salt load from the Colorado River at Lees Ferry, Arizona is estimated to be about 5.2 million tons per year. Contributions from BLM lands are included in this estimate. Surface runoff from BLM-administered lands above Lees Ferry is estimated to contribute about 700,000 tons per year, or about 14 percent. The remaining 4.5 million tons are contributed primarily by groundwater inflow and saline springs as well as runoff from other federal, tribal, state and private land.

It is difficult to estimate the actual reduction in the salinity of the Colorado River that may be attributed to BLM management activities. There are many physical, chemical, and biological processes that affect the movement of salt from an upland project area to the Colorado River or a perennial tributary to the Colorado River. As the distance between a project and the nearest perennial flow increases, it quickly becomes difficult to quantify the amount of salt that would reach the perennial flow and the amount of time required for the salt to arrive at the perennial flow. For these reasons, BLM estimates the amount of salt that is retained on the project site by management actions. It is assumed that the salt retained would have been moved off-site by surface runoff if the project had not been implemented.

In a step to strengthen our reporting effort, during FY 2003, BLM created a new salinity coordinator position. The salinity coordinator began work in FY 2004. A restructuring of the allocation of salinity funding has begun and plans are being finalized and communicated to BLM offices that will compete for salinity funding beginning in FY 2006. A new tracking system is being developed for FY 2006 to

follow projects throughout the fiscal year and also, a new year-end reporting system is being created. Projects in areas with higher potential for salt loading are being targeted for funding. The BLM salinity coordinator is actively working with her colleagues in the Bureau of Reclamation and Natural Resources Conservation Service to control salt loading in the Colorado River Basin.

#### **FINDING OF FACT**

Pursuant to Article VIII of the Upper Colorado River Basin Compact, one finding of fact has been made by the Upper Colorado River Commission for water year 2005 in their resolution fo April 18, 2005 (See Resolutions pg. 106. This resolution addresses the extreme low storage content of Lake Powell due to 5 years of drought, the extremely high precipitation in the Lower Basin during the winter and spring 2005 and the need for the Secretary to hold as much water as reasonably possible in Upper Basin reservoirs to aid in recovery from the drought.

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## **APPENDICES**

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**APPENDIX A**

**UPPER COLORADO RIVER COMMISSION**

**Annual Financial Report**  
**June 30, 2005**

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**INDEPENDENT AUDITORS' REPORT**

The Commissioners of the  
Upper Colorado River Commission  
Salt Lake City, Utah

We have audited the accompanying financial statements of the governmental activities of Upper Colorado River Commission as of and for the year ended June 30, 2005, which comprise the Commission's basic financial statements as listed in the table of contents. These financial statements are the responsibility of Upper Colorado River Commission's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities of Upper Colorado River Commission as of June 30, 2005, and the respective changes in financial position thereof for the year then ended in conformity with accounting principles generally accepted in the United States of America.

The Management's Discussion and Analysis on pages 4-7, is not a required part of the basic financial statements but is supplementary information required by the Governmental Accounting Standards Board. We have applied certain limited procedures, which consisted principally of inquiries of management regarding the methods of measurement and presentation of the supplementary information. However, we did not audit the information and express no opinion on it.

Members of Utah Association of CPAs | American Institute of CPAs

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Our audit was conducted for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedule of cash receipts and disbursements, and the supplemental schedule of expenses – budget to actual, are presented for purposes of additional analysis and are not a required part of the basic financial statements of Upper Colorado River Commission. Such information has been subjected to the auditing procedures applied in the audit of the general purpose financial statements and, in our opinion, is fairly presented in all material respects in relation to the general purpose financial statements taken as a whole.

*Ulrich & Associates, P.C.*

August 3, 2005

## **Management Discussion and Analysis**

This discussion and analysis is intended to be an easily readable analysis of the Upper Colorado River Commission (the Commission) financial activities based on currently known facts, decisions or conditions. This analysis focuses on current year activities and should be read in conjunction with the financial statements that follow.

### **Report Layout**

This report is significantly different from prior years. Besides this Management's Discussion and Analysis (MD&A), the report consists of government-wide statements, fund financial statements, and the notes to the financial statements. The first two statements are condensed and present a government-wide view of the Commission's finances. Within this view, all Commission operations are categorized and reported as governmental activities. Governmental activities include basic services and administration. The Commission does not have any business-type activities. These government-wide statements are designed to be more corporate-like in that all activities are consolidated into a total for the Commission.

### **Basic Financial Statements**

The Statement of Net Assets focuses on resources available for future operations. In simple terms, this statement presents a snap-shot view of the assets the Commission, the liabilities it owes and the net difference. The net difference is further separated into amounts restricted for specific purposes and unrestricted amounts. For the first time, governmental activities are reported on the accrual basis of accounting.

The Statement of Activities focuses gross and net costs of the Commission's programs and the extent to which such programs rely upon general revenues. This statement summarizes and simplifies the user's analysis to determine the extent to which programs are self-supporting and/or subsidized by general revenues.

The notes to the financial statements provide additional disclosures required by governmental accounting standards and provide information to assist the reader in understanding the Commission's financial condition.

The MD&A is intended to explain the significant changes in financial position and differences in operation between the current and prior years. Significant changes from the prior year are explained in the following paragraphs.

**Commission as a Whole**

**Government-wide Financial Statements**

Because this is the first year to report governmental activities on the new standard, comparison to the prior year is not possible. In subsequent years, this section will discuss and analyze significant differences. A condensed version of the Statement of Net Assets at June 30, 2005 follows:

	<u>2005</u>	<u>2004</u>
Cash & investments	\$ 332,254	329,031
Receivables	290	-
Capital assets	<u>42,158</u>	<u>30,355</u>
Total assets	<u>374,702</u>	<u>359,386</u>
Other liabilities	31,030	14,860
Deferred revenue	-	<u>34,840</u>
Total liabilities	<u>31,030</u>	<u>49,700</u>
Net assets:		
Invested in capital assets	42,158	30,355
Unrestricted	<u>301,514</u>	<u>267,369</u>
Total net assets	\$ <u>343,672</u>	<u>297,724</u>

During the year ended June 30, 2005 the change in net assets occurred in capital assets and the deferred revenues. The Commission remodeled the office with new carpet and blinds. The commission also purchased office equipment (computers, a copier, and phones). In the prior year the Commission received an assessment payment which is for the next fiscal year. This payment was classified as a deferred revenue.

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A condensed version of the Statement Activities follows:

**Governmental Activities**  
**For the year ended June 30, 2005**

	<u>2005</u>	<u>2004</u>
Revenues		
Program Revenues		
Charges for Services	\$ 1,350	1,350
Assessments	309,700	309,700
General Revenues		
Interest	<u>10,058</u>	<u>4,922</u>
Total Revenues	<u>321,108</u>	<u>315,972</u>
Expenses		
Administration	<u>273,399</u>	<u>285,054</u>
Change in net assets	47,709	30,918
Beginning net assets	<u>295,963</u>	<u>265,045</u>
Ending net assets	\$ <u>343,672</u>	<u>295,963</u>

The Commissions expenditures remained similar to prior year with the exception of wages paid. In the prior year the executive director retired and a new executive director chosen. The new director's salary is less than the retiring director, thus the expenses related to salaries also decreased. The commission also paid out the accumulated leave to the former director in the prior year.

**Capital Assets**

At June 30, 2005 the Commission had \$42,158 invested in capital assets, consisting primarily of a building and furniture. The change in capital assets during the year consisted of remodel expenses (carpet and blinds) for the office and equipment purchased (computers, telephones, and a copier).

**Capital Assets at Year-end**

	<u>2005</u>	<u>2004</u>
Land	\$ 24,159	24,159
Building	68,847	66,019
Improvements	2,207	2,207
Furniture & equipment	<u>56,491</u>	<u>46,124</u>
Subtotal	151,704	138,509
Accumulated Depreciation	<u>109,546</u>	<u>108,174</u>
Capital assets, net	\$ <u>42,158</u>	<u>30,335</u>

## **Financial Contact**

The Commission's financial statements are designed to present users (citizens, taxpayers, state governments) with a general overview of the Commission's finances and to demonstrate the Commission's accountability. If you have questions about the report or need additional financial information, please contact the Commission's secretary at 355 South 400 East, Salt Lake City, UT 84111.

## **Basic Financial Statements**

# UPPER COLORADO RIVER COMMISSION

## Statement of Net Assets

June 30, 2005

	<u>Governmental Activities</u>
<b>ASSETS</b>	
Cash & cash equivalents	\$ 332,254
Receivable	290
Capital assets:	
Land	24,159
Building	68,847
Improvements other than building	2,207
Furniture & equipment	56,491
Less: accumulated depreciation	<u>(109,546)</u>
Total Assets	<u><u>374,702</u></u>
<b>LIABILITIES</b>	
Accounts payable	10,944
Retirement payable	6,384
Deferred revenue	-
Total current liabilities	<u>17,328</u>
Noncurrent Liabilities:	
Accrued compensated absences	13,702
Total noncurrent liabilities	<u>13,702</u>
Total Liabilities	<u><u>31,030</u></u>
<b>NET ASSETS</b>	
Invested in capital assets	42,158
Unrestricted	301,514
Total Net Assets	<u><u>343,672</u></u>
Total Liabilities and Net Assets	<u><u>\$ 374,702</u></u>

See accompanying notes to the basic financial statements

**UPPER COLORADO RIVER COMMISSION**  
**Statement of Activities**  
**For the year ended June 30, 2005**

		<b>Program Revenues</b>		<b>Net Revenue and Changes in Net Assets</b>
		<b>Charges for services</b>	<b>Operating Grants and Contributions</b>	
	<b><u>Expenses</u></b>			<b><u>Total</u></b>
Governmental Activities:				
General Administration	\$ <u>273,399</u>	<u>1,350</u>	<u>309,700</u>	<u>37,651</u>
Total Governmental Activities	\$ <u><u>273,399</u></u>	<u><u>1,350</u></u>	<u><u>309,700</u></u>	<u>37,651</u>
General Revenues:				
Interest				<u>10,058</u>
		Total General Revenues		<u>10,058</u>
		Change in Net Assets		47,709
Net Assets - Beginning of Year				<u>295,963</u>
Net Assets - Ending of Year			\$	<u><u>343,672</u></u>

See accompanying notes to the basic financial statements

# UPPER COLORADO RIVER COMMISSION

## Balance Sheet Governmental Funds June 30, 2005

	<u>General Fund</u>
<b>Assets</b>	
Petty cash	\$ 25
Cash in Bank	17,157
Utah public treasurers' investment pool	315,072
Receivable	<u>290</u>
Total Assets	<u><u>332,544</u></u>
<b>Liabilities</b>	
Accounts payable	10,944
Accrued Liabilities	6,384
Accrued benefits	1,492
Deferred revenue	<u>-</u>
Total Liabilities	<u><u>18,820</u></u>
<b>Fund Balance</b>	
Unreserved	<u><u>313,724</u></u>
Total Liabilities and Fund Balance	<u><u>\$ 332,544</u></u>

### Reconciliation of the Statement of Net Assets to the Balance Sheet

Amounts reported for governmental activities in the statement of net assets are different because:

Total fund balance reported above	\$ 313,724
Capital assets used in governmental activities are not financial resources and, therefore, are not reported in the funds	42,158
Compensated absences are not due and payable in the current period and therefore, are not reported in the funds	<u>(12,210)</u>
Net assets of governmental activities	<u><u>\$ 343,672</u></u>

See accompanying notes to the basic financial statements

# UPPER COLORADO RIVER COMMISSION

## Statement of Revenues, Expenditures and Changes

### in Fund Balance

### Governmental Funds

June 30, 2005

	<u>Budget</u>	<u>General Fund</u>	Variance Favorable (Unfavorable)
Revenues:			
Assessments	\$ 309,700	309,700	-
Interest	-	10,058	10,058
Waternews Subscriptions	<u>-</u>	<u>1,350</u>	<u>1,350</u>
Total Revenues	309,700	321,108	11,408
Expenditures:			
Personal services	261,100	231,484	29,616
Travel	17,000	13,850	3,150
Current operating	25,000	25,364	(364)
Capital Outlay	5,000	14,525	(9,525)
Contingencies	<u>5,000</u>	<u>-</u>	<u>5,000</u>
Total Expenditures	313,100	285,223	27,877
Excess of revenues over expenditures	(3,400)	35,885	39,285
Fund Balance - June 30, 2003	<u>277,839</u>	<u>277,839</u>	<u>-</u>
Fund Balance - June 30, 2004	<u>\$ 274,439</u>	<u>313,724</u>	<u>39,285</u>

#### Reconciliation of the statement of Revenues, Expenditures and Changes in Fund Balances of Governmental Funds to the Statement of Activities

Net change in fund balance (as reported above) \$ 35,885

Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives as depreciation expense. This is the amount by which capital outlays exceeded depreciation in the current period.

11,824

Change in net assets of governmental activities \$ 47,709

See accompanying notes to the basic financial statements

# UPPER COLORADO RIVER COMMISSION

## Notes to Basic Financial Statements

June 30, 2005

### NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

#### A. Reporting entity

The Commission was formed pursuant to the terms of the Upper Colorado River Basin Compact on October 11, 1948, and consented to by the Congress of the United States of America by Act on April 6, 1949, as an administrative agency representing the Upper Division States of the Colorado Basin, namely Colorado, New Mexico, Utah, and Wyoming. The Commission consists of one commissioner representing each of the four states and one representing the United States of America. The activities of the commission are conducted for the purpose of promoting and securing agricultural and industrial development of the Upper Basin's water resources.

The commission has no component units that are included with this report.

#### B. Basis of Presentation - Fund Accounting

The accounting system is organized and operated on a fund basis. A fund is defined as a fiscal and accounting entity with a self balancing set of accounts, which are segregated for the purpose of carrying on specific activities or attaining certain objectives in accordance with special regulations, restrictions or limitations.

The Commission's funds are grouped into two broad categories and one generic fund type for financial statement presentation purposes. The general fund is the only governmental fund. The Commission has no proprietary funds or fiduciary funds.

#### C. Basis of Accounting

##### GOVERNMENT WIDE FINANCIAL STATEMENTS

The statement of net assets and the statement of activities display information about the Commission. These statements distinguish between activities that governmental and that that are considered business-type activities.

The government-wide statements are prepared using the economic resources measurement focus and the accrual basis of accounting. This is the same approach used in the preparation of the proprietary fund financial statements but differs from the manner in which governmental fund financial statements are prepared. Therefore, governmental fund financial statements include a reconciliation with brief explanations to better identify the relationship between the government-wide statements and the statements for governmental funds.

The government-wide statement of activities presents a comparison between expenses and program revenues for the governmental activity. Direct expenses are those that are specifically associated with the service provided by the Commission. Program revenues include charges paid by recipients of the goods or services offered by the Commission and contributions that are restricted to meeting the operational or capital requirements of the Commission. Revenues which are not classified as program revenues are presented as general revenues. The comparison of program revenues and expenses identifies the extent to which the Commission is self financing.

# **UPPER COLORADO RIVER COMMISSION**

## **Notes to Basic Financial Statements (continued)**

**June 30, 2005**

### **FUND FINANCIAL STATEMENTS**

Fund financial statements report detailed information about the Commission. The focus of governmental financial statements is on major funds rather than reporting funds by type. Each major fund is presented in a separate column. The only major fund is the general fund with no other nonmajor funds.

### **GOVERNMENTAL FUNDS**

The Commission accounts its general fund using the modified accrual basis of accounting and the current financial resources measurement focus. Under this basis revenues are recognized in the accounting period in which they become measurable and available. Expenditures are recognized in the accounting period in which the fund liability is incurred, if measurable.

#### **Revenue Recognition**

In applying the susceptible to accrual concept under the modified accrual basis, the following revenue sources are deemed both measurable and available (i.e., collectible within the current year or within two months of year-end and available to pay obligations of the current period). This includes interest earnings and waternews subscriptions. Assessments from the four states are recorded as revenue in the year assessed to pay for operations or if received in advance, deferred until the year assessed.

#### **Expenditure Recognition**

The measurement focus of governmental fund accounting is on decreases in net financial resources (expenditures) rather than expenses. Most expenditures are measurable and are recorded when the related fund liability is incurred. Allocations of costs, such as depreciation, are not recognized in the governmental funds.

#### **Capital Assets and Depreciation**

All assets of the Commission are considered general capital assets. When purchased, such assets are recorded as expenditures in the governmental funds and capitalized (recorded and accounted for) in the General Capital Asset Account Group. The valuation basis for general capital assets are historical cost.

Depreciation of capital assets is computed and recorded by the straight-line method. Estimated useful lives of the various classes of depreciable capital assets are as follows: buildings, 30 years; improvements, 10 to 15 years; furniture and equipment, 5 to 15 years.

#### **Unpaid Compensated Absences**

According to Commission policy each employee accrues annual leave based on years of service with the commission. Employees may accumulate a maximum of 30 days of unused annual leave, which is paid in cash upon termination of employment. The Commission's secretary may grant additional carryover to employees provided that: (1) the employee requests the carryover in writing prior to June 30, and (2) the employee uses the additional carryover within 90 days of the start of the fiscal year.

# UPPER COLORADO RIVER COMMISSION

## Notes to Basic Financial Statements (continued)

June 30, 2005

The Obligation for Compensated Absences has been broken down into two components; current and non-current. The current portion is classified as part of the general fund and is an estimate of the amounts that will be paid within the next operating year. The non-current portion is maintained separately and represents a reconciling item between the fund and government-wide presentations.

### Net Assets

Net assets is the difference between assets and liabilities. Net assets invested in capital assets, are capital assets less accumulated depreciation. The commission has no debt related to the acquisition of capital assets.

## NOTE 2 COMPLIANCE AND ACCOUNTABILITY

### Budgets

Annual budgets are prepared on the modified accrual basis of accounting and adopted as required by the compact. The Commission approves the annual budget in total and by major sub-items as identified in the statement of revenues, expenditures and changes in fund balance - budget and actual. The Executive Director has authority to transfer budget accounts within the sub-items with Commissioner approval required to transfer monies between expenditure categories.

### Accounting and Reporting

The commission is not required to report to any individual state or federal agency. Financial reports are given to each commissioner and is review by them. The commission is exempt from federal income tax reporting under 501(c) (1) of the internal revenue code.

## NOTE 3 DETAIL NOTES ON TRANSACTION ACCOUNTS

### Cash and Cash Equivalents

The Commissioners have authorized the Commission to deposit funds in demand accounts at First Security Bank and deposit funds with the Utah Public Treasurers' Investment Pool.

Cash in bank consisted of the following at June 30, 2005

Checking	\$	6,077
Payroll		3,196
Retirement		7,884
	\$	<u>17,157</u>

Utah Public Treasurers' Investment Pool	\$	<u>315,072</u>
--	----	----------------

At year end, the carrying amount of the Commission's cash deposits was \$17,157 and the balance per the bank statements was \$25,219. All deposits are fully insured.

The public treasurers fund is a state pooled investment account and bears market risk like any investment. Amounts in the fund are carried at fair value which approximates the cost of the investments.

# UPPER COLORADO RIVER COMMISSION

## Notes to Basic Financial Statements (continued)

June 30, 2005

### Capital Assets

Capital asset activity for the year ended June 30, 2005, is as follows:

	Balance at June 30, 2004	Additions	Disposals	Balance at June 30, 2005
Land	\$ 24,159	-	-	24,159
Building	66,019	2,828	-	68,847
Improvements	2,207	-	-	2,207
Furniture & Equipment	46,123	10,368	-	56,491
Totals at historical costs	138,508	13,196	-	151,704
Less accumulated depreciation				
Building	59,843	607	-	60,450
Improvements	2,207	-	-	2,207
Furniture & Equipment	46,124	765	-	46,889
Total accumulated depreciation	108,174	1,372	-	109,546
Capital assets, net	\$ 30,334	11,824	-	42,158

### NOTE 4 OTHER NOTES

#### Employee Retirement Plan

The Commission's employee pension plan is a 401(K) defined contribution plan which covers all of the present employees. The Commission contributes 7% of the employees' gross salaries. In addition, the Commission will match contributions made by employees up to a maximum of 3%. Accordingly, the maximum allowable contribution by the Commission is 10%. The employees are allowed to contribute up to the maximum allowed by law. The employer's share of the pension plan contribution for the year ended June 30, 2005 was \$17,241, which includes \$450 of administrative costs.

#### Risk Management

The commission is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; and natural disasters for which the government carries commercial insurance.

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## **Supplemental Schedules**

**UPPER COLORADO RIVER COMMISSION**  
**Supplemental Schedule of Cash Receipts**  
**and Disbursements**  
**Year ended June 30, 2005**

Cash at June 30, 2004		\$	329,031
Cash Receipts:			
Assessments	274,860		
Interest	10,058		
Waternews Subscriptions	<u>1,350</u>		
			286,268
Cash Disbursements:			
Personal Services	233,811		
Travel	17,747		
Current Operating	26,408		
Capital Outlay	5,079		
Contingency	<u>0</u>		
			<u>283,045</u>
Cash at June 30, 2005		\$	<u><u>332,254</u></u>

**UPPER COLORADO RIVER COMMISSION**  
**Detail of Personal Services and Current Operating**  
**Expenditures - Budget to Actual (Accrual Basis)**  
**Year ended June 30, 2005**

	<u>Budget</u>	<u>Actual</u>	Favorable (Unfavorable) <u>Variance</u>
<b>Summary of Personal Services</b>			
<b><u>with Budget Comparisons</u></b>			
Executive director	\$ 85,000	85,000	0
Administrative secretary	27,000	27,000	0
General Counsel	69,500	69,500	0
Engineering salary	30,000	4,359	25,641
Social security	13,900	14,027	(127)
Pension fund contributions	18,600	17,241	1,359
Employee medical Insurance	16,200	13,457	2,743
Janitorial	900	900	0
	<u>\$ 261,100</u>	<u>231,484</u>	<u>29,616</u>

**Summary of Current Operating**  
**Expenditures with Budget Total Comparison**

Audit and accounting	2,675	
Building repair & maintenance	1,177	
Insurance	2,070	
Library	4,603	
Meetings, including reporter	486	
Memberships and registrations	563	
Office supplies and postage	2,734	
Printing	2,147	
Telephone	4,880	
Training	0	
Utilities	4,029	
	<u>\$ 25,000</u>	<u>25,364</u> <u>(364)</u>

Current operating expenses are budgeted in total, thus only total compared

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## **APPENDIX B**

### **BUDGET**

**Fiscal Year Ending June 30, 2007**

APPROVED FY 07 BUDGET  
Upper Colorado River Commission  
Fiscal Year ending June 30, 2007

Personal Services

	As Approved 6/29/2006
Administrative Salaries	
Executive Director	91,928.00
Administrative Secretary	29,200.00
Professional Salaries	
General Counsel	75,165.00
Staff Engineer/Cons. Contract	36,000.00
Janitor	1,250.00
Pension	20,080.00
Social Security	15,017.00
Health Insurance	19,600.00
Sub Total Personnel	<u>288,240.00</u>
<u>Travel</u>	19,000.00
<u>Current Expenses</u>	28,600.00
<u>Capital Outlay</u>	4,000.00
<u>Contingencies</u>	5,000.00
Total	<u>344,840.00</u>

2007 STATE ASSESSMENTS	319,000.00	(No Increase)
Colorado	51.75%	165,080.00
New Mexico	11.25%	35,890.00
Utah	23.00%	73,370.00
Wyoming	14.00%	44,660.00

Assumed 3% increase in salaries and actual estimates for current expense and other costs compared to FY06.  
A tentative increase in the State Assessments of 3% for FY08 was agreed to for planning purposes.

## **APPENDIX C**

### **RESOLUTIONS**

FINDINGS OF FACT AND  
RESOLUTION  
of the  
UPPER COLORADO RIVER COMMISSION  
April 18, 2005

WHEREAS, the Upper Colorado River Commission was created by the Upper Colorado River Basin Compact between the States of Arizona, Colorado, New Mexico, Utah and Wyoming on October 11, 1948, consented to by Congress by the Act of April 6, 1949 (63 Stat. 31, Chapter 48); and

WHEREAS, the Commission is authorized and directed by Article VIII of the Compact to perform certain functions in the administration of the Colorado River Basin above Lee Ferry, Arizona; and

WHEREAS, by agreement of the seven Colorado River Basin States, the 2005 Annual Operating Plan provides for a mid-year review in April; and

WHEREAS, the Secretary of the Interior is charged by law with the actual operation of Glen Canyon Dam and the storage and release of water therefrom, subject to the Colorado River Compact and other applicable law; and

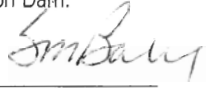
WHEREAS, the Commission finds that basin conditions support the following Findings of Fact and Recommendations to the Secretary of the Interior concerning the operation of Glen Canyon Dam in 2005:


1. The last five years commencing in October of 1999 have constituted the most severe drought in the recorded history of the Colorado River Basin, resulting in unprecedented low levels of storage in Upper Basin reservoirs, especially Lake Powell.
2. As of April 14, 2005, the active storage in Lake Powell stands at 8.03 million acre-feet (maf), or 33% of live storage capacity. This quantity is substantially below that level deemed 602(a) storage, pursuant to 43 U.S.C. 618(a)(3), which has been established by the Secretary at 14.85 maf.
3. As of April 15, 2005, the snow pack and resulting projected runoff in the Upper Basin is only slightly above normal. Projected runoff in the northern Upper Basin tributaries is below average, ranging from 80 to 86 percent of normal snow pack and forecasted runoff. Upper Basin soil moisture, ground water and reservoirs all must recover from the preceding five drought years. Thus, there is still a possibility that runoff in the Upper Basin will be below normal.
4. The Colorado River Basin below Lee Ferry has experienced unprecedented precipitation, resulting in an abundance of water being available to the Colorado River mainstem and its tributaries below Lee Ferry. As a result, most Lower Basin tributary storage reservoirs are full. Storage in Lake Mead has increased, and as of April 14, 2005 stands at 16.1 maf, or 62% of live storage capacity.
5. The flow of the Colorado River at Lee Ferry during the immediate past 10 years (1995-2004) has been 102.5 maf.

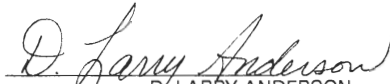
NOW, THEREFORE, BE IT RESOLVED by the Upper Colorado River Commission that, considering the current conditions outlined above, the Commission recommends that prudent water management would require holding as much water as reasonably possible in Upper Basin reservoirs during water year 2005.

BE IT FURTHER RESOLVED by the Upper Colorado River Commission that this Resolution be transmitted to the Secretary of the Interior for consideration in the operation of the Colorado River Reservoirs, and specifically operations at Glen Canyon Dam.

  
L. RICHARD BRATTON, Chairman  
United States of America

  
SCOTT M. BALCOMB  
State of Colorado

  
PHILIP B. MUTZ  
State of New Mexico

  
D. LARRY ANDERSON  
State of Utah

  
PATRICK T. TYRRELL  
State of Wyoming

RESOLUTION  
of  
UPPER COLORADO RIVER COMMISSION

Honoring Philip B. Mutz

WHEREAS, Philip B. Mutz worked for more than 30 years for the New Mexico Interstate Stream Commission, serving during that time as Interstate Stream Engineer and State Engineer; and

WHEREAS, Philip B. Mutz served on the Engineering Committee of the Upper Colorado River Commission and as Alternate Commissioner for the State of New Mexico for 10 years; and


WHEREAS, Philip B. Mutz served as New Mexico's Commissioner on the Upper Colorado River Commission for more than 14 years and as Chairman of the Commission's Budget Committee; and

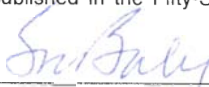
WHEREAS, Philip B. Mutz has rendered long, outstanding, meritorious service to the Upper Colorado River Commission and the State of New Mexico in negotiations relating to the conservation, utilization and development of the water and related land resources of the Upper Colorado River Basin; and

WHEREAS, Philip B. Mutz always ably and honorably performed his duties with the Commission with a deep respect for the integrity and abilities of his fellow Commissioners, Committees members, Commission staff and other interested parties with whom he was associated in the affairs of the Upper Colorado River Commission:

NOW, THEREFORE, BE IT RESOLVED that the Upper Colorado River Commission, at its Meeting in Farmington, New Mexico on June 29, 2005, expresses the gratitude and appreciation of the Commission and its staff for the untiring service and wise counsel rendered for over 24 years by Philip B. Mutz as a member of the Engineering Committee, Alternate Commissioner for the State of New Mexico, Chairman of the Budget Committee and Upper Colorado River Commissioner for the State of New Mexico and that the Upper Colorado River Commission, its advisers and staff sincerely wish him, his wife Rose and their family the best of health, happiness and prosperity in all their future endeavors;

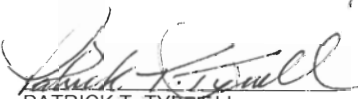
BE IT FURTHER RESOLVED that the Executive Director of the Commission is directed to transmit copies of this unanimously adopted resolution to Mr. and Mrs. Philip B. Mutz and the Governor of the State of New Mexico and cause it to be published in the Fifty-Seventh Annual Report of the Upper Colorado River Commission.

  
L. RICHARD BRATTON, Chairman  
United States of America

  
SCOTT M. BALCOMB  
State of Colorado

  
State of New Mexico

  
D. LARRY ANDERSON  
State of Utah

  
PATRICK T. TYRRELL  
State of Wyoming

**APPENDIX D**

**TRANSMOUNTAIN DIVERSIONS**

TRANSMOUNTAIN DIVERSIONS FROM  
COLORADO RIVER BASIN IN COLORADO  
1991-2005

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2,005 AVERAGE
TO PLATTE RIVER BASIN														
Grand River Ditch	21,360	24,770	17,870	19,808	23,260	17,948	21,140	19,440	9,363	8,326	9,390	2,541	7,376	21,217
Eureka Ditch	212	95	0	180	0	0	0	0	0	0	0	0	0	0
Alva B. Adams Tunnel	198,300	206,400	233,200	238,500	207,300	229,000	203,800	165,840	118,960	131,931	268,000	88,571	122,770	162,911
Berthoud Pass Ditch	1,010	1,260	874	815	1,530	2,610	1,570	0	0	268	244	298	202	801
Morfat Water Tunnel	49,890	34,470	43,310	24,220	51,050	50,860	35,620	38,530	27,454	34,353	35,070	36,510	30,862	56,274
Boreas Pass Ditch	175	334	83	0	209	282	178	249	62	95	29	86	21	133
Vidler Tunnel	1,150	1,150	465	760	268	420	425	580	167	186	320	220	194	518
Harold D. Roberts Tunnel	85,530	124,100	73,890	52,176	36,920	53,480	30,550	40,380	47,377	53,263	130,500	36,027	45,699	59,233
Straight Creek Tunnel	363	408	330	320	399	393	295	386	190	163	225	183	164	276
TO ARKANSAS RIVER BASIN														
Hoosier Pass Tunnel	11,570	11,186	9,188	4,532	12,306	8,312	10,400	10,115	5,226	5,294	3,400	3,671	3,266	10,034
Columbine Ditch	1,610	2,478	1,470	2,390	2,500	1,730	1,669	933	1,740	1,790	780	1,940	1,210	1,582
Ewing Ditch	934	1,622	796	1,410	1,440	1,350	759	618	1,020	936	192	1,030	499	784
Wurtz Ditch	2,173	4,031	2,073	4,241	4,210	4,180	2,183	1,230	2,600	2,230	647	2,400	1,550	2,300
Homestake Tunnel	26,910	28,110	24,230	23,505	38,690	37,130	23,316	31,420	24,140	35,770	26,510	9,930	23,150	23,920
Twin Lakes Tunnel	41,970	62,664	42,850	33,120	34,850	34,190	47,441	16,580	42,060	45,650	20,570	45,240	35,550	50,160
Charles H. Boustead Tunnel	57,060	88,740	55,040	91,300	38,540	79,380	53,986	43,140	50,690	50,530	15,780	57,999	28,590	55,810
Busk - Ivanhoe Tunnel	5,210	4,980	4,100	5,817	2,450	4,640	4,174	5,070	5,240	5,330	2,680	5,090	5,270	5,170
Larkspur Ditch	205	334	146	116	60	185	67	6	7	63	0	0	76	171
TO RIO GRANDE BASIN														
Tarbell Ditch	344	109	207	68	368	753	830	1,700	750	532	0	330	693	1,120
Tabor Ditch	684	1,060	639	1,240	375	1,340	1,010	1,430	495	254	87	323	250	1,050
Treasure Pass Ditch	63	113	94	0	15	245	223	367	70	29	0	185	150	337
Don La Font Ditches No. 1 & 2	480	0	364	50	112	64	0	0	10	0	0	0	0	54
Williams Creek - Squaw Pass Ditch	475	441	279	374	124	421	289	746	230	199	91	226	200	632
Pine River - Weminuche Pass Ditch	520	246	172	672	42	1,050	396	1,100	203	212	0	103	100	2,710
Weminuche Pass Ditch	2,630	0	0	0	0	1,090	459	3,400	0	0	0	64	50	508
TOTAL	510,828	599,101	511,670	505,614	457,018	531,053	440,780	383,260	338,054	377,404	514,515	292,967	307,892	457,738
410,068														

TRANSMOUNTAIN DIVERSIONS FROM COLORADO RIVER BASIN  
IN COLORADO TO RIO GRANDE BASIN IN NEW MEXICO  
1991-2004

San Juan-Chama Diversions	87,090	98,800	82,300	85,100	57,239	141,174	96,701	118,901	42,741	110,582	6,310	62,707	84,884	152,624
87,386														

TRANSMOUNTAIN DIVERSIONS FROM  
COLORADO RIVER BASIN IN UTAH  
1991-2004

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	10 YEAR AVERAGE
TO GREAT BASIN														2,005
Broadbent Supply Ditch (Woming)	1,525	4,474	2,049	2,445	2,830	2,009	1,985	1,617	1,844	1,959	2,892	1,101	1,250	1,101
Fairview Tunnel	1,808	4,007	1,004	2,629	2,132	3,399	2,395	2,444	1,648	3,049	1,182	2,459	1,571	2,345
Ephraim Tunnel	1,632	3,391	1,334	2,670	2,824	2,571	1,519	798	1,066	1,819	2,804	2,862	3,691	4,874
Spring City Tunnel	63,975	49,243	18,587	11,933	11,891	12,385	5,006	16,863	3,707	3,954	46,889	42,715	33,861	75,670
Central Utah Project, Bonneville Creek Ditch	369	1,051	694	825	590	972	800	740	0	194	0	0	0	0
Hobble Creek Ditch	2,041	2,171	962	953	1,379	1,706	1,554	667	1,239	0	0	0	0	0
Strawberry-Willow Creek Ditch	72,872	51,484	74,190	36,768	51,934	41,576	52,821	61,297	76,636	80,873	69,419	58,570	62,962	49,824
Strawberry Water Users Assoc.	15,678	35,648	22,817	39,859	31,895	39,446	30,746	33,429	28,452	28,739	20,767	28,857	27,278	29,008
Duchesne Tunnel														29,862
TOTAL	159,900	151,469	121,637	98,082	105,475	104,064	96,826	117,855	114,592	120,587	145,440	139,577	132,350	166,143

TRANSMOUNTAIN DIVERSIONS FROM GREAT BASIN  
IN UTAH TO COLORADO RIVER BASIN IN UTAH  
1991-2004

Tropic and East Fork Canal	5,325	6,509	4,801	7,022	4,542	5,442	6,922	6,699	3,413	6,153	2,333	2,712	2,431	4,515
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TRANSMOUNTAIN DIVERSIONS FROM COLORADO RIVER  
BASIN TO NORTH PLATTE BASIN IN WYOMING  
1991-2004

	12,450	23,422	14,405	12,144	17,014	14,119	14,870	13,252	15,327	12,563	6,668	16,745	15,000	17,454
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TRANSMOUNTAIN DIVERSIONS FROM  
COLORADO RIVER BASIN  
1991-2004

TOTAL	768,043	869,383	728,312	697,018	635,304	788,068	645,355	629,669	510,401	618,083	673,700	512,384	540,795	792,559
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Based on preliminary streamflow records obtained from U. S. Bureau of Reclamation, U. S. Geological Survey, Central Utah Water Conservancy District, Colorado Division of Water Resources, New Mexico Interstate Stream Commission, and Wyoming State Engineer's Office - subject to revision. Streamgaging of the following small transmountain divlin 1959. Flows are estimated and add to total on line 93:

Candland Ditch - 200 acre-feet, Horseshoe Tunnel - 600 acre-feet, Larsen Tunnel - 690 acre-feet, Coal Fork Ditch - 260 acre-feet, Twin Creek Tunnel - 220 acre-feet, Cedar Creek Tunnel - 340 acre-feet, Black Canyon Ditch - 290 acre-feet, Reeder Ditch - 250 acre-feet, Madsen Ditch - 40 acre-feet, and John August Ditch - 200 acre-feet. These diversions are from the San Rafael River in the Colorado River Basin to the Great Basin in Utah and total about 3,100 acre-feet annually.

Does not include diversions for enlargement Continental Divide Ditch which services 437 acres or Ranger Ditch which services 391 acres.

Neither ditch is gaged, and suitable estimates of diversion amounts are currently unavailable.

The total diversion is the sum of all diversions except Tropic and East Fork Canal which imports water to the Colorado River Basin.

This import is subtracted from the sum of exports.

\* Part of the Strawberry Reservoir to Bonneville Basin trans-mountain diversions

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