

Resource Management

Reclamation's mission statement declares that it is "to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public." Proper resource management includes an appropriate amount of public involvement and environmental analysis that results in a comprehensive plan to detail future goals, objectives, and agency direction for managing and allocating Federal resources for the benefit of Reclamation project beneficiaries and the American public. The following are examples of FY 2008 resource management accomplishments.

On December 13, 2007, Secretary of the Interior Dirk Kempthorne signed a Record of Decision implementing new, interim guidelines for operating Lakes Mead and Powell. With these guidelines in place, the Secretary of the Interior will be able to provide water users and managers in the Colorado River Basin, particularly the lower basin, a greater degree of certainty regarding the amount of annual water deliveries in future years, particularly under drought and low reservoir conditions.

Completion of all the actions required to enforce the Arizona Water Settlements Act on December 14, 2007, resolved long-standing water rights disputes and brought certainty to Arizona cities and communities planning their future. Among other actions, it allows 197,500 acre-feet of non-Indian agricultural priority Central Arizona Project water to become available to the Secretary for Federal purposes. The Gila River Indian Community Settlement Agreement culminated more than 20 years of negotiation, consultation, and collaboration to resolve the Gila River Indian Community's claims of rights to 1.5 million acre-feet of Gila River water; the settlement agreement resolves nearly 100 years of conflict between the Gila River Indian Community and its non-Indian neighbors.



Secretary of the Interior Dirk Kempthorne signed an historic decision that will implement innovative strategies for management of the Colorado River. "This is the most important agreement among the seven basin States since the original Colorado River Compact of 1922," said the Secretary.



Glen Canyon jet bypass tubes releasing water during the high-flow experiment, which was also intended to supply sand needed to protect archaeological sites and create backwaters used by young native fishes, particularly endangered humpback chub.



Drop 2 Storage Reservoir Project will provide more capacity for water storage in the Colorado River below Parker Dam.

Reclamation completed an environmental assessment and released a Finding of No Significant Impact on February 29, 2008, supported by the Secretary, who authorized proceeding with a 60-hour, high-flow experiment in March and a 5-year fall steady-flow experiment at Glen Canyon Dam. On March 5, 2008, Secretary Kempthorne opened the jet bypass tubes at Glen Canyon Dam to release about 41,500 cubic feet per second of Colorado River water into the Grand Canyon. The high-flow experiment at Glen Canyon Dam incorporated other considerations, such as recreation, fish and wildlife, and the environment into Reclamation's water and power operations.

Water storage in the Colorado River below Parker Dam is limited. The Drop 2 Storage Reservoir Project, an 8,000-acre-foot capacity, off-stream regulatory storage project north of the All-American Canal about 25 miles west of Yuma, Arizona, will capture and temporarily store Colorado River water that cannot now be stored, conserving an average of 70,000 acre-feet of water annually and providing more operational flexibility and storage capacity in the system. Reclamation awarded a \$98.3 million construction contract for the project in August 2008 and will manage construction, scheduled for completion in 2010.

Three major lower basin water entities are advancing funding for project construction, operation, and maintenance. Each of these entities will receive a specific amount of water credits for funding a project to conserve water, and this water will be available to them from Lake Mead until 2036. At the end of this period, the water conserved each year will become "system water" available to all Lower Basin users, helping avoid shortage declarations in the Lower Basin.

A primary objective of the Lease Lands Program, administered by Reclamation under a cooperative agreement with the U.S. Fish and Wildlife Service (FWS), is to provide a commercial farming program that benefits both agriculture and wildlife. On March 5, 2008, Reclamation held a public opening of bids for 27 parcels (4,060 acres) of Federal lease land located on national wildlife

refuges in the Lower Klamath area in Oregon and the Tule Lake area in California. A record 175 bids were received, and a record total of \$1,021,482.50 was bid on 19 parcels. Most funds generated by the program go into the Reclamation Fund, administered by the Congress, and are used to support current projects and build new facilities. The remaining funds support local counties and irrigation districts that provide water service to the lease lands. Farmers and wildlife benefit from the program.

Generating Hydropower

One of Reclamation's top priorities is generating hydropower in a safe, reliable, and efficient manner. Reclamation's hydropower facilities serve as some of the West's most important electrical resources, with 58 hydropower plants with a capacity of 14,859 megawatts (MW). Reclamation's powerplants provide flexible, renewable, and reliable hydropower throughout the Western United States, while also providing the reserve and blackstart capacity for the Western United States.

Reclamation's powerplants generate over 40 million MWh of hydropower, enough to meet the annual needs of over 5 million households. Further, Reclamation's facilities help to avoid producing approximately 51 million pounds of carbon dioxide that would have been produced by fossil fuel powerplants.



The energy produced by Reclamation facilities is the energy equivalent of replacing more than 80 million barrels of crude oil or about 48 billion pounds of coal.



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The hydropower Reclamation produces is used for project purposes and is also provided to the Power Marketing Administration for sale to its customers, with an annual value to its customers of almost \$1 billion. This offsets power that would otherwise cost over \$3 billion as estimated by the Energy Information Administration, which is a significant benefit to the Nation's economy.

Operating, Maintaining, and Upgrading Facilities to Generate Power

Although hydropower facilities and the attendant water storage facilities have high initial investment costs, they can have 100-year life expectancies with proper maintenance practices and replacement of generating components. Reclamation works diligently to reduce the cost of generating hydropower, while ensuring the long-term viability of our facilities. In FY 2008, through operations and maintenance (O&M) practices, Reclamation:

- Identified and implemented timely maintenance, replacements, upgrades, necessary modification, and modernizations of its power facilities.
- Improved reliability by identifying areas of concern for maintaining reliability such as penstocks conditions assessments, transformer testing, turbine inspections, and generator winding insulation condition monitoring.
- Assembled baseline data for the condition of all Reclamation powerplant equipment.
- Worked with other utilities in consolidating a condition rating program to help prioritize equipment replacement.

Reclamation has a partnership agreement with the USACE to promote a long-term working relationship and collaborate on efforts to improve reliability of power facilities. In particular, the agreement encourages the two agencies to share needed technical expertise, improve resource management, and leverage each agency's limited resources to improve public services and make more efficient use of limited public funds.

Three major efficiency improvement projects moved forward at Reclamation's lower Colorado River dams. At Hoover Dam, where a conservative estimate of the value achieved from improving the efficiency of a generating unit is \$290,000 per unit per year, a major turbine overhaul program that began in October 1999 is

restoring older machinery to a more efficient operating condition. A \$13 million project, begun in 2007, to modernize the hydroelectric unit controls at Hoover, Davis, and Parker Dams replaces old, analog-unit controls with new, digitally controlled equipment, including unit controls, protective relays, voltage regulators, and digital governor conversion equipment. This project is scheduled for completion in 2012. An approximate estimate of the payback period for this project investment is 3 years.

Evaluating Drought Impacts on Hydropower Generation

The ongoing drought in the Western United States had a significant impact on Reclamation's hydropower production. In spite of above-average snowpack, effects of multiple years of drought and low inflow remained visible at Lake Powell, which in 2005 reached a level 145 feet below full pool. The storage elevation increased in FY 2008 by 45 feet due to runoff from the significant snowpack.

While Lake Powell has somewhat recovered, Lake Mead's elevation dropped. Reclamation is working with Hoover powerplant customers to identify the benefits associated with runners that operate at lower lake elevations present at Lake Mead.

FY 2008 Highlights

Reclamation leads the hydropower industry in low costs and high reliability. Reclamation strives to keep generators at their peak by rehabilitating or replacing older models.

Reclamation has had an active rehabilitation program since 1978 and has improved operating equipment, including installing more efficient turbine runners at Grand Coulee Third Powerhouse, Glen Canyon Powerplant, and Flaming Gorge Powerplant. At Hoover, Glen Canyon, and Flaming Gorge Powerplants, wicket gate replacements added 100 MW of capacity to the powerplants. Wicket gates form a ring of louvers around the turbine which can be opened and closed like venetian blinds to control the water flow.



The Davis Dam Powerplant is linked with a Federal power distribution system operated by the Western Area Power Administration. The total system consists of 2,100 miles of high-voltage transmission lines serving 43 power substations in Arizona, Nevada, and California.



At Hoover, Glen Canyon, and Flaming Gorge, wicket gate replacements added 100 MW of capacity to the powerplants.

Reclamation is making an effort to comply with new mandatory reliability standards resulting from the Energy Policy Act of 2005. Reclamation reported compliance with 43 of 49 North American Electric Reliability Corporation (NERC) reliability requirements. In partnership with other agencies throughout the country, Reclamation developed and submitted mitigation plans to the Western Electricity Coordinating Council (WECC) that will achieve compliance with all 49 requirements by December 2009. WECC is the largest and most diverse of the eight NERC regional councils.

Future Challenges and Goals

Reclamation's hydropower program improved performance and optimized generation, consistent with project purposes. Reclamation conducts frequent assessments of O&M effectiveness at all of our powerplants and major pumping plants through formal reviews. As Reclamation's hydropower infrastructure ages, these assessments become even more important in maintaining reliable facilities. Planning, scheduling, and funding the maintenance and rehabilitation of these aging infrastructures will challenge Reclamation and its customers.

New, industry-wide, mandatory reliability standards will challenge Reclamation to undergo regular compliance activities. In addition, Reclamation expects to be subject to formal audits by WECC, developing Reclamation-wide groups to ensure that we can consistently demonstrate compliance.

The ongoing drought in the Western United States will have a significant impact on Reclamation's hydropower production at a time of increasing demands for energy and a decreasing ability to produce power.

Providing Other Programs and Benefits

In addition to water delivery and power generation, Reclamation is also responsible for maintaining and safeguarding its facilities, as well as other projects authorized by the Congress, which provide benefits for recreation, fish and wildlife, and the environment.

Security, Safety, and Law Enforcement Programs

Reclamation's Security, Safety, and Law Enforcement Programs provide integrated protection of Reclamation's facilities, critical information, and, more importantly, the employees, contractors, visitors, and public located at or near Reclamation facilities. The program reduces security-related risks through a combination of preparedness, prevention, protection, and response.

FY 2008 Highlights

In FY 2008, Reclamation implemented security improvements at several critical infrastructure facilities. We completed installations of integrated security systems at three National Critical Infrastructure dams—Shasta, Hoover, and Glen Canyon—and implemented designs and installations at Folsom Dam and several other critical facilities. Security enhancements included barriers,



Reclamation installed integrated security systems at Folsom Dam.

video surveillance, intrusion detection, access control, communication systems, and guard forces.

In FY 2008, we completed a 2-year pilot of a long-term Security Risk Assessment Program. Security risk assessments determine the threats, vulnerabilities, and consequences to a facility and help determine how to protect a facility based on that risk. The program consists of recurring Comprehensive Security Reviews and Periodic Security Reviews at Reclamation's most critical facilities.

Reclamation worked with other Federal agencies and laboratories to enhance understanding of the effects of terrorist activities on dams and related resources. Reclamation worked closely with the Department of Homeland Security and other dam-sector agencies to implement sector-specific plans for national infrastructure protection, research and development, and information sharing. We also shared best practices for critical infrastructure and key asset protection and vulnerability assessment methodologies.

Reclamation implemented Homeland Security Presidential Directive 12, which established a Government-wide policy for a common identification standard for Federal employees and contractors and worked closely with other Interior bureaus to develop the policies and procedures for issuing and managing personal identity verification cards. We also implemented two new Interior Government Performance and Results Act (GPRA) performance measures—percent of facilities meeting Interior's minimum physical security guidelines and percent of identified physical security vulnerabilities mitigated at Interior facilities.

Reclamation collected, recorded, and investigated information on security and law enforcement related incidents, including suspicious activities. This information is directly shared with dam and power transmission members and with appropriate intelligence agencies. Reclamation special agents and intelligence analysts also completed threat assessments and produced intelligence products to protect Reclamation and associated water and power transmission infrastructure.

In FY 2007 and 2008, a National Academy of Science committee conducted an assessment of Reclamation's Security Program to determine Reclamation's level of preparedness to deter, respond to, and recover from threats to its physical infrastructure and to the people who use and manage it. An assessment report was released

to the public on August 19, 2008; details of this report can be found at http://books.nap.edu/catalog.php?record_id=12463.

Future Challenges and Goals

On May 8, 2008, the Consolidated Natural Resources Act of 2008 (Public Law 110-229) was signed into law. Section 513 is titled “Bureau of Reclamation Site Security,” and it includes provisions for treating Reclamation-site security costs, transparency and collaboration, and an annual report to the Congress. Throughout the end of FY 2008 and 2009, Reclamation will work with project beneficiaries to develop policies and procedures for implementing those provisions.

Reclamation will continue to work closely with our managing partners, the Department of Homeland Security, other dam-sector agencies, national laboratories, the Federal Bureau of Investigation, and other Federal, State, and local agencies in implementing effective security measures and securing the key resources and critical infrastructure for which Reclamation is responsible.



Boat barriers at Folsom Dam.

Dam Safety

Dam safety activities are directly related to Reclamation’s priority to ensure reliable and efficient delivery of water and hydropower. The objectives of our Dam Safety Program are to ensure that Reclamation facilities do not cause unreasonable risks to people, property, or the environment and to take appropriate action to reduce and manage risks in an efficient and cost-effective manner.

Reclamation is responsible for 479 dams and dikes that form a significant part of the water resources infrastructure for the 17 Western States. As these structures age, concern increases about their satisfactory performance. The 371 structures that could cause loss of human life or other significant losses through failure or misoperation are included in the Dam Safety Program. The following are examples of our Dam Safety achievements in FY 2008.

Seepage was discovered at A.V. Watkins Dam, located north of Ogden, Utah, in mid-November 2006. Immediate emergency remedial actions were taken to avert an uncontrolled release of the reservoir and potential failure of the dam. In March 2007, the Commissioner authorized construction of an upstream berm, replacement of the toe drain at the bottom of the slope, and extensive geologic investigations. In January 2008, the alternative identified in a Corrective Action Study was addressed in the *Safety of Dams Modification Report*. Work began in July 2008 to construct an underground cement-bentonite cutoff wall.

In a collaborative response to concerns over the outlet capacity at Folsom Dam, an unprecedented Federal, State, and local partnership was formed in 2006. Reclamation, together with USACE, the Central Valley Board, and the Sacramento Area Flood Control Agency, joined forces to develop a new plan for an auxiliary spillway near Folsom Dam. This joint Federal project allows for larger water releases earlier in the year, reduces the original total construction time by 7 years, and saves approximately \$1 billion in total costs. It will also address dam safety issues posed by hydrologic, seismic, and seepage events. When completed, the Folsom Dam Joint Federal Project will provide the Sacramento area with a protection system against a 200-year flood—a flood that is expected to be equaled or exceeded on average once every 200 years.

Folsom Dam Joint Federal Project (Phase 1, April 2008) will provide the Sacramento area with a protection system against a 200-year flood.



FY 2008 Highlights

This year, we completed 40 comprehensive facility reviews. We completed risk reduction activities at Gibson Dam in Montana; continued ongoing risk reduction actions at Folsom Dam in

California, Deer Creek Dam in Utah, Deer Flat Dam in Idaho, Scofield Dam in Utah, Norton Dam in Kansas, and Stony Gorge Dam in California; and began risk reduction actions at A.V. Watkins Dam in Utah.

Future Challenges and Goals

Reclamation has many multiyear contracts in place for the Dam Safety Program. The dam safety construction contracts are a major part of our continuing efforts to ensure that our structures do not present a safety risk to the public.

Reclamation's Phase I excavation for the Joint Federal Project Auxiliary Spillway at Folsom Dam is substantially complete. The contract for Phase II excavation was awarded at the end of FY 2008, with construction to begin in early FY 2009. To date, construction activities are within the planned schedule and budget.

Reclamation improved its emergency management capability by planning and conducting exercises in conjunction with emergency action plans, continuity of operation plans, occupant emergency plans, the emergency notification system, and the emergency operations center.

Construction

Reclamation's construction work supports its Dam Safety Program and is performed as part of specific projects authorized and appropriated by the Congress (such as the Animas-La Plata Project) to maintain or upgrade existing Reclamation infrastructure using Federal and/or non-Federal funds, on behalf of other Federal agencies in support of their programs and on behalf of project sponsors using non-Federal funds (such as the Drop 2 Storage Reservoir Project). Portions of this program and other authorized projects have been contracted to Indian tribes pursuant to the Indian Self-Determination and Education Assistance Act, Public Law 93-638.

Animas-La Plata Project

During FY 2008, Reclamation's major construction efforts were concentrated on the Animas-La Plata Project, spanning southwestern Colorado and northern New Mexico. Since 2002, approximately \$395 million has been awarded to construct the Animas-La Plata Project. At the end of FY 2008, the project was 64-percent complete. Reclamation is constructing this water

delivery project under the Colorado Ute Indian Water Rights Settlement Act of 1988, as amended in 2000. The project will provide water for the Ute Mountain Ute and Southern Ute Indian Tribes and the Navajo Nation, as well as benefit four other entities: the Animas-La Plata Water Conservancy District, Colorado; the State of Colorado; the San Juan Water Commission, New Mexico; and the La Plata Water Conservancy District, New Mexico.



Aerial view of Ridges Basin Dam construction.

Reclamation construction on Ridges Basin Dam and Ridges Basin Inlet Conduit, two key components of the Animas-La Plata Project, was substantially completed in FY 2008.

Construction began on the County Road 211 relocation. Reclamation also awarded three construction contracts associated with the Navajo Nation Municipal Pipeline. Ridges Basin Dam will create Lake Nighthorse, which will provide the Four Corners area (meeting point of Utah, Colorado, New Mexico,

and Arizona) with 120,000 acre-feet of long-term water storage. When the entire project is completed, municipal and industrial users within Colorado and New Mexico also will use this water.



Reclamation awarded a \$4.6 million contract to begin construction of the Navajo Nation Municipal Pipeline.

On September 11, 2008, Reclamation awarded a \$4.6 million contract to construct three underground pipeline crossings near Farmington, New Mexico. The contract marks the start of general construction of the Navajo Nation Municipal Pipeline, a structural component of the Animas-La Plata Project in New Mexico.

Information Technology Security Program

Reclamation's Information Technology (IT) Security Program functions to ensure the long-term security, operability, and reliability of the organization's information resources and automated information processing capabilities. The IT Security Program helps to ensure that critical engineering, water management, power generation, financial, and other mission-related information and resources are available and accessible to those who need them, while remaining secure from unauthorized individuals or those with malicious intent.

FY 2008 Highlights

In FY 2008, Reclamation's IT Security Program focused on assessing and enhancing our security maturity and performance, particularly in areas previously identified as needing improvement. FY 2008 activities targeted annual security testing, plans of action, and milestones, certification and accreditation (C&A), configuration management, and incident detection and response. Supplemental efforts focused on improvements in the identification, safeguarding, and training related to protecting sensitive and personally identifiable information. Positive and meaningful improvements were made in each of these critical IT security areas. In partial demonstration of this, Reclamation successfully underwent the annual IT security program-level review conducted by Interior. This review found no significant weaknesses in our management-level IT security controls.

Reclamation also successfully completed its required IT security Internal Control Reviews (ICR) to identify weaknesses throughout the program. ICRs were also completed on all mission-support IT systems, including those sustaining critical water and power activities. Independent testers were utilized for this year's assessments of key IT security controls to better support and validate Reclamation's Financial Assurance Statement. Through the integration of both self and independent assessment results, Reclamation actively maintains and improves its foundational IT Security Program components, including those for risk identification, management, and mitigation; contingency planning; incident response and reporting; procurement practices; and training.

To better balance its overall IT Security workload, Reclamation established a balanced C&A schedule to evenly distribute the impacts of these efforts over the activity's current 3-year cycle. All scheduled C&A activities for 2008 were completed.

In partnership with Reclamation's Security, Safety, and Law Enforcement and Power Resources Offices, the IT Security Program developed key requirements for critical asset identification, sabotage reporting, management, and leadership associated with compliance to the Critical Infrastructure Protection requirements of NERC. Compliance with these requirements in 2009 will be critical to our power facilities and Supervisory Control and Data Acquisition Systems.

Future Challenges and Goals

The IT Security Program's greatest challenge is balancing the information technology and operational needs of its organizational components with legislative mandates and the continuously changing cyber threat environment. The program's goals include the continuous improvement of IT security through a focus on implementing cost-effective solutions that support and enhance Reclamation's infrastructure, communications, information management, operational capabilities, and mission capabilities.

Serving Native American Communities

The mission of Reclamation's Native American Program, of which the Native American Affairs Program (NAAP) is an integral part, is to help make the benefits of Reclamation programs available to all federally recognized Indian tribes, as well as to fulfill Interior's Indian trust goals and responsibilities. The Native American and International Affairs Office (NAIAO), provides central coordination and policy leadership for all Native American Affairs issues throughout Reclamation.

NAIAO offers a wide variety of programs to Indian tribes, such as:

- Supporting Indian Self-Determination and Tribal Self-Governance (Title I and Title IV of Public Law 93-638, Indian Self-Determination and Education Assistance Act)
- Protecting Indian sacred sites on Federal lands
- Providing policy and technical support for Indian water rights settlements

- Helping to make Reclamation resources available throughout the 17 Western States to assist tribal governments in protecting, managing, and developing water and related resources
- Coordinating and executing a technical assistance program to tribes
- Providing training to Reclamation employees and members of federally recognized tribes in water resources-related areas.

For FY 2008, NAAP provided approximately \$3.8 million to enable Reclamation to assist in Indian Country (self-governing Native American communities) with outreach and technical assistance. Reclamation supported the Secretary's Indian Water Rights Office activities, providing approximately \$1 million for 19 Indian water rights negotiation teams, and 13 water rights settlement implementation teams. The NAAP technical assistance activities encompassed more than 100 projects involving more than 50 tribes and activities such as water needs assessments and improved water management, water quality activities, and water measurement studies. However, a significant number of unmet water-related technical assistance needs remain that have been identified by tribes.

FY 2008 Highlights

Reclamation's Native American Affairs Program has provided environmental monitoring assistance to the South Fork Band, Te-Moak Tribe from California. A water quality monitoring program was established to assess impacts to tribal waters from abandoned lead/zinc mines located upstream of reservation land and development of tribal water quality standards by measuring and evaluating surface water quality within and tributary to reservation boundaries. Water is tested for numerous contaminants, including organic compounds, bacteria, metals, and radionuclides; soils for are tested for contaminants such as dichlorodiphenyltrichloroethane (DDT), toxaphene, and related compounds.

Repair and refurbishment of diversion and delivery works associated with the Many Farms Diversion Dam on the Navajo Reservation by Reclamation and the Navajo Nation's Department of Water Resources has allowed the Navajo Nation to again store water behind the dam. Even though the dam underwent Safety of Dams modifications in 2002 to restore its full function, problems



Reclamation's Water Quality Division, Environmental Protection Agency, and Environmental Protection Department, South Fork Band, Te-Moak Tribe, working together.

with the diversion system that fed water from the Chinle Wash to the dam's reservoir prevented the Navajo Nation from using the dam's 16,500 acre-feet of storage capacity. Instead, the water ran down the wash and into the San Juan River. With the diversion system now repaired, the Navajo Nation is able to deliver water from the wash to the reservoir; by mid-summer, the reservoir was nearly half full, with more than 6,000 acre-feet of water in storage. The Navajo Nation will use the water for agricultural purposes.

The Willow Creek Ditch diverts water from Willow Creek, a tributary to the Gunnison River. The ditch is located on the Ute Mountain, Ute Tribe's Pinecrest Ranch near Gunnison, Colorado. The ditch did not function because of excessive loss resulting from rocky soil conditions and excessive spring runoff. With NAAP technical assistance funding, the tribe installed 1,200 feet of "Smart Ditch," a pre-formed plastic ditch liner used to reduce water loss.



A pre-formed plastic ditch liner reduces water loss at the Pinecrest Ranch Irrigation Project.

Future Challenges and Goals

Indian tribes experience a tremendous need for additional water supply infrastructure to ensure the health and safety of their people as well as provide for economic development. Reclamation is committed to assist federally recognized Indian tribes located within the 17 Western States.

Recreation and Accessibility

Reclamation plays a major role in meeting the increasing public demand for water-based outdoor recreation facilities and opportunities. Reclamation administers over 8 million acres of land and water that are, for the most part, open to recreation.

Reclamation water projects provide a diversity of recreation opportunities that range from high use urban reservoirs to semiprimitive wilderness settings. Recreation activities include camping, boating, hiking, fishing, hunting, wind surfing, sailing, picnicking, wildlife viewing, swimming, and sightseeing. The availability of public land and water for recreation purposes is a critical economic factor to communities, especially the rural communities located near Reclamation projects.

Federal and non-Federal recreation partnerships have been, and will be, the primary providers of recreation and concession-managed activities on land and water areas at the 289 developed recreation areas at Reclamation's water projects. Most recreation areas at Reclamation projects are managed by 66 local and State partners, other Federal agencies, and Indian tribes. Reclamation and its managing partners also rely on more than 225 concessionaires to provide a variety of goods and services to the public.

FY 2008 Highlights

Reclamation completed a recreation area brochure/map that identifies, among other things, the 289 developed recreation areas at its water projects, the managing entities, and available amenities at each recreation area. Reclamation is also developing a comprehensive recreation Internet site that will provide the general public with pertinent facts and information about Reclamation's recreation program.

New Melones Reservoir in California was selected to be the sole Reclamation recreation area to participate in the 2004 Federal Lands Recreation Enhancement Act. Revenues collected at the site will be directly available for onsite enhancement of the reservoir's recreation services and facilities.

Reclamation's Lower Colorado Region completed the Historic Railroad Trail along the original railroad grade and is the link between Hoover Dam, Boulder City, Nevada, and the River Mountains Loop Trail. Approximately 17.5 miles of the River Mountains Loop Trail within the Lake Mead National Recreation

Area was constructed. For safety reasons and to enhance the visitor experience below Hoover Dam, a canoe and raft launch ramp was constructed.

Under a cost-share arrangement, Reclamation partnered with the State of Arizona and Arizona State Parks Heritage Trail grant program funding to construct a bridge across the Salt River Project canal for the benefit of hikers, bikers, and equestrian users.



Bridge across the Salt River Project canal provides easy access to the Thunderbird Paseo Linear Park and 110 miles of the Sun Circle Trail system.

Reclamation, in cooperation with the Oregon State Parks, constructed a fishing pier, fish cleaning station, toilets, amphitheater, and registration booth at Prineville State Park. In cooperation with Jackson County Parks, Reclamation is installing a large group shelter, parking spaces, and picnic tables at Emigrant Reservoir.

Reclamation leveraged \$3.4 million with partner-matching agreements using matching funds or in-kind services for an estimated \$6.8 million worth of program accomplishment. Two contracts totaling over \$100,000 were awarded for work on recreation facilities on the Upper North Platte River and at Pilot Butte Reservoir. Work included accessible walkways, observation areas, parking pads, campsites, and picnic areas.

Future Challenges

Nationwide, recreation use of available sites will increase. The decrease in public funding for recreation also presents another major challenge for Reclamation and, primarily, its non-Federal partners that manage 159 recreation areas under agreements with

In FY 2008, 22 Reclamation-sponsored C.A.S.T. fishing events were held throughout the five Reclamation regions.



Catch A Special Thrill (C.A.S.T.) is a nonprofit foundation officially established in 1993 to provide disabled and disadvantaged children with the opportunity to enjoy a quality outdoor recreation experience of fishing and boating. Since the first C.A.S.T. event in 1991, Reclamation has worked with the C.A.S.T. for Kids Foundation; various Federal, State, city, and county agencies; and numerous Bass Anglers Sportsman Society Federations to make these events a reality for children across the West. For some children, this is their only chance to go fishing, boating, or to spend the day on the water. In 2008, approximately 1,000 children participated in Reclamation's C.A.S.T. fishing events in the 17 Western States.

Take Pride in America Helps Restore and Protect Public Lands. Along the lower Colorado River near Yuma, Arizona, Reclamation collaborated with 30 different agencies on 6 different events in FY 2008 to clean up lands along the river corridor that were being used as illegal dump sites, helping restore the lands to their natural setting. The events were cosponsored by Interior's Take Pride in America program, a national volunteer initiative. More than 800 volunteers participated in the events, donating more than 4,000 hours of time and effort. Together, the cleanups resulted in the collection of 526 tons of trash and debris, 2,253 tires, 46 abandoned automobiles, 7 abandoned trailers, and 1 recreational vehicle, along with 6 tons of scrap metal and 30 gallons of used motor oil.

Reclamation. When our non-Federal partners no longer can afford to manage a developed recreation area on Reclamation lands, they often return those areas back to Reclamation. A major challenge for Reclamation is to find creative ways to assist its non-Federal partners in managing recreation areas to prevent future turnbacks.



Demand for water-based recreation is happening at the same time budgets of State and Federal entities are declining.

Fish and Wildlife

Reclamation is responsible for fish and wildlife resources at many of its projects. These responsibilities are determined by individual project authorizations and other Federal statutes such as the ESA. While delivering water and power is our primary mission, we also work to minimize impacts on fish and wildlife in cooperation with FWS, NOAA Fisheries, State fish and wildlife agencies, and others. Habitat provided or supported by Reclamation's projects makes significant contributions to fish and wildlife resources throughout the Western United States.

FY 2008 Highlights

Reclamation was involved in a number of activities this year to improve conditions for endangered fish and wildlife, including the following activities.

The Upper Colorado River Recovery Implementation Program identified restoration of fish passage to allow upstream migration of fish as an important component in the recovery of four listed fish species. Fish passage at the Price-Stubb Diversion Dam, located on the Colorado River near Palisade, Colorado, was completed July 1, 2008. The dam was the last remaining obstacle to restoring fish passage from Lake Powell to the Colorado River headwaters.



The completed Price-Stubb fish passage allows upstream migration of fish.

The Lower Colorado River Multi-Species Conservation Program is a multi-stakeholder Federal and non-Federal partnership to balance water use with conserving native species to comply with the ESA. Reclamation leads this 50-year program and, with many partners, works to conserve at least 26 species through a Habitat Conservation Plan. The program's major components include native fish population augmentation, species research, species and ecosystem monitoring, and conservation area development. Major FY 2008 accomplishments included stocking endangered fish (18,000 razorback suckers and 8,000 bonytail); repatriating 2,000 more razorback suckers to augment brood stock; and planting 172 acres of new habitat for threatened and endangered species covered by the program.

Restoration efforts to remove Savage Rapids Dam in Reclamation's Pacific Northwest Region stands out as an example of a partnership for progress. Reclamation's Savage Rapids Dam Removal Project is a \$39.3 million endeavor, which is funded, in part, by a \$3 million grant from the Oregon Watershed Enhancement Board with additional funding from WaterWatch of Oregon. The Grants Pass Irrigation District is assisting with the work by providing rights-of-way and in-kind services. The project includes a 150-cubic-foot-per-second pumping plant and removing of a major portion of the dam to restore natural fish passage past the site. Savage Rapids Dam is located on the Rogue River; 5 miles upstream of Grants Pass, Oregon.



The Lower Colorado River Multi-Species Conservation Program succeeded in stocking endangered fish (18,000 razorback suckers and 8,000 bonytail).



The \$39.3 million Savage Rapids Dam Removal Project includes new pumping facilities and removing the dam to restore natural fish passage past the site.

Reclamation worked with USACE and other partners and stakeholders to develop alternatives for addressing pallid sturgeon recovery at Intake Diversion Dam on the Yellowstone River in eastern Montana—considered to be one of the best opportunities for pallid sturgeon recovery. The Congress provided authorization for the USACE to assist Reclamation in designing and constructing an ecosystem restoration project as part of the Water Resources Development Act of 2007. Reclamation has entered into Section 7 consultation with FWS on short-term construction effects and long-term operations. This consultation and a concurrent environmental impact analysis under the National Environmental Protection Act currently are being conducted.

Reclamation augmented flows in the Snake River and Columbia River to improve habitat conditions for salmon and steelhead species listed under the ESA. Flows are augmented through a combination of water releases from Reclamation reservoirs and water acquisitions. In addition, Reclamation provided technical

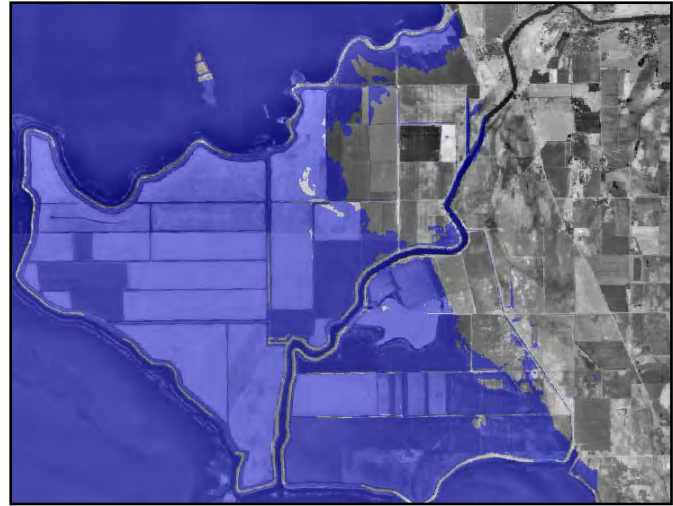
support for a variety of habitat improvement projects to benefit threatened or endangered salmon and steelhead species in the Columbia River basin.



Reclamation manages the waters of the Colorado River System through a series of dams, powerplants, reservoirs, and canal systems that provide 25 million people with vital water and power supplies.

Since 1996, Reclamation has partnered with The Nature Conservancy, FWS, National Fish and Wildlife Foundation, and PacifiCorp to improve Oregon's Williamson River Delta. The project's many goals included restoring habitat for endangered fish, enhancing water quality, and improving native wetlands for migratory waterfowl. Reclamation contributed more than \$6 million to the effort, provided crucial information about the endangered shortnose and Lost River suckers and their habitat, and provided engineering expertise during development of the environmental impact statement.

As a result of the partnership, nearly 2 miles of levees were removed, re-flooding 3,500 acres and restoring the connection among the wetlands, Williamson River, and Upper Klamath Lake. Studies indicate reclaiming the area will improve fish migration and survival rates of the juvenile suckers that will call the new wetlands "home." The newly established wetland area will also help trap and filter sediment and nutrients that have contributed to the poor water quality in Upper Klamath Lake. This work was recognized on April 8, 2008, when the partners received the 2007 Oregon Wetlands Award in Salem, Oregon.



Hydraulic modeling of Lower Williamson River.

Future Challenges and Goals

Reclamation, like other Federal and State agencies, will be increasingly challenged to carry out its fish and wildlife responsibilities in a timely, cost-effective, and biologically effective manner. Particular challenges include the increased demands on resources, litigation and court decisions, and the need for improved scientific understanding of species' requirements and habitat management needs. Reclamation's goal is to comply with the requirements of Section 7 of the Endangered Species Act while seeking to protect local economies and preserve natural resources and ecosystems through the effective use of water.