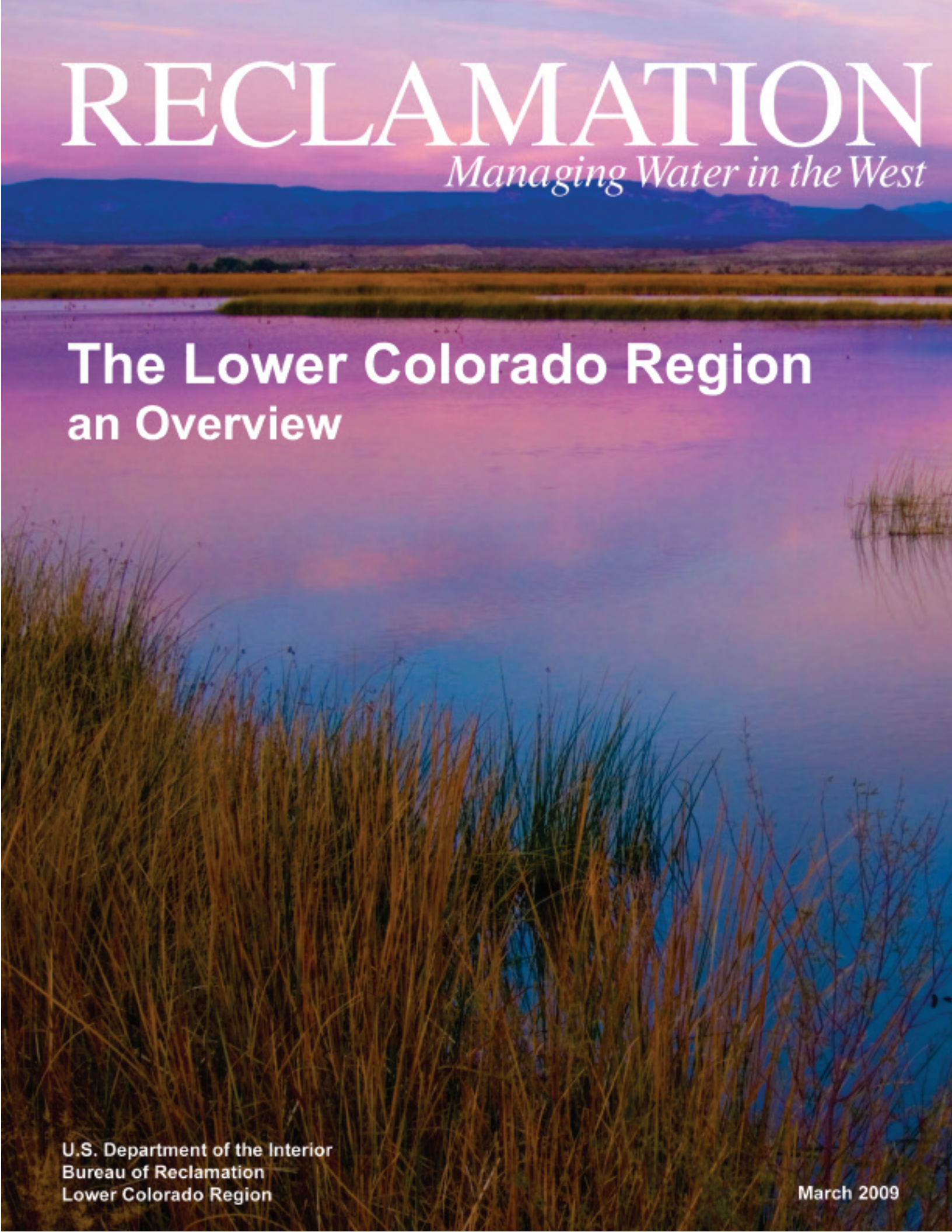
RECLAMATION

Managing Water in the West

The Lower Colorado Region
an Overview



U.S. Department of the Interior
Bureau of Reclamation
Lower Colorado Region

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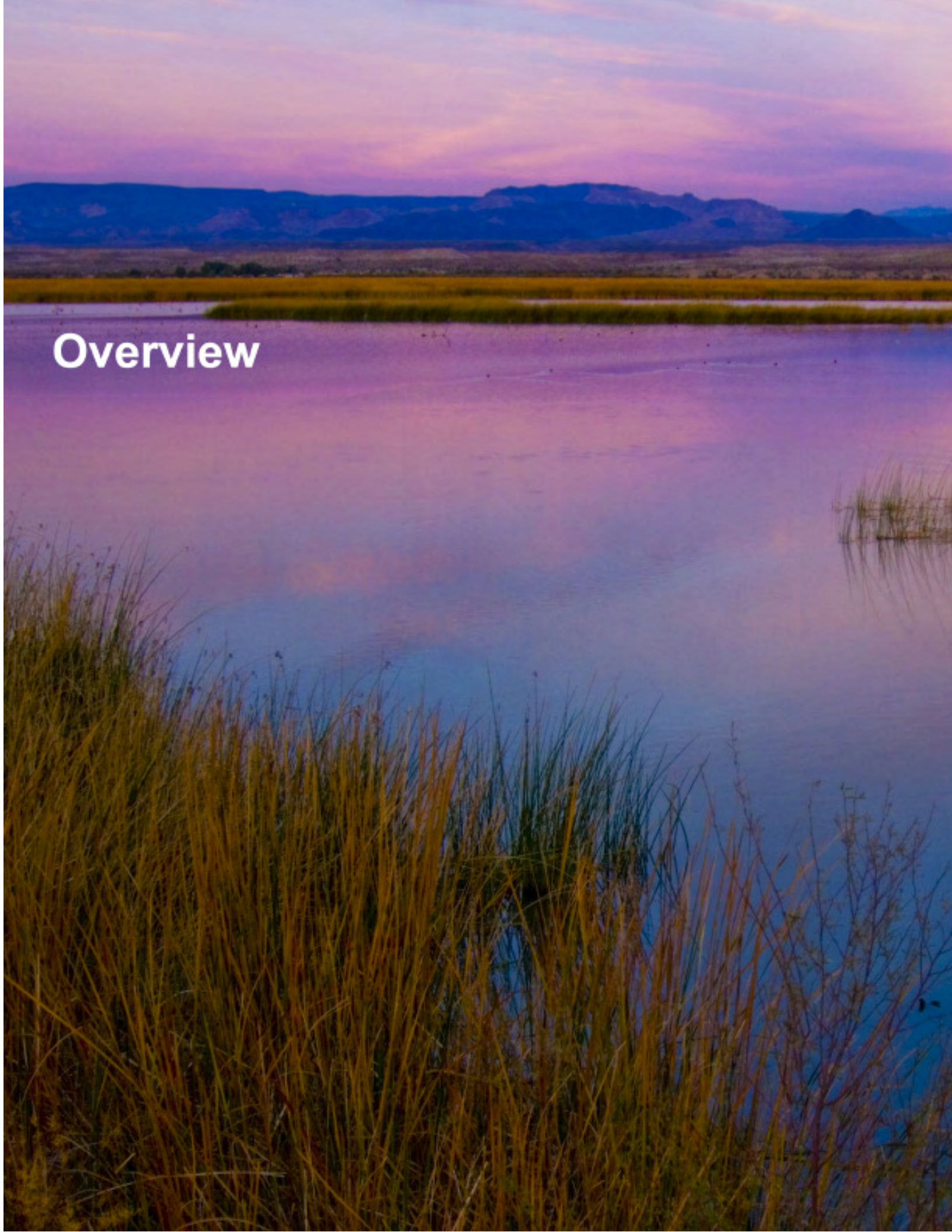


Overview

The Region

The Lower Colorado (LC) Region is one of five Regions that administer Bureau of Reclamation programs in Reclamation's 17 Western State operating area. The LC Region encompasses southern Nevada, southern California, most of Arizona, a small corner of southwest Utah and a small section of west-central New Mexico (see map). Reclamation has been involved in water management programs in these states since the early 1900's.

The Regional Office is located in Boulder City, Nevada, as is one Area Office. There are also Area Offices located in Phoenix and Yuma, Arizona; Temecula, California; and at Hoover Dam. We work closely together to ensure our programs and activities are transparent, efficient, effective and consistent while meeting the expectations of our stakeholders and constituents.

Some of Reclamation's earliest and best-known projects are located in this Region: Theodore Roosevelt Dam, the Salt River Project, the Central Arizona Project (CAP), Imperial Diversion Dam and the Yuma Project in Arizona; Hoover Dam, which straddles the Colorado River between Nevada and Arizona; the All-American Canal System in southern California; and the Robert B. Griffith Project (now part of the Southern Nevada Water System) in southern Nevada.

Many lesser known but equally successful projects, programs and activities have also been and continue to be implemented in the LC Region.

In a typical year, LC Region projects along the lower Colorado River deliver 7.5 million acre-feet (MAF) of water to users in Arizona, California, and Nevada, and 1.5 MAF to Mexico. The water helps irrigate more than 2.5 million acres of land and meet the domestic needs of more than 23 million people. Hydroelectric powerplants at Hoover, Davis and Parker Dams typically generate about six billion kilo-watt hours of clean, non-polluting hydroelectric power each year. This power, enough to serve nearly 1.4 million homes, is distributed to contractors in Arizona, Nevada and California. Reclamation also owns about 25 percent of the output of the Navajo Generating Station, located near Page, Ariz.; this power is used to move water through the CAP. We also constructed the original hydroelectric power plant at Roosevelt Dam, as well as the power plants at Headgate Rock Dam and New Waddell Dam. These facilities serve the Salt River Project, Colorado River Indian Tribes and Central Arizona Project, respectively.

FACT

Annual water deliveries from LC Region projects help irrigate more than 2.5 million acres of land and meet the domestic needs of more than 23 million people. The electricity generated by LC Region projects in an average year is enough to meet the annual usage of nearly 1.4 million homes.

More than 10 million people recreate on the reservoirs and river stretches below our dams each year, generating millions of dollars in revenue for local communities. Lake Mead, Hoover Dam's reservoir, resulted in the creation of the Lake Mead National Recreation Area, America's first national recreation site. The dam itself is a popular tourist destination; more than 800,000 people tour the dam each year.

About Us

Our People

There are about 830 full-time employees working in more than 150 occupational specialties in the LC Region. In addition, contract employees provide janitorial services, clerical support, visi-tor ticketing and parking management services, security, warehouse support, and operations and maintenance services at various LC Region offices.

We strive to ensure our workforce represents the diversity found in America - to promote a healthy and productive work environment and to meet Equal Employment requirements. To help accomplish this, we support and sponsor programs with the Hispanic Association of Colleges and Universities and Historically Black Colleges and Universities to ensure math, science, engi-neering and technology remain educational priorities. We're also involved in the communities in which we work and live, partnering with schools, local and state agencies and others on joint educational activities and to provide technical assistance with programs, particularly to under-served populations.

We use a variety of techniques to develop new skills in existing employees and to bring new employees into the workforce to meet the existing and projected personnel and skill sets we need to continue to successfully conduct the Nation's work. Apprenticeships, developmental assignments, and a leadership development program help existing employees refresh and develop new skills. A Student Career Experience Program (SCEP) and Student Temporary Employment Program (STEP) offer high school and college students an opportunity to gain valuable work experience and provide the potential for a long-term job with Reclamation.

Our Budget

Our annual budget emphasizes the management and development of water and power resources through the effective and efficient accomplishment of long-term and annual goals. Projected work and budget requests are aligned to the Department of the Interior's Strategic Plan, Reclamation and Regional performance goals and Activity Based Cost/Management codes, and program managers are held accountable for meeting established budgets and goals. Monthly reports, quarterly meetings and other processes enable senior management and program managers to evaluate and track budget and performance, so shortfalls can be identified and actions necessary to address them implemented. Budget justification documents and other information is made available to the public via our "Budget and Finance" internet site – **www.usbr.gov/lc/region/g7000/**.

Hoover Dam

About one-third of our annual funding (total available funding in FY08 was $358.1 million) is provided through the appropriations process, the balance comes from permanent appropriations, revenue-funded programs, or other federal and non-federal agencies.

Permanent funding is provided through the Colorado River Dam Fund, which derives its revenues largely from the sale of electrical energy at Hoover Dam. In 1984, the Hoover Dam Power Plant Act established that all receipts would be deposited into this fund and available without further appropriation to pay for operations, maintenance, replacement, interest, and repayment associated with the Boulder Canyon Project. It also provided for the transfer of power revenues to the Lower Colorado River Basin Development Fund (LCRBDF).

The LCRBDF was established by the 1968 Colorado River Basin Act to collect revenues from the Central Arizona Project, certain revenues generated from the Boulder Canyon and Parker-Davis Projects, and revenues from the contemplated but never implemented Northwest-Pacific

Southwest Power Intertie. These revenues are available without further appropriation to help defray the costs of CAP operations and maintenance. In addition, Title I of the Arizona Water Settlements Act AWSA) authorizes the use of those revenues that would have been returned to the U.S.Treasury to repay CAP construction costs to be retained in the LCRBDF and invested. The earnings from these investments will also be retained in the Fund. After January 2010, the funds will be made available without further appropriation for a multitude of specified purposes identified in the AWSA, including the operation and maintenance of Indian water distribution systems for Arizona tribes served by the CAP.

Preparing for the future

Reclamation has prepared to meet 21st century challenges by thoroughly examining its core capabilities in a number of key areas as well as its ability to respond in an innovative and timely manner to future needs. Through an agency-wide *Managing for Excellence* initiative that used input from our employees, customers and stakeholders and a National Research Council Report, we analyzed our organization, practices and culture. We continually heard that we needed to be more efficient, more transparent, more accountable, more collaborative, and more communicative. In the LC Region, these imperatives guide our interactions with our customers, stakeholders and employees.

The initiative also revealed that Reclamation needed to increase its project management abilities. In the LC Region, we have implemented, are providing training in, and are using project management principles to develop more consistent project solutions, create greater flexibility for effective communication, and improve collaboration among team members, management and stakeholders. This process delivers results with greater transparency and accountability, producing beneficial outcomes on time and within budget. It has improved communication and productivity, both internally and externally, helping to more effectively satisfy project objectives.

Managing the lower Colorado River

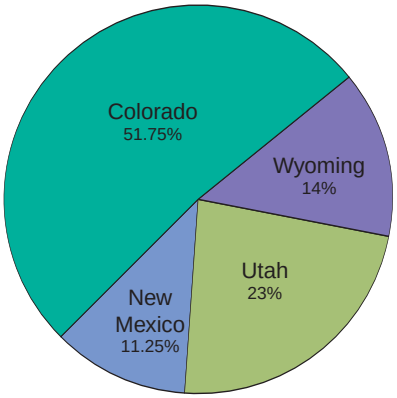
The LC Region implements the Secretary of the Interior's "Water Master" function in the lower Colorado River basin. We work closely with the seven Colorado River Basin states, local entities, Indian tribes, water and power agencies, environmental groups, other federal agencies, and other interested parties to manage major dams, reservoirs, diversion works and other related facilities; oversee hydropower generation operations; account for the consumptive use of Colorado River water; and manage lower Colorado River entitlements.

Lower Colorado River

To ensure transparency in this management, we maintain a large amount of water and power data on our website, **www.usbr.gov/lc/riverops.html**.

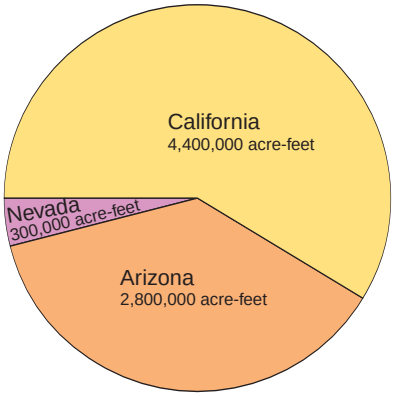
Management activities are guided by a body of documents known as the "law of the river," which includes Acts of Congress, interstate compacts, court decisions and decrees, water and power contracts, a 1944 Treaty with Mexico, and other administrative and legal documents.

The cornerstone of these documents is the Colorado River Compact of 1922, which was developed by the seven Colorado River Basin states and the federal government. The Compact divided the basin into approximately equal geographic upper and lower halves, and allotted 7.5 million acre-feet (MAF) of Colorado River water annually to the states in the upper basin (Colorado, Wyoming, Utah and New Mexico) and 7.5 MAF annually to the states in the lower basin (Arizona, California and Nevada).



The upper basin states water division

The Compact did not apportion water to any state. The lower basin state apportionments were established by Congress in the Boulder Canyon Project Act of 1928. In that Act, Congress empowered the Secretary to accomplish the division of the lower Colorado River apportionment: 4.4 MAF to California; 2.8 MAF to Arizona; and 300,000 acre-feet to Nevada. The individual apportionments among the states of the upper basin were established by the Upper Colorado River Compact of 1948, and Mexico's annual apportionment of 1.5 MAF was established in the 1944 Treaty.



The lower basin states water division

An Annual Operating Plan approved by the Secretary guides the yearly management and operation of the river. The AOP specifies, among other requirements, the amount of water that must be in storage in upper basin reservoirs on September 30, the amount of water that must be delivered to Mexico pursuant to the Treaty, and the amount of water that will be available to the states in the lower basin in that year. Reclamation prepares the AOP in consultation with the Basin States, water and power users and other interested parties.

We also approve annual water orders for contractors taking Colorado River water in the lower basin, then track and account for the consumptive use of the water by each contractor. This accounting is accomplished through a real-time monitoring system that allows us and the water users to track the water use and projected end-of-year total through the internet on a daily basis.

Already a complex task, management of the lower Colorado River is likely to become even more challenging in the future, as the demand for water to meet the needs of an expanding population, the environment and recreation increases. There is also concern that continued drought and/or climate change will reduce the amount of water available in the river in future years. In collaboration with the Basin States and others, we are prepared to meet this challenge. In

2005, we initiated a transparent, public process to develop new, interim operating guidelines for coordinating the management of Lake Powell and Lake Mead under a wide range of hydrologic conditions to better balance the water available to the upper and lower basin states. These guidelines also specify when the Secretary would declare a shortage condition on the lower river. A shortage declaration would reduce the amount of Colorado River water available to Arizona and Nevada in a given year; California, because of its early water rights, would not be affected except in very severe instances.

The Interim Guidelines also provide an innovative way – referred to as Intentionally Created Surplus, or ICS – to increase the flexibility of lower basin contractors to conserve additional water and make some of it available at later times, particularly for urban use, which generally has the lowest priority Colorado River rights.

We also are conducting or supporting multi-faceted research efforts to learn more about and better understand the possibility for climate change and its potential impacts on the Colorado River. Increased and more accurate information will help all Colorado River water interests better plan for the future. It also will enable us to respond to climate change and to increased hydrologic variabilities.

Water Quality

The LC Region ensures that Colorado River water delivered to Mexico meets specific salinity standards established through a supplemental agreement to the 1944 Treaty.

We also collect water quality data at selected locations along the lower river and share that data with other federal, state, and local agencies. The data is of current interest, and it has future value in that it will provide a valuable record of the river's water quality during this current drought. It also will help track and document changes that may occur to the river system from the introduction of the invasive Quagga mussel in 2007.

Water Quality Improvement Center, Yuma, Arizona

Our Water Quality Improvement Center in Yuma, Ariz., is a key part of the National Centers for Water Treatment Technology. At this

state-of-the-art facility, new and improved technologies that advance the development and transfer of water purification technologies can be investigated.

We also are a member of the Las Vegas Wash Coordinating Committee and the Lake Mead Water Quality Forum in southern Nevada. The Wash, which carries treated and other waters from the Las Vegas Valley to Lake Mead, includes wetlands and other vegetation that provides habitat to about 300 fish and wildlife species and more than 200 species of upland, riparian and wetland plants. These organizations are dedicated to the development and implementation of practical, comprehensive approaches for managing the Wash to reduce the likelihood of water quality problems in Lake Mead.

Water Conservation

We have long encouraged and supported efficient water use in the arid Southwest, supporting water conservation efforts through the Water Conservation Field Services Program (WCFSP) and *Water 2025* Challenge Grant program. The grants supported conservation planning efforts, implementation of conservation measures, the use of new technology and innovative techniques, and conservation training and education programs. They have helped water districts, communities, Native American Tribes and others throughout the LC Region accomplish their water conservation objectives.

Work on the Drop 2 storage reservoir project located in southern California, north of the All-American Canal.

In Fiscal Year 2009 and beyond, Reclamation will partner with the U.S. Geological Survey to implement the *Water for America* initiative. This initiative is focused on securing water resources for future generations and coping with 21st century water challenges.

Water conservation is the primary purpose of the Drop 2 Reservoir Storage Project now under construction in southern California about 30 miles east of El Centro and just north of the All-American Canal. This project will conserve, on average, 70,000 acre-feet of Colorado River water each year that is now lost to U.S. users and the Colorado River system because of limited storage capacity on the river below Parker Dam. The conserved water, which will be used by the Imperial Irrigation District, will reduce water releases from Lake Mead, helping augment the lower Colorado River water supply.

This unique project is being constructed by Reclamation, with funding provided by the Southern Nevada Water Authority, Metropolitan Water District of Southern California and Central Arizona Water Conservation District. For funding this conservation project, each of these entities will receive a specific amount of additional water from Lake Mead for a determined period of years ending in 2036. After 2036, all water conserved by the project will benefit the Colorado River system. This unique arrangement was made possible by the ICS mechanism put in place by the interim guidelines enacted in December 2007. The Imperial Irrigation District will operate and

maintain the project, but Reclamation will retain title to it and an oversight role in its operation and maintenance.

The Coachella Canal and All-American Canal Lining Projects will also conserve substantial amounts of water.

In 2006, the Coachella Valley Water District finished constructing 35 miles of new, concrete-lined canal adjacent to the original earthen Coachella Canal. This project, funded by the State of California and San Diego County Water Authority, is conserving about 30,000 acre-feet of water each year that was being lost to seepage. The water, which will be shared by the San Luis Rey Indian Tribe and SDCWA, will be delivered to the SDCWA through the Colorado River Aqueduct, which is owned and operated by the Metropolitan Water District of Southern California.

The All-American Canal Lining Project, being managed by the Imperial Irrigation District, will conserve an estimated 67,000 acre-feet of water each year that has been seeping from a 23-mile section of this earthen canal. This conserved water also will be used to settle tribal water rights claims and to help California eliminate its historic reliance on surplus water from the Colorado River. This project, authorized by Congress in 1988, is being financed by the California Department of Water Resources and the SDCWA.

Increasing Water Availability

Many LC Region programs and projects focus around the Colorado River, but we also conduct or participate in other projects and programs designed to increase available water supplies in the Southwest.

For example, we are involved in wastewater reclamation and reuse projects, a seawater desalination demonstration project, and five brackish groundwater projects with various state and local agencies. These projects are developing water supplies that have not previously been available for use, helping stretch the Colorado River water supply.

Research being conducted at our Water Quality Improvement Center in Yuma may also increase water availability in the Southwest. This research focuses primarily on advancing the state of water treatment technology to reduce the cost of treating impaired waters so they can be made available for use. Research projects are accomplished through cooperative research and development agreements between government, academia, and private industry.

This facility also conducts research to identify technologies and processes that would reduce the cost of operating the Yuma Desalting Plant. Located just west of Yuma, Ariz., this plant was constructed to treat saline return flows from an irrigation district, so the treated (desalinated) water could be included in the Colorado River water delivered to Mexico. Completed in 1992, the plant has operated only briefly, as required Colorado River water quantity and quality delivery obligations to Mexico have been met without using it. The irrigation return flows have been channeled directly to Mexico, bypassing the Colorado River and the desalting plant. However, additional water must be released from Lake Mead to make up for this bypassed flow, which averages about 108,000 acre-feet a year.

Because the desalting plant would reclaim and make available a quantity of water that is not now available to the Colorado River system, and because drought has reduced the amount of water available in storage and raised the possibility of a shortage in the future, there is interest in seeing the plant operate. A 90 day run at 10 percent capacity in 2007 demonstrated its operational capability, and a more-extended run has been discussed. The plant could help increase the water supply available in the lower Colorado River, as each gallon of treated water it produces would conserve an equal gallon of water in storage for future use.

On occasion, our water management expertise is requested by states, communities or others who are not within our Regional boundaries.

Such is the case with the state of Hawaii, which may realize extra water because of a joint investigation we did with them on state-owned irrigation systems which had fallen into disrepair. The study resulted in cost estimates for rehabilitating 10 state-owned irrigation systems to provide more water.

We also conducted a wastewater reclamation and reuse study with the Hawaii Commission on Water Resources Management. A report on storm water reclamation and reuse opportunities identified potential collection areas, storage facilities, water delivery routes and water use areas, as well as potential barriers to and solutions for implementing storm water use. Fourteen opportunities were ranked and prioritized for the State to pursue.

International Activities

In meeting the terms of the 1944 Treaty with Mexico and its subsequent implementing agreements, or “Minutes,” we work closely with the International Boundary and Water Commission (IBWC) and the U.S. State Department. The relationships that have been created have been instrumental in helping address and resolve issues that periodically arise regarding Colorado River management and use.

In 2008, IBWC formed a Binational Core Group to address Colorado River-related issues of common interest to the United States and Mexico. This group is comprised of representatives of both the U.S. and Mexican sections of IBWC, Reclamation, Mexico’s National Water Commission, Semarnat[1], the U.S. Colorado River basin states, State representatives of Baja California and Sonora Mexico, and non-governmental organizations from both nations. The Group’s mission is to pursue cooperative actions that can be implemented to ensure the Colorado River is able to continue to meet environmental, agricultural, and urban demands in both nations. Separate U.S. and Mexico work groups are assessing potential projects in four areas: water conservation; new water sources; environmental issues; and system operations. LC Region staff lead and/or participate in several of the U.S. work groups.

Planning Investigations Program

LC Region offices work closely with partners throughout the Region on 50/50 cost-shared,

[1]Mexico Cabinet Level Department of the Executive Branch responsible for developing environmental policy and legislation in Mexico.

long-range investigation/planning studies designed to meet critical water supply issues. The studies address and seek resolutions to problems that have arisen or may arise from competing and often conflicting uses of the lower Colorado River, and they help identify and address concerns about the availability, quality, and allocation of other water supplies. Many of the studies are designed to help state and local entities identify and develop cost-effective and reliable local water supplies, so they can become more self-reliant in addressing their existing and future water supply needs.

This program is a critical part of our work. Water issues in the Southwest are growing, changing, and becoming more complex. Over the next 25 years, each river basin in the LC Region will face critical water supply issues. We are working closely with other water interests and our water users to help reduce the likelihood of more demands being made on the already over-appropriated Colorado River and on other supplies that are the basis of existing Reclamation projects. Our planning efforts continue to address water supply and quality issues that may impact us and other water users now and in the future.

Native American Activities

All LC Region offices work with Native American Tribes in their respective areas of responsibility. We help Tribal governments identify, protect, manage and develop their water and related resources and assist with drought mitigation efforts when possible. We also participate in and support the Department of the Interior's efforts to negotiate water rights settlements and uphold Indian Trust responsibilities in the lower Colorado River basin.

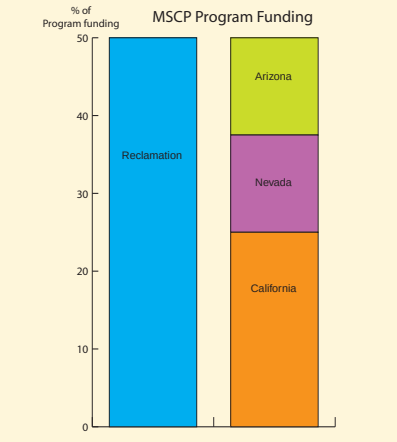
Environmental Programs

Our environmental programs are conducted to mitigate the environmental effects of project construction and operation and maintenance activities, and to provide endangered species protection and conservation and habitat improvement. These programs are conducted in partnership with other federal or state agencies.

The comprehensive, 50-year Lower Colorado River Multi-Species Conservation Program (LCR MSCP), implemented in FY06, will protect the lower Colorado River environment while ensuring the certainty of existing water and power operations, address the needs of threatened and endangered wildlife under the Endangered Species Act, and reduce the likelihood of additional species listings along the lower Colorado River. The LC Region has primary implementation responsibility for this program, in consultation and partnership with a Steering Committee consisting of representatives from 56 participating entities. The program covers areas up to and including the full-pool elevations of Lakes Mead, Mohave and Havasu and the historical floodplain of the Colorado River from Lake Mead to the United States-Mexico Southerly International Boundary. Conservation measures currently focus on the area

Southwest Willow Flycatcher

from Hoover Dam to the border. The program is expected to cost in excess of $1 billion by the time it is completed in 2055. The Department of the Interior, through Reclamation, will provide 50 percent of the program's funding, and California, Nevada, and Arizona will jointly provide the other 50 percent (CA-50%, NV-25% and AZ-25%).



In concert with numerous local, state and federal, and other agencies and interests, we also are addressing the potential impacts of Giant Salvinia and the Quagga mussel, two exotic species that have invaded the lower Colorado River system.

Giant Salvinia is a noxious weed that, left uncontrolled, can rapidly cover the surface of a lake or stream, killing native plants, choking fisheries and hampering boating and other recreational activities. In cooperation with other federal agencies, irrigation districts, and state and local agencies in California and Arizona, we have implemented an annual spraying program and other efforts to control the spread of this weed.

Quagga mussels on Davis Dam Gate

The Quagga mussel, discovered in Lake Mead in January 2007, can colonize water pipes, gates, valves and other types of physical infrastructure to the point of completely disrupting and potentially even stopping water delivery, power generation or other operations. It can also disrupt ecosystems and impact recreational use of waterways.

The LC Region has been and continues to consult and collaborate with other Reclamation offices, state agencies, other federal agencies, private industry and other natural resource management agencies to identify and implement measures to prevent or control mussel infestations that would adversely affect our facilities or other facilities in the LC Region and across the West.

In southern California, we've been involved with various entities seeking solutions to the deteriorating water quality conditions at the Salton Sea in southern California.

In Arizona, we're constructing barriers on several Arizona streams to protect endangered native fish species. These barriers, required as mitigation for construction of the Central Arizona Project, will ensure that non-native fish species that might be imported into Arizona by the CAP do not move upstream into areas where the native species live.

We're also a cooperating agency with the Southern Nevada Water Authority, the Colorado River Commission of Nevada, and the Nevada Department of Wildlife in a study of the razorback sucker population in Lake Mead. The razorback sucker is one of four native, endangered fish

species in the Colorado River Basin whose population has been greatly reduced from historic levels by the construction of dams and the addition of non-native fish and other species that prey on their larvae. This study has shown that the Lake Mead population is not only self-sustaining, but may actually be increasing – a condition not found anywhere else on the lower Colorado River system. Biologists hope to identify the specific conditions that are allowing this to happen, and perhaps replicate those conditions at other locations in the lower basin.

We're also part of a cooperative effort by several southern Nevada entities to fully develop the Clark County Wetlands Park. The Park overlies the lower Las Vegas Wash in Henderson, Nev., on Reclamation-withdrawn lands leased to the County. It includes wetlands that were re-created using native vegetation, and outdoor recreation and education programs.

Hydroelectric Power

The electricity generated at Hoover, Davis and Parker Dams is an important resource for the Arizona, California and Nevada entities that have contracts for this power, and they are fully engaged in the management of these facilities.

We meet regularly with our power contractors to discuss maintenance plans and needs, projected operation and maintenance costs (which the contractors fund), and to share other information. This collaborative partnership has resulted in many accomplishments, including the implementation of capacity and efficiency improvement programs at Hoover Dam to minimize the impacts of drought.

The capacity improvements focus on increasing water flow to the turbines to the extent possible when Lake Mead drops 55 feet or more below its full operating elevation (1219.6 feet above mean sea level). To accomplish this, original turbine wicket gates[2] on some generating units are being replaced with new gates that allow more water to reach the turbine even under the reduced water pressures experienced at lower lake levels. On other units, mechanical changes to the wicket gate system allow the existing gates to open wider.

Parker Dam

When this program began in 2005, Hoover Dam's maximum rated generating capacity of 2,074 megawatts (MW) had fallen to approximately 1,700 MW because of the reduced water pressure resulting from the lowered water level in Lake Mead. By the end of FY08, these improvements had recovered 70 megawatts (MW) of that lost capacity. After the program is completed in 2011, it is anticipated that more than 100 MW of capacity will have been recovered for use when Lake Mead is at these lower elevations. (This program does not change Hoover Dam's maximum rated capacity, however.)

[2] Wicket gates are large steel gates which can be opened or closed to control the flow of high pressure water to a hydro turbine, much as venetian blinds can be opened or closed to control the amount of sunlight coming through a window.

The efficiency gains are realized largely by completely refurbishing each individual generating unit. This improves a unit's efficiency by 3 to 4 percent. It also reduces water leakage through the unit when the turbine is shut down, saving water that can be used for additional energy production.

A $17 million project initiated in FY07 to replace the original analog controls on the 26 generating units at Hoover, Davis and Parker Dams with new digital control equipment is scheduled for completion in 2012. Among other benefits, this program will allow the units to go from a non-generating mode to full generation in about one-fourth the amount of time previously required. Ultimately, it also will reduce the number of hours the units are operated at low, inefficient loads.

We also ensure our hydroelectric power plants comply with the mandatory reliability standards developed by the North American Electric Reliability Corporation (NERC) in accordance with section 1211 of the U.S. Energy Policy Act of 2005. We annually assess the facilities to determine if they are in compliance with these standards and, if not, initiate corrective action to bring them into compliance. We have also participated in the creation of a Reclamation-wide compliance working group, and in the formation of a Reclamation-wide permanent management compliance team. This team will provide the structure, accountability, communication, and oversight necessary to show Reclamation is meeting or exceeding these standards.

Resources Management

Archaeology Site

We communicate and work closely with land management and other administrative entities who manage our project lands to ensure proper administration and accountability in the management of soil and hazardous waste, pests and invasive species, cultural resources, fire management plans, and other related contractual management arrangements. This program also ensures we meet requirements of the Americans with Disabilities Act and the Native American Graves Protection and Repatriation Act.

Reclamation projects are typically operated and maintained by the entity that sponsored their construction after construction is complete. The United States retains title to the project facilities and oversight of the project while the sponsoring entity repays the construction costs and, sometimes, long after. In the mid-1990's, Reclamation initiated a program to transfer title of project facilities and lands, when appropriate, to the operating entity. We work with water users throughout the LC Region to determine potential title transfer opportunities and, when appropriate, conduct such transfers.

We also protect cultural and historic resources at our projects, and participate in activities with other federal and non-federal archaeologists to help monitor and protect other cultural resource sites. The LC Region manages about one-third of Reclamation's entire collection of museum property, which consists primarily of archaeological collections, historic records and art work and its associated records. These collections are in repositories in Boulder City, Nev., which we

share with the National Park Service; at Hoover Dam; and in a facility in Arizona that houses approximately two million items collected during construction of the Central Arizona Project. That facility is managed by the Gila River Indian Community through an Annual Funding Agreement.

Using Southern Nevada Public Lands Management Act (SNPLMA) funds, we have upgraded the original exhibit building at Hoover Dam to current fire and safety codes and restored its historic appearance. We have also rehabilitated and improved accessibility for a tour boat launching facility downstream of the dam, and are planning additional SNPLMA-funded safety, access and rehabilitation projects related to the visitor experience at the dam.

Asset Management

In 2005, we completed a lands finance records reconciliation program. In accordance with Executive Order 13327, Federal Real Property Asset Management, we then initiated an asset inventory and financial records verification project. We have completed an audit on all lands under our jurisdiction, inventoried the real property assets (buildings and other structures) on those lands, and matched the real property data to financial records. The inventory lists assets that we manage, assets that have been transferred to other entities for operation and maintenance, and the condition and value of the assets. More than 38,000 individual pieces of data were collected by integrating information from many different sources, including site visits to each facility and correspondence with managing partners. We have shared this information with water districts throughout the LC Region, and it has been incorporated into the Federal Real Property Profile. We are continuing to refine data and processes, and improve data management relationships between the real property, space utilization, motor vehicle fleet, and maintenance programs. This process has made us more accountable for the assets we manage, and our operations are now more transparent to the partners who share operations and maintenance responsibilities for these assets.

Security

We have a comprehensive security program in place to protect our facilities and the employees, contractors, visitors and communities at or near them. We work with other Reclamation offices and non-Reclamation entities to continually assess the facilities we own or operate to ensure the adequacy of these security programs. By continually identifying potential threats and assessing vulnerabilities and consequences posed by those threats, we can prepare and implement integrated and cost effective security measures to mitigate them.

Davis Dam

When necessary, we improve our security measures to make them more robust or effective. In FY07 we initiated a multi-year program to upgrade the electronic security system for Hoover, Davis and Parker Dams. This

upgrade will substantially improve our ability to quickly detect and implement a pre-planned, organized response to mitigate and quickly recover from any security related incident at the dams - 24 hours a day, seven days a week, 365 days a year.

We routinely test and practice these security programs to ensure they accomplish their defined objectives. When appropriate, we involve other agencies that would respond and assist us during an emergency incident. This furthers the working relationships and communication we have with these agencies.

At Hoover Dam, Reclamation's only police force provides security and law enforcement services for the dam and an approximately 22 square-mile security zone. Hoover Dam police enforce federal and state laws and regulations in the security zone; help local and federal law enforcement agencies with various assignments; protect employees and visitors from physical harm; and perform the many other tasks required to protect one of America's National Critical Infrastructure sites.

Engineering and Safety

Our engineering and safety programs further Reclamation's reputation as one of the world's premiere engineering organizations.

Our engineering program encompasses the full range of engineering services, from the initial stages of a project to project completion. Our safety programs focus on occupational health and safety to foster a positive workplace safety culture, and to mitigate and eliminate safety hazards and incidents at our workplaces and facilities.

In collaboration with other Reclamation offices, stakeholders and customers, we evaluate our dams to ensure they are performing in a manner that achieves Safety of Dams program objectives and to ensure they do not present unreasonable risks to the public, to property, or to the environment. We also examine other structures that are generally operated and maintained by project beneficiaries - canals, pumping plants, tunnels, pipelines, bridges, river channelization features and diversion dams – to ensure they continue to provide authorized project benefits, operate effectively, protect the public interest, safety and the environment, or improve water management or conservation. And we assist downstream communities with inundation data and information to support their emergency preparedness planning, and deploy staff, as requested, to support disaster recovery activities throughout the United States.

Recreation

Reclamation project lands and reservoirs are some of the most-visited, most-used recreation sites in the United States. Development and use of these projects for recreation is accomplished primarily through partnership agreements with state or federal entities, often with Reclamation's support and assistance.

In the LC Region, we manage the Hoover Dam visitor program. This program is largely self-supporting, using visitor fees, parking fees and other revenue it generates to pay program

Water Skiing on Lower Colorado River

operation, maintenance and repair/replacement costs, as well as our voluntary portion of the repayment obligation for construction of the visitor facilities. Paid visitation to the dam exceeds 850,000 people a year.

In Arizona, we have participated or are participating in the planning and development of parks, trails and trail heads adjacent to Reclamation-owned canals. We're also involved in the development of marinas and campground facilities at reservoirs on the Agua Fria and Salt Rivers.

Through partnership agreements with the cities of Scottsdale and Phoenix, some of the lands behind the CAP canal that were set aside for use as flood detention basins have been developed for recreation. There are golf courses, one of which hosts a PGA tournament; picnic areas; baseball fields for children with disabilities; and a multi-purpose facility that has hosted equestrian shows, automobile shows and other events.

In Nevada, we are participating in the development of the 35-mile long River Mountains Loop Trail, part of a larger system of trails for hikers, bicyclists, and equestrians in the Las Vegas Valley/Boulder City/Lake Mead/Hoover Dam area. We're also involved with Clark County in the design and development of a new regional park and trail system in the Laughlin area below Davis Dam.

Special Events and Activities

C.A.S.T. for Kids

Each year, we conduct "C.A.S.T. (Catch A Special Thrill) for Kids" events in southern Nevada and in Arizona. Created by the C.A.S.T. for Kids Foundation in 1991, this program joins volunteers who love to fish with disabled and disadvantaged children to give them an opportunity to spend a day participating in an outdoor activity they may not otherwise get to experience. These activities are strongly supported by local businesses, fishing clubs such as Bassmasters, and others who generously volunteer their time, talents and equipment to create a very special day for some very special children.

For the past 18 years, we have co-sponsored an annual model bridge building contest for elementary, middle school and high school students in southern Nevada with the local chapter of the American Society of Civil Engineers and Las Vegas-area engineering firms. The contest requires the students to apply the science and math they've learned to design and build a model bridge that cannot weigh more than about one ounce, exceed 16.5 inches in length, or be more than five inches high or three inches wide. The bridge must be made out of specified materials provided

in a kit. The bridges are tested to failure in a laboratory setting. This program reaches an average of 1,800 students each year, many of whom pursue engineering, architecture or science careers after high school.

Summary

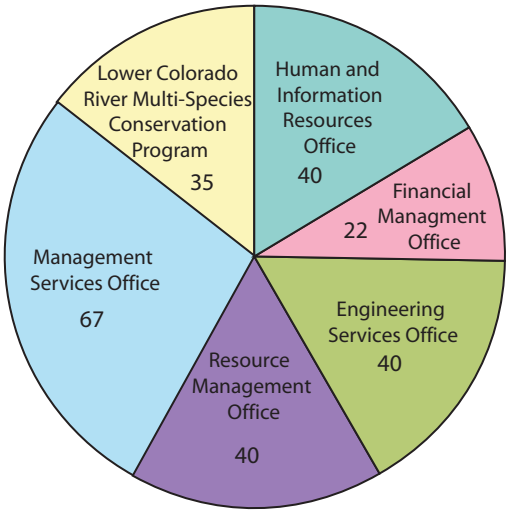
In the LC Region, the Bureau of Reclamation has worked with state, local, Native American and other interests to help identify, develop and implement solutions to water supply and management issues in the lower Colorado River Basin since the early 1900's.

We look forward to continuing those partnerships, to expanding the relationships that have been developed, and to developing new partnerships with other interests. Finding consensus solutions to the water supply and management challenges of the future will take time, effort, creativity, innovation, and flexibility. It will require that everyone work together, leveraging the resources available to each of us to ensure safe and reliable water supplies for our successors much as those who preceded us ensured that for us.

Lower Colorado Region and Area Offices

Lower Colorado Regional Office

The Lower Colorado Region (LCR) consists of the Engineering Services, Financial Management, Human and Information Resources, Management Services, and Resource Management Offices, and the Lower Colorado River Multi-Species Conservation Program. The Regional Director, two Deputy Regional Directors, Executive Administrative staff, Public Affairs, Security and Native American Affairs staff also work at the Regional Office. A Regional Liaison is located at the Department of Interior Building in Washington, D.C. In addition to other Office functions specified in the following paragraphs, the Regional Office services and support all of the Lower Colorado Region's offices, which include over 800 employees. The Lower Colorado Regional Office is located in Boulder City, Nevada.



Regional Office Employees

Resource Management Office (RMO)

Overview

Employees: ~ 40

RMO provides services related to Reclamation's environmental planning and compliance activities, land-use management, public outdoor recreation management, and long-term water and land resources planning programs. It provides coordination and oversight of the Region's environmental, cultural resources, wildlife habitat, and hazardous material management programs and policies to ensure compliance with associated laws and regulations on Reclamation lands. The Office assesses and documents environmental, cultural, and hazardous material impacts on Reclamation lands, and manages consultations with state and Federal regulatory agencies, and prepares associated reports and documents.

RMO also: (1) manages activities on Reclamation-withdrawn lands (those set aside for Reclamation project purposes), including use authorizations, recreation development and administration, trespass resolution inventory, universal accessibility, and official land records management; (2) provides recreation and land use planning assistance and program coordination, and assistance in acquiring lands or interests in lands for project or resource management use; (3) manages the Regional Laboratory which provides soil and water analyses for regional projects; (4) provides Geographic Information Systems geo-spatial and mapping services for the Region; (5) manages water conservation, wastewater reclamation, reuse studies, and administers

drought assistance/loan programs and Native American Assistance programs within their geographical area; and (6) provides environmental awareness, education and outreach programs to regional communities and organizations.

Financial Management Office (FMO)

Overview
Employees: ~ 22

FMO is responsible for the Regional financial program, including planning, developing, revising, adapting, and operating the financial accounting program and budget system for the Region, and for executing policies and maintenance of established standards and procedures for formulation, control, accounting, and coordination of all financial and related activities. Additional responsibilities include management of the Region's charge card program, Government Performance and Results Act, Activity Based Costing/Management (ABC/M), and coordination of policy review within the Region.

Human and Information Resources Office (HIRO)

Overview
Employees: ~ 40

HIRO provides a full range of human resources services, including staffing and recruitment, classification and position management, training and development, organizational development, leadership development, employee and labor relations, benefits counseling, and information and imagery management. The HIRO staff works in partnership with internal and external customers and resources to recruit, develop, and retain the high-caliber, diverse workforce necessary for the LC Region to achieve its mission and goals. In addition, the Office provides professional quality information and imagery services in support of the LC Region and Reclamation. Services include advice and support related to Freedom of Information Act (FOIA) and Privacy Act requests, maintenance of historical publications and photographs, and mail, copy, and bindery services.

Engineering Services Office (ESO)

Overview
Employees: ~ 40

ESO provides engineering design, construction, and other technical services to all the offices in the Region, other Regional Offices, other Reclamation offices, other Federal agencies, and public entities, as appropriate and possible.

These services include project management; field investigations, examinations, and analysis; surveying, mapping and geomatic engineering; design data collection; appraisal, feasibility, and final designs; specification and drawings development; cost estimating; pre-award and post-

award acquisition activities; contract administration; construction program development incorporating work planning and critical path scheduling; construction management; field engineering; and construction quality assurance including site and source inspection and testing. ESO also provides safety and occupational health management, emergency management, examination of existing infrastructure, and dam safety services for the entire LC Region.

Management Services Office (MSO)

Overview
Employees: ~ 67

MSO provides a variety of administrative support services to the Region. This includes developing and/or implementing acquisition and financial assistance guidance; implementation and oversight of the purchase line credit card; review and oversight of the Yuma Area Office (YAO) and Phoenix Area Office (PXAO) acquisition offices; and solicitation, award, and administration of simplified and large contracts for supply, services, and construction requirements, grants, cooperative agreements, and interagency acquisitions to support the program goals of offices in Boulder City, Southern California Area Office (SCAO), and the Lower Colorado Dams Office (LCDO). The Office maintains an inventory of all accountable government property including personal, real, and motor vehicles. The Office oversees flight operations of the LC Region airplane. A maintenance staff provides both interior and exterior maintenance and repair for 20 buildings, including heating, ventilating, and air conditioning (HVAC) systems, and performs grounds and landscaping work for more than 20 acres of Federal property. The Information Technology support included computer and phone support to employees in the Lower Colorado Regional Office, and technical oversight and assistance to the Region's Area Offices.

Lower Colorado River Multi-Species Conservation Program (LCR MSCP)

Overview
Employees: ~ 35

The program is a 50-year multi-stakeholder Federal and non-Federal partnership responding to the need to balance the use of lower Colorado River water resources and the conservation of native species and their habitats. It provides ESA compliance for covered actions undertaken by Federal agencies under Section 7 and by non-Federal partners under Section 10. Covered actions include routine operations and maintenance of the lower river, and the change in point of diversion of up to 1.574 million acre-feet (maf). It will conserve at least 26 species through the implementation of a Habitat Conservation Plan (HCP) that calls for the creation of more than 8,100 acres of habitat for covered species and the stocking of approximately 1.2 million native fish into the river to augment existing populations.

The program area extends over 400 miles along the lower Colorado River from Lake Mead to the Southerly International Boundary with Mexico, incorporating the full pool elevations of three large reservoirs (Lake Mead, Lake Mohave, and Lake Havasu) and the historic 100-year floodplain of the main stem Colorado River.

Reclamation is the program's implementing agency; partnership involvement occurs primarily through the LCR MSCP Steering Committee, currently representing 56 entities, including state and Federal agencies, water and power users, and other interested parties. The Steering Committee provides input and oversight functions in support of LCR MSCP implementation.

The LCR MSCP entered its fourth year of implementation in FY09. To date, approximately 3,300 acres and 15,000 acre-feet of water have been secured by the program. In addition, 542 acres of habitat have been established and approximately 107,000 native fish have been stocked into the lower river.

Boulder Canyon Operations Office (BCOO)

Area of Responsibility

BCOO supports lower Colorado River water and hydropower operation and management efforts throughout the Lower Colorado Region. Most of the BCOO staff is located with the offices and units of the Regional Office in Boulder City, Nevada. BCOO also has a field office in Blythe, Calif.

Overview

Employees: ~ 55: 49 in the Boulder City office, 6 in the Blythe field office

In accordance with a body of documents known as the "Law of the River," BCOO works with Federal, state and local entities, Indian tribes, water and power constituents, environmental groups, the U.S. Department of State, the International Boundary and Water Commission, and other interested entities and individuals in the management and operation of the lower Colorado River.

Among its many responsibilities, BCOO: manages and schedules water and power operations on the lower Colorado River through its Water Control Center; accounts for Colorado River water use; develops and administers water delivery contracts and power contracts; and oversees the regional water conservation program. BCOO's programs and activities help ensure Reclamation projects in southern Nevada, Arizona, and southern California continue to provide reliable benefits to the Region's citizens and environment.

Lower Colorado Dams Office (LCDO)

Area of Responsibility

The LCDO consists of Hoover, Davis and Parker Dams and their associated powerplants and other facilities on the lower Colorado River. Hoover Dam, about seven miles east of Boulder City, Nevada, is the administrative headquarters for the LCDO.

Overview

Employees: ~ 280

The LCDO manages, operates and maintains these facilities to deliver Colorado River water and hydroelectric power to its customers reliably and at a good value. LCDO also strives to provide visitors to Hoover Dam, who come from all over the world, an educational and entertaining tour experience.

Completed in 1935, 1953 and 1938, respectively, these three facilities were essential to the economic growth of the Southwest, and continue to sustain that growth today. Through coordinated operations, they annually deliver an average of 7.5 million acre-feet of Colorado River water to urban and agricultural water users, including Indian Tribes, in Arizona, Nevada, and California, and 1.5 million acre-feet of water to Mexico in satisfaction of a 1944 Treaty. The dams also protect downstream communities from floods and, together, annually generate an average of more than 6.5 billion kilowatt-hours of electricity that is distributed to the three states.

The electricity generated by these facilities is an important resource for those entities in Arizona, California and Nevada that have contracts for it, and those entities are fully engaged in the maintenance, operation and management of the facilities. LCDO meets regularly with its power contractors to discuss maintenance plans, needs and projected costs, and to share other information as well. This collaborative partnership is very beneficial to Reclamation and to the customers, providing transparency to our operations and strong communication about both Reclamation and customer goals and objectives.

Hoover Dam's reservoir, Lake Mead, and Davis Dam's reservoir, Lake Mohave, are the centerpieces of the Lake Mead National Recreation Area, the Nation's first national recreation area. These and other reservoirs and controlled stretches of water on the lower Colorado River provide year-round recreational areas that are enjoyed by millions of people as well as habitat for fish, wildlife and birds.

Phoenix Area Office (PXAO)

Area of Responsibility

Most of Arizona and the Gila River watershed in New Mexico.

Overview

Employees: ~ 91: 85 in the Phoenix Area Office, 6 in the Tucson field office

Reclamation has been involved in the critical issue of water development in Arizona since 1902.

PXAO accomplishes its mission by working with the state of Arizona, cities, counties, tribes and other partners to help Arizona move forward with its water management goals. PXAO's oversight of the operating entities for Reclamation projects protects the public's safety and investment in the structures Reclamation built. PXAO strongly encourages water conservation, recharge, reuse, and treatment in order to stretch Arizona's water supplies, and realizes that partnerships are the way to bring together a variety of interests in order to address the continuing competition for limited water resources.

Oversight and Construction

PXAO began studies in the 1940's for what is today's Central Arizona Project (CAP). After the CAP was authorized in 1968, Reclamation began construction in 1973. Twenty years later, the project was declared "substantially complete". Operation and maintenance was turned over to the Central Arizona Water Conservation District, but Reclamation maintains ownership and oversight responsibility. The CAP delivers, on average, 1.5 million acre-feet of Colorado River water to central and southern Arizona communities and Indian tribes. PXAO continues to work in partnership with several communities and interests to plan for construction of additional features in the Tucson area in order to provide water delivery reliability. Construction also continues on Indian distribution systems to allow the Gila River Indian Community, the Tohono O'odham Nation, San Carlos Apache Tribe, Camp Verde Yavapai Apache Tribe, Tonto Apache Tribe, and Pascua Yaqui to accept delivery and fully utilize their CAP water allocations. Construction also continues on a series of fish barriers, which are being constructed on Arizona streams to protect endangered or threatened native fish from invasive non-native species.

PXAO is also responsible for oversight of the operation and maintenance of the Salt River Project, one of the first Reclamation projects authorized in 1903, including historically significant Theodore Roosevelt Dam on the Salt River. The project contains 1200 miles of canals, 4 dams on the Salt River with electrical generation capabilities, two dams on the Verde River, and the newest addition C. C. Cragin Dam, originally built and operated by Phelps Dodge Corporation. C. C. Cragin Dam was transferred to SRP and then into federal ownership in 2005; this action was approved by the Arizona Water Settlements Act.

PXAO does not directly manage any recreational facilities on Reclamation projects in Arizona. Federal, state, and county agencies work in partnership with Reclamation to provide day-to-day operations, and Reclamation provides oversight in order to protect the interests of the American public and ensure availability and accessibility for all people. Recreational opportunities include water-related activities on reservoirs and unique canal-side developments on CAP retention basins including, in Scottsdale, Arizona, PGA golf courses and a popular venue for activities as varied as national horse shows and car auctions. Soccer fields and Little League baseball fields that are accessible to children with disabilities have been constructed in Phoenix, and a trail system is being built in the town of Marana, north of Tucson.

Indian Settlements

PXAO plays a key role in the continuing implementation of the Arizona Water Settlements Act, which became enforceable on December 14, 2007, when the Secretary published the required Statement of Findings in the *Federal Register.* Enforceability triggered many required implementation activities that will require Reclamation action, including preparation of construction schedules, environmental compliance, administration and oversight of the Lower Colorado River Basin Development Fund (Fund), and preparing for a series of disbursements from the Fund in 2010.

PXAO is also a key player in ongoing water rights settlement negotiations for the combined Navajo-Hopi claims, the White Mountain Apache Tribe, and the San Carlos Apache Tribe's claims on the upper Gila River. PXAO is also expected to be involved in other Arizona Tribes water rights settlement negotiations.

Program Development

PXAO works with the state, counties, cities, communities, Tribes and organizations to help them develop and manage their limited water resources. Currently, PXAO's planning studies and technical assistance are focused on the state's rapidly growing rural areas. PXAO is working in Coconino, Maricopa, Pinal, Pima, Gila, Cochise and Yavapai Counties, as well as with several Tribes. PXAO conducts an extensive Water Conservation Field Services Program, involving agricultural, industrial and residential users. PXAO also partners with local water users and universities on research efforts to manage and treat the salts (or Total Dissolved Solids) in SRP and CAP water, and in the groundwater, to allow the widest possible use and reuse of available water supplies.

Southern California Area Office (SCAO)

Area of Responsibility

Located in Temecula, California, SCAO encompasses all of southern California within the Lower Colorado Region except the Imperial and Coachella valleys.

Overview

Employees: ~ 10

SCAO administers programs to develop or enhance water management throughout southern California in support of Reclamation's mission. There are five distinct programs: Title XVI Water Reclamation and Reuse including desalination research; Water Conservation Field Services; Drought Assistance; Technical Assistance to Native American Tribes; and Planning Investigation activities.

Title XVI Water Reclamation and Reuse

Through Reclamation's Water Reclamation and Reuse Program, authorized by the Reclamation Wastewater and Groundwater Study and Facilities Act of 1992 (Title XVI of Public Law 102-575) as amended, SCAO participates with southern California entities to: investigate and identify opportunities for water reclamation and reuse of municipal, industrial, domestic, and agricultural wastewater, and naturally impaired ground and surface waters; design and construct demonstration and permanent facilities to reclaim and reuse wastewater; and conduct research, including desalting, for the reclamation of wastewater and naturally impaired ground and surface waters. Seventeen of the 43 specific projects authorized by the Act are located in SCAO's area of responsibility. When all these projects are completed, they will produce about 400,000 acre feet of recycled water annually.

Water Conservation Field Services Program (WCFSP)

In southern California, an area with scarce water resources and a population that is increasing by nearly 280,000 people each year, water conservation is essential to maintaining the quality of life and economy. Through the WCFSP, SCAO provides technical and financial assistance to agricultural, municipal and industrial water users, local governments, universities, non-profit organizations, and Native American Tribes to promote and sustain the efficient use and conservation of water supplies. SCAO also administers Water 2025, Water for America, and CALFED awards to agencies within its jurisdiction.

Drought Assistance

On June 4, 2008, following two straight years of below-average rainfall, very low snowmelt runoff and the largest court-ordered water transfer restrictions in state history, California

Governor Arnold Schwarzenegger proclaimed a statewide drought and issued an Executive Order to address a dire situation where numerous California communities are being forced to mandate water conservation or rationing. The lack of water has created other problems, such as extreme fire danger due to dry conditions, economic harm to urban and rural communities, loss of crops and the potential to degrade water quality in some regions. SCAO is working with the State, with local government entities, and with Tribes to address the development of drought plans and emergency drought assistance through technical and financial assistance.

Native American Affairs Program

This program provides financial and technical assistance to some of the 31 Federally-recognized Native American Tribes within SCAO's jurisdiction. Projects with tribes include wetlands restoration, irrigation facilities rehabilitation, exploration and treatment of deep ground water supplies, surveys and work associated with endangered species, general project planning, installation of ground water monitoring wells, development of water management plans, water assessment investigations, general water supply/quality investigations and technical assistance as needed.

Planning Program

Through this program, SCAO offers a wide range of water management consultative services and helps address water issues in southern California by developing integrated and sustainable solutions to water problems from a regional perspective, and by providing local program advocacy. SCAO promotes the efficient use of water through different types of planning investigations: water conservation; reclamation reuse and recycling; water banking/water transfers; salinity management; seawater/brackish water desalination; brine concentrate disposal and management; drought planning; ground and surface water conjunctive use; river restoration; storm water augmentation and management; watershed modeling addressing both water quantity and quality; watershed/integrated resources plans and better basin management; groundwater recharge; and the development of new water sources.

Yuma Area Office (YAO)

Area of Responsibility

The Colorado River corridor south of Davis Dam, southwest Arizona, and south/southeast California. The main office, located west of Yuma, Arizona, is on a 60-acre campus that also includes the Yuma Desalting Plant (YDP) and Water Quality Improvement Center (WQIC). Field maintenance offices are maintained in Laguna and Ehrenberg, Calif.

Overview

Employees: ~ 175 Federal employees and 70 contract personnel

YAO, in concert with BCOO manages the annual delivery of about 7 million acre-feet of Colorado River water from Parker Dam to nearly 2 million people and more than one million acres of irrigable land in southern Arizona, southern California, and Mexico. YAO also operates and maintains a large system of drainage wellfields and canals in the Yuma area; maintains the second largest desalting plant in the world, largest of its kind in the U.S; provides technical support and conducts training and demonstration projects on water conservation for irrigation districts and Native American Tribes; manages salinity control projects south of Imperial Dam; maintains 276 miles of the Colorado River including banklines, river control structures, gates, bridges, levees, and access roads; oversees the operation and maintenance of Imperial, Laguna and Senator Wash Dams by the Imperial Irrigation District; maintains the Colorado River channel for navigation, flood control, and water delivery operations; and provides water quality experts internationally.

Administering the Mexico Water Treaty

Through daily coordination between the YAO, the International Boundary and Water Commission (IBWC), the BCOO, and various irrigation districts, and regular meetings with IBWC and Mexico water agencies, YAO administers and meets the annual water delivery and salinity requirements of the Treaty of 1944 (Treaty) between the United States and Mexico and its subsequent Minute 242.

Groundwater and Salinity Management

Four large wellfields and associated canals in the Yuma area are managed and operated by the YAO to keep groundwater tables low enough to sustain commercial agriculture. The pumped groundwater is returned to the Colorado River and included in water deliveries to Mexico; about one-third of water deliveries to Mexico include pumped groundwater from the Yuma area, preserving about 300,000 acre feet of water in U.S. reservoir storage annually.

The wellfields and canals are monitored and controlled with a state-of-the-art digital system which allows YAO water operations personnel to maximize beneficial water use. Data from this system is available to and widely accessed by water users and the general public through a web-site, and has been strongly endorsed by the water users for providing useful and reliable information and transparency.

Resource Management

The YAO performs oversight and management of more than 585,000 acres of Federally-owned land and associated facilities. The YAO ensures these resources are managed in compliance with state and Federal law as well as providing proactive environmental stewardship.

Desalting Services

The Yuma Desalting Plant (YDP) was constructed under authority of the Colorado River Basin Salinity Control Act of 1974 to treat saline irrigation return flow and to include the treated (desalinated) water in water deliveries to Mexico under the Treaty. Plant construction was completed in 1992, and operation occurred briefly in 1992 and 1993, then again for a short duration and low capacity demonstration run in 2007. The plant has been maintained but not operated because the expense associated with operating a plant to extend water supplies could not be justified during the surplus and normal water supply conditions that have largely been experienced on the Colorado River. However, prolonged drought in the Colorado River Basin has generated interest among water users in the Lower Colorado River Basin for plant operation. A 365 day pilot run of the plant during a 12 to 18 month period has been proposed; U.S. and Mexico-based environmental groups have expressed concern about operation.

The WQIC, an advanced water treatment research center located at the YAO, is one of six National Centers for Water Treatment Technologies and the only center focused on inland brackish water, both surface and groundwater. The WQIC is periodically utilized by academia, state and local governments, and the private sector for research projects. The Technology Transfer Act of 1996 makes facilities like the center available to more quickly advance into widespread use advanced water treatment technologies.