LOWER COLORADO REGION

DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

OVERVIEW

2000

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Introduction

A compendium of some of Reclamation's historical work in the Lower Colorado Region, along with key accomplishments in the year 2000.

The Bureau of Reclamation

Created by an Act of Congress in 1902, the Bureau of Reclamation is best known for the dams, reservoirs, powerplants, and canals it has constructed in partnership with States and local entities throughout the 17 Western States. These projects were built to help open the states to settlement and to promote their economic development, and they have been extremely successful in fulfilling that mission. This success has earned Reclamation a worldwide reputation for engineering excellence in water resources management.

Initially, Reclamation projects were single-purpose, intended to provide water for irrigated agriculture, the West's primary economic activity for much of the 20th century. As the Nation grew, and the West's needs changed, Reclamation projects changed to meet those needs by providing multi-purpose benefits: water for agriculture and towns, cities and Native American communities; hydroelectric power generation; flood control; and recreational opportunities.

The demand for water in the West today is even greater than it was nearly 100 years ago. Reclamation is helping meet that demand through better management of the water supplies that have been developed, and by finding new and innovative ways to increase the availability of water supplies. As it did throughout the 20th Century, Reclamation will continue to work in partnership with the States, Indian tribes, water and power users, local communities and other entities to help meet the West's water and related resource needs of the 21st century.

The Lower Colorado Region

The Lower Colorado (LC) Region is one of five geographically-defined areas that administer Reclamation programs and projects in the 17 Western states. The LC Region encompasses southern Nevada, California south of the Tehachapi Mountains and east of the Sierra Nevada, most of Arizona, a small corner of southwest Utah, and a small piece of west-central New Mexico. The Region was formally established in 1943, some four decades after Reclamation began working in these states.

The Regional Office, from which Reclamation's programs and activities are administered throughout the Region, is located in Boulder City, NV. There also are five Area Offices within the Region, as well as a Native American Affairs Office, which is located in Phoenix but is administratively part of the Regional Office.

The Area Offices are located in Phoenix, AZ.; Yuma, AZ.; Temecula, CA; Boulder City, NV; and at Hoover Dam on the Colorado River. The Area Offices work directly with local entities within specified geographic areas (see map). The Area Offices and the Regional Office work closely together to ensure Reclamation programs and activities throughout the LC Region meet the expectations of our constituents and customers, and are conducted with maximum efficiency, effectiveness and consistency.

Some of Reclamation's earliest and best-known projects - Theodore Roosevelt Dam, Hoover Dam, the All-American Canal, Parker Dam - are located in the LC Region, as are more recent accomplishments such as the Central Arizona Project and the Robert B. Griffith Project (now part of the Southern Nevada Water System). Many other lesser known but equally successful Reclamation projects are also located in this Region. Large or small, the projects have all contributed - and continue to contribute - to the economic development and quality of life in Arizona, southern California and southern Nevada.

The Lower Colorado Region

Key Regional Objectives

Our vision in the LC Region is to manage and operate the lower Colorado River system in a manner that respects the rights and obligations established under the existing "Law of the River" while looking for creative ways to meet the changing and contemporary needs of the river basin. To help accomplish this vision, we follow several key objectives:

- Effectively carry out the Secretary of Interior's role as watermaster of the lower Colorado river, in consultation with the Colorado River Basin states and other interested publics.
- Continue to deliver 9 million acre-feet of water and produce 6 billion kilowatt-hours of hydroelectric energy from lower Colorado River dams and associated powerplants. Continue strong customer service orientation, including bench-marking programs that demonstrate and improve operational efficiency.
- Complete implementation of the California "4.4" plan and associated National Environmental Policy Act and Endangered Species Act (ESA) compliance.
- Complete the Lower Colorado River Multi-Species Conservation Plan and achieve long term ESA compliance for river operation and management.
- Complete the Final Salton Sea Environmental Impact Statement and implement any restoration projects or plans that may be authorized by Congress.
- Develop a long term, cost efficient plan for meeting the Federal obligation for replacing the bypass drainage flows from the Wellton-Mohawk Irrigation and Drainage District, meeting the salinity standards for Colorado River water supplies delivered to Mexico, protecting the environmental values associated with the Cienega de Santa Clara, and protecting water supplies of Colorado River users in the United States.
- Implement the settlement of the Cental Arizona Project (CAP) litigation with the Central Arizona Water Conservation District, including completion of final water allocations and the execution of appropriate contract actions along with associated NEPA and ESA compliance.
- Complete the construction of CAP Indian distribution systems, with near-term emphasis on the system for the Gila River Indian Community.
- Continue the lower Colorado River dredging and bankline/levee maintenance programs that: (1) protect property adjacent to the river from high flows; (2) reduce or eliminate sediment that restricts delivery of water in the United States and Mexico (consistent with international agreements); and (3) help create environmental restoration of backwaters along the river in the United States.
- Continue to operate the Hoover Dam Visitor Center in a manner that serves the public interest, while generating revenues that pay operation costs as well as construction costs consistent with agreements with project power customers.
- Continue to encourage the conservation and efficient use of Colorado River water, including the continued funding and implementation of waste water reuse projects under Title XVI of P.L. 102-575.
- Define and implement Reclamation's role in restoring the Las Vegas Wash.
- Continue to cooperate with the International Boundary and Water Commission to address issues associated with delivery of water to the Country of Mexico under the 1944 Mexican Water Treaty.

A Multi-Benefit Program

Reclamation projects in the LC Region provide many benefits.

Water Supply. In a typical year, nine million acre-feet (maf) of water is delivered to irrigate more than 1.5 million acres in the United States and Mexico, and to help meet the needs of more than19 million people in Arizona, Nevada and California. In 2000, LC Region projects delivered about 2.66 maf of Colorado River water to Arizona, 5.3 maf to California, and 330,000 acre-feet to Nevada. An additional 1.7 maf was scheduled for Mexico.

Hydroelectric Power. Hydroelectric powerplants at Hoover, Davis and Parker Dams generate an average of six billion kilowatt hours of electricity a year - the energy equivalent of more than 11.4 million barrels of crude oil, and enough energy to meet the needs of two million people. Reclamation also owns about 25 percent of the output of the Navajo Generating Station, located near Page, AZ; this power is used to pump Colorado River water through the Central Arizona Project to water users in Arizona. Reclamation also constructed the original hydroelectric powerplant at Roosevelt Dam, as well as the powerplants at Headgate Rock Dam and New Waddell Dam. These facilities benefit the Salt River Project, Colorado River Indian Tribes and Central Arizona Project, respectively.

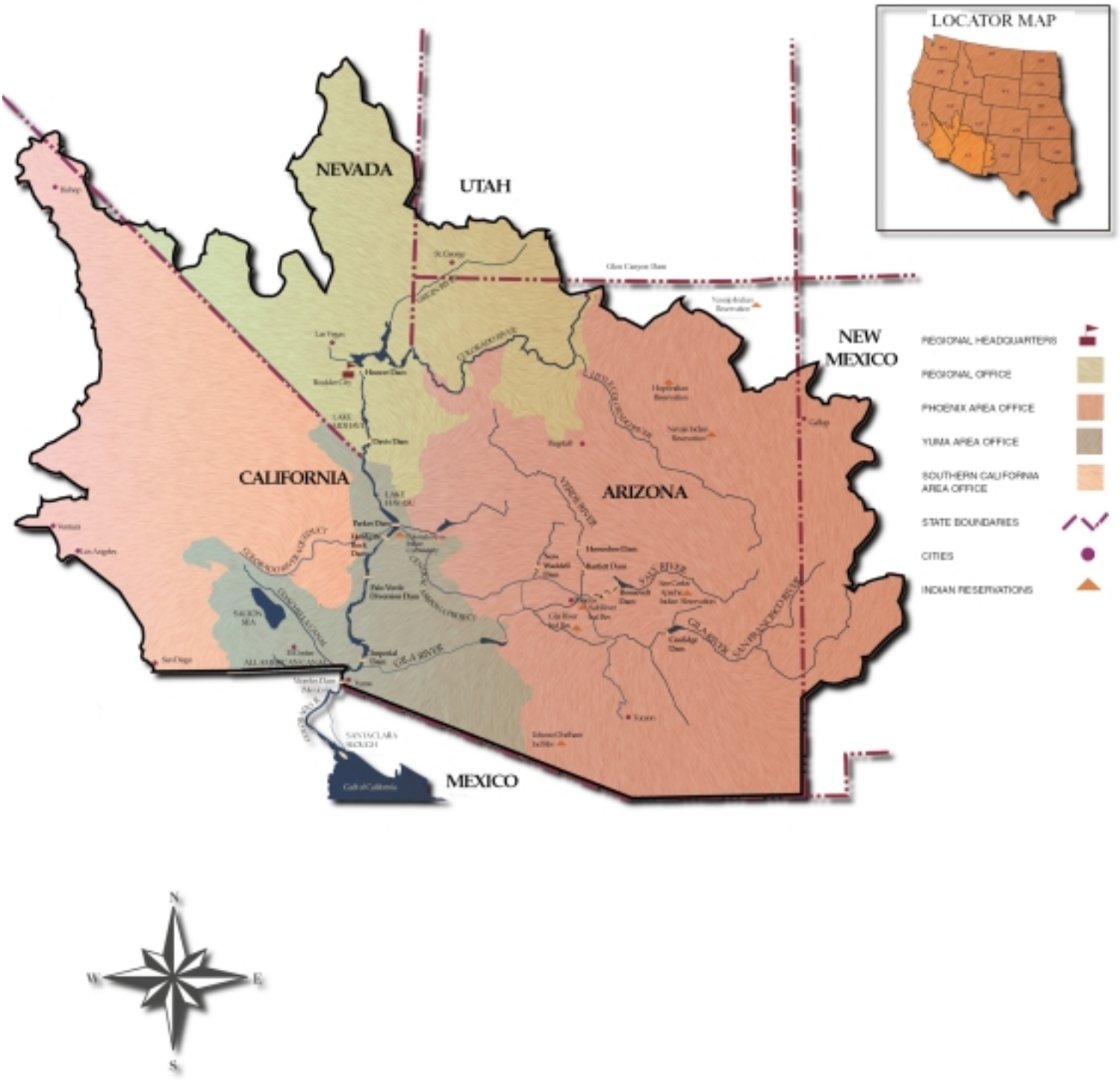
Recreation. There are 15 major recreation areas on Reclamation projects in the LC Region. The largest is the Lake Mead National Recreation Area, America's first national recreation site. More than 12 million people visit these recreation areas each year, and hundreds of thousands more enjoy the recreational opportunities provided by the year-round, managed flow of the lower Colorado River. The recreation areas are managed by other governmental agencies, except for the Hoover Dam visitor center,

Natural and Cultural Resources. Four national wildlife refuges and one national wildlife area were developed on the lower Colorado River to provide fish and wildlife habitat and recreational opportunities. In addition, numerous backwater areas have been created or rehabilitated to provide fish and wildlife habitat. Managing, protecting and enhancing fish and wildlife habitat and natural, cultural and recreational resources to preserve the aesthetic quality and natural environment and promote the safe and healthful use of land and water has long been part of Reclamation's program, in cooperation with other Federal and state natural resource agencies.

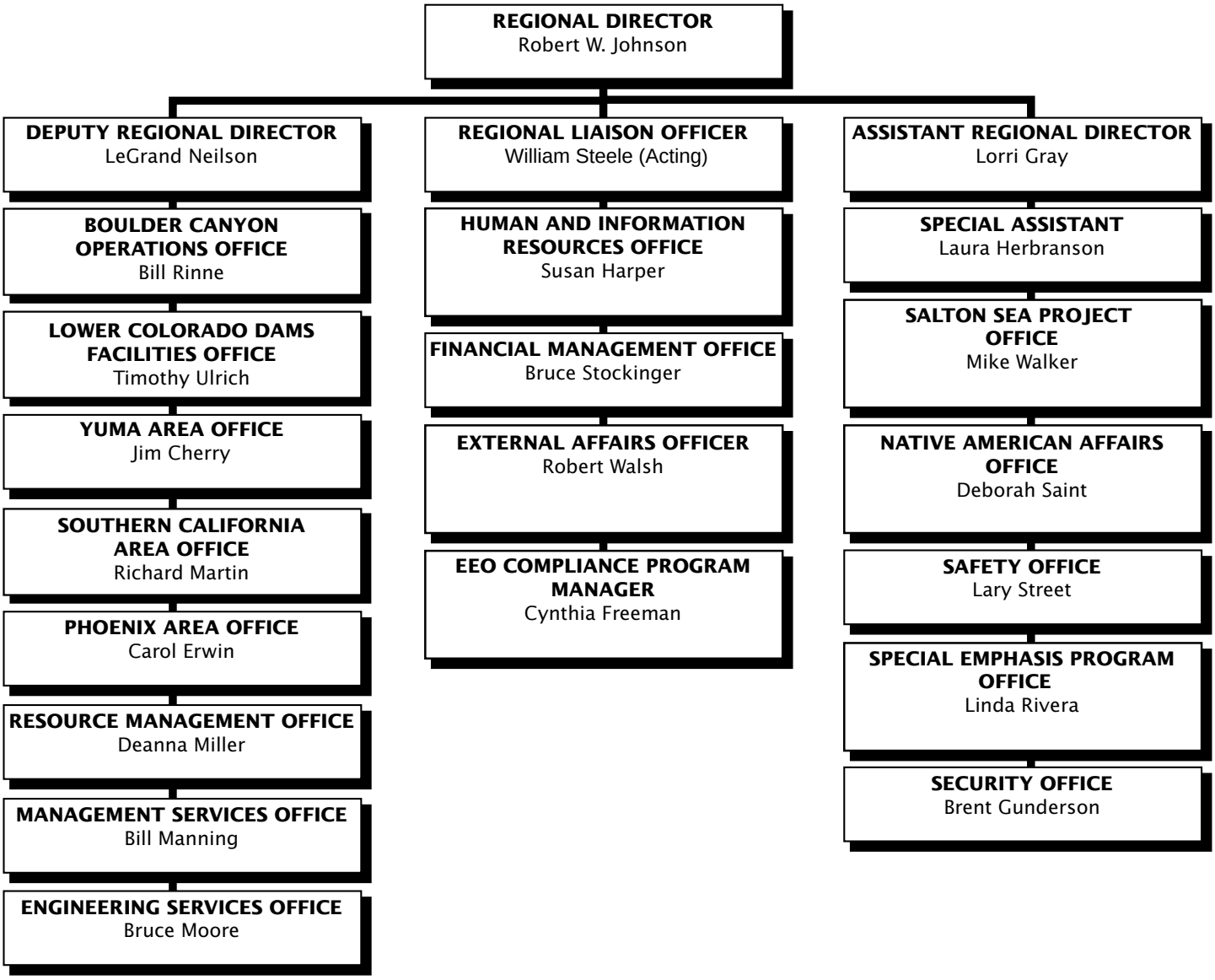
Flood Control. Hoover Dam and Parker Dam are the only facilities on the Colorado River with an authorized flood control function, but all the dams on the river help prevent or minimize flooding. (The modification of Roosevelt Dam on the Salt River in Arizona added flood control to that structure's function also.) In 2000, lower Colorado River dams prevented potential flood damages estimated at $1.4 million. Since 1950, the dams have prevented an estimated $1.1 billion in flood damages.

Drought Protection. Since Hoover Dam was completed in 1935, there has not been a water shortage on the lower Colorado River, although there have been several droughts in the geographic area covered by the LC Region.

LOWER COLORADO REGION



The Lower Colorado Region



Our People

There are about 900 full-time Federal employees in the LC Region. Approximately 150 other people are employed by companies that perform full-time contract services for the Region at Hoover Dam and at the Yuma Area Office as parking attendants, security staff, clerks, and janitorial workers.

Our employees have a highly varied skill mix. Occupational specialties include engineers, biologists, physical scientists, clerks, laborers, safety specialists, power plant operators, geologists, contract specialists, personnel specialists, Equal Employment Opportunity specialists, economists, guides, computer specialists and numerous others.

As new workforce skills are needed to meet changing water resource management challenges, the LC Region has developed the tools to help us meet those skill needs, whether by training our existing employees for new tasks, or by recruiting new employees with the requisite skills. For example, we designed and launched the SMARTT (Students Motivated to Achieve Results Through Training) Program in FY2000. This program allows full-time employees to attend training related to the broader Bureau of Reclamation mission, not just training that pertains to their current job, to prepare them for future assignments. By the end of 2000, 28 employees had used or were in the program. We've also implemented the Student Career Experience Program, which allows managers attending conferences and/or job fairs to interview job candidates and make on-the-spot selections.

We are a culturally diverse organization, and are increasing our cultural diversity each year. The LC Region strongly supports the development of a diverse work force, to help ensure our future organizational success, and to keep us in step with the Nation's - and the world's - work force.

An Effective Organization

In the LC Region, we're continually striving to be cost-effective, efficient, and customer-oriented. We listen to our customers, and, when they suggest something that can make us better, such as reducing our dependence on voice-mail answering systems, we take steps to provide the services that will increase customer satisfaction.

We also continue to emphasize and create training opportunities for employees, supervisors and managers to give them the skills necessary to enhance and improve the organization and increase our effectiveness. Of significance, we saved an estimated $100,000 in training expenditures in 2000, and provided an additional 40 training opportunities for our employees, by implementing a program to provide more specifically-tailored and personalized training, largely by developing and using internal instructors to the extent possible.

In a related effort, our Yuma Area Office designed and developed a database to streamline various processes associated with the training program. The database eliminated cumbersome manual processing associated with delivery of classes on-site, improved the accuracy of supporting documentation, and resulted in an estimated time savings of one hour per class.

Because workplace conflict can rob an organization of its effectiveness, we implemented Alternative Dispute Resolution training for managers and employees to help resolve workplace issues before they become conflicts, or to resolve conflicts when they do occur. Managers and employees also received training in using ADR techniques in day-to-day operations and interactions with our external customers.

To address the issue of workplace violence, should it occur, we established an Incident Response Team in 2000. An interdisciplinary group of managers, supervisors and employees was trained to respond to adverse workplace incidents,

and an incident reporting system was implemented. The team meets regularly to assess any occurrences and identify ways to strengthen our capability in preventing, or responding if necessary, to workplace violence.

Security

Protecting our employees, facilities and visitors is of paramount importance. Accordingly, we continually evaluate security measures at our facilities, and upgrade them as necessary. In 2000, all offices in the LC Region upgraded or certified their Continuity of Operations and Emergency Evacuation Plans. In addition, a retrofit program of all Regional Office facilities in Boulder City with new fire alarm systems was initiated, and planning continued for a workforce consolidation that will move employees from older facilities in Boulder City that do not meet earthquake construction specifications to new office facilities in the town.

At Hoover Dam, we implemented a policy prohibiting visitors from bringing any packages into the Visitor Center as a temporary security measure until a new detection system can be installed. We also reduced access to the dam by non-Hoover employees, continued to emphasize security and safety through increased visibility of the Hoover Dam Police force, and took other appropriate safety and security measures at this highly visible facility.

All LC Regional offices also implemented and are actively participating in the Crime Witness Program, a joint venture between Reclamation and the Bonneville Power Administration to protect each agency's transmission systems, substations, facilities, property and personnel. Signs with a toll free number people can call to report suspicious or criminal activity are posted at facilities throughout the LC Region.

Changing Times

The Lower Colorado Region's program was highly visible throughout most of the 1900's, when the dams, power plants, canals, and transmission lines that help meet today's water and power needs were being built. By the late 1900's, the program had shifted to the less-visible but equally important task of improving the management of already-developed water resources to meet the changing social needs and priorities shaping the modern Southwest.

The demand for water in the LC Region is much greater today than it was in 1902. Now, as then, there is still a large agricultural water demand, of course. But there also is an increasing demand for water to meet the needs of growing towns and cities, Indian tribes, recreational use and environmental purposes, making the challenges to provide reliable supplies of clean water more difficult than ever. This challenge requires that all water management entities - Federal, state and local governments, Indian tribes, water and power users, environmental organizations - work together in partnership to resolve them. And the LC Region is fully involved in that effort.

REGION - WIDE PROGRAMS

OVERVIEW

Managing the Lower Colorado River

Perhaps our most important function in the LC Region is to serve as the lower Colorado River "water master" on behalf of the Secretary of the Interior. In this effort, we work closely with state and local entities, Indian tribes, water and power constituents, environmental groups, other Federal agencies, Mexico and other interested entities.

The Colorado River is one of the world's most physically developed and regulated rivers. It must be managed to meet water and power delivery obligations, protect endangered species and their habitat, enhance recreation and provide flood control. In addition, Reclamation must annually measure and account for the water's use, and maintain the river channel and protective levees.

A complex set of laws, interstate compacts, court decisions and decrees, contracts, an international treaty and other administrative and legal documents that have evolved into what is collectively known as the "law of the river" controls our management activities. We work within this "law" to meet our obligations, using its inherent flexibility to seek solutions to today's water management and use challenges.

An Annual Operating Plan (AOP) is developed each year - in cooperation with the States, water and power users, and other interested parties - to manage the river. The AOP, which the Secretary must approve, determines how much water is available to users for the year, and how the water will be delivered. The AOP is modified during the course of the year, if necessary, and in consultation with the States and other interested parties, to meet changing conditions.

In calendar year 2000, as in all previous years, Reclamation delivered full water and power supplies to all Colorado River users in Arizona, California, Nevada, and Mexico. In addition, since calendar year 2000 was a "surplus" year (meaning there was enough water available to allow lower Colorado River water contractors to receive more than their basic annual apportionment) many of these users requested, and received, more than their basic entitlement.

Modernizing River Management

Of the LC Region's many accomplishments in 2000, perhaps none was more significant than the development of new, interim guidelines for surplus criteria. This effort, culminating four years of concerted effort, will help reduce Colorado River use over the next 15 years, for the benefit of all river users. This effort was developed jointly with Reclamation's Upper Colorado Region, and in consultation with the seven Colorado River Basin states.

Until 1996, there was sufficient Colorado River water available to meet the beneficial needs of Nevada, California and Arizona. In 1996, for the first time ever, consumptive use by these states exceeded their combined 7.5 maf annual allocation. This signaled the beginning of a new era in Colorado River management. Aware that this change was coming, Reclamation began a concerted effort to develop new mechanisms that, within the "law of the river," could be used to help meet the growing water needs of the lower basin.

The key to future management of the Colorado River is to reduce California's use to its basic 4.4 maf allocation. In May 2000, with encouragement and assistance from the Department of the Interior and the other Colorado River Basin states, California completed a conceptual plan for gradually reducing its over-use of Colorado River water. LC Region staff played a major role in the plan's development, providing technical data and other support throughout its evolution.

To support California's plan, Reclamation developed interim surplus guidelines in 2000. These guidelines, which will be in effect from 2002 through 2016, will help California reduce its Colorado River use over the next 15 years. The guidelines provide specific criteria to be used in determining the conditions under which surplus water will be declared available for use within Arizona, Nevada, and California. The guidelines will provide certainty that California will continue

to receive much needed Colorado River supplies as long as it is moving forward with its Colorado River reduction plan. They also will provide the other six basin states a greater degree of predictability about when surplus water may or may not be available. Prior to development of these guidelines, this annual determination was based on a number of factors, none of which were very specific.

Part of California's plan for reducing its Colorado River water use is a proposed water transfer from the Imperial Irrigation District in southern California to San Diego. Reclamation is the lead federal agency preparing the environmental documentation for this effort.

Accounting For The Water

Reclamation is required by the U.S. Supreme Court Decree of 1964 in Arizona v. California to account for the consumptive use of lower Colorado River water. In response to a request from the lower basin states to refine consumptive use estimates, Reclamation developed and is testing the Lower Colorado River Accounting System (LCRAS). The first report demonstrating this method was issued in 1995, and work with the basin states to refine the LCRAS continued in 2000. The methods used in LCRAS are expected to continue to evolve as new information and techniques become available and potential improvements are identified through reviews and experience.

Water Conservation

Promoting water conservation to increase the availability and effectiveness of Colorado River water use and other water resources is a key LC Region program. A Water Conservation Field Services Program (WCFSP) assists local water users in meeting their conservation objectives by helping them implement conservation measures, assisting with conservation planning and education efforts, and demonstrating new technology and innovative techniques.

The LC Region committed more than $2 million for water conservation activities in 2000, a commitment matched by local funds. Twenty-one districts received assistance with their water conservation planning efforts, and, by the end of the year 2000, 88 of the 89 districts in the LC Region had water conservation plans in final form. Since its inception in 1997, the WCFSP has resulted in conservation of more than 71,000 acre-feet of water valued at approximately $18 million.

Through the WCFSP, the LC Region has: provided mobile labs to train farmers in southern California and Arizona in water and salinity management; sponsored workshops and conferences; supported water conservation education through Internet sites, newsletters, conservation plan guidebooks and an Internet-based irrigation scheduling program; demonstrated new technology and innovative watering techniques such as trickle irrigation on citrus, flow measurement, diagnoses of soil salinity, turf grass reduction, soil moisture sensors, and other activities; and provided financial or technical assistance to help implement water conservation measures such as low-flow toilets, moisture sensors, flow controllers, plumbing retrofits, measuring devices, and canal automation systems.

Native American Activities

In Arizona, Nevada and California, the LC Region participates in and supports Interior Department efforts to negotiate water rights settlements and uphold Indian Trust responsibilities, and to implement programs under various Reclamation authorities to help Tribal governments protect, manage and develop their water and related resources. (Specific activities are detailed under the individual state sections.)

Region-Wide Programs

Environmental Activities

Efforts to mitigate the environmental effects of project development on natural and cultural resources, endangered species protection and conservation, and habitat improvement have long been part of the LC Region's program. Mitigation programs have created backwaters for fish and wildlife habitat, and funded research on endangered species such as the bald eagle, bighorn sheep, peregrine falcon, Yuma clapper rail, and razorback sucker to help ensure their continued existence. Today our environmental programs, typically conducted in partnership with other agencies and entities, focus more on endangered species recovery, fish and wildlife protection measures and studies to prevent future listings of endangered species.

For example, in the year 2000, we continued a cooperative effort with Ducks Unlimited and the Cibola National Wildlife Refuge to restore two old river meanders at Cibola Island on the lower Colorado River. Non-native salt cedar is being replaced with native riparian and wetland vegetation, and hydrologic and ecologic requirements necessary to establish native riparian communities are being re-created.

Partnership efforts with the Fish and Wildlife Service, Arizona Game and Fish Department and other agencies to identify locations of and investigate methods for eradicating or controlling giant salvinia, a noxious weed discovered on the river in 1999, also continued. Research was conducted on both chemical control and physical removal techniques for this weed, which multiplies rapidly and can quickly cover the surface of a lake or stream, kill native plants, choke fisheries and hamper boating and other recreational activities.

Implementation of a Reasonable and Prudent Alternative (RPA) from the U.S. Fish and Wildlife Service to avoid jeopardizing the continued existence of the endangered bonytail chub, razorback sucker, and southwestern willow flycatcher through routine, ongoing lower Colorado River operation and maintenance activities also continued throughout 2000.

- The fifth year of flycatcher surveys and habitat restoration/protection activities was completed in 2000. The surveys have added volumes of data to what biologists knew about the bird when it was listed in 1995. For example, biologists did not believe the bird nested along the lower Colorado River because of habitat loss. Surveys funded by the LC Region, however, have shown that more than100 pairs of flycatchers nest and breed on the river and its tributaries.

- The acquisition of 1,400 acres of known or potential flycatcher habitat, an initial requirement of the RPA, was completed in 2000. The lands include 580 acres acquired through a conservation lease agreement with the Ft. Mojave Tribe, 120 acres on the upper Gila River in New Mexico, 517 acres on the Virgin River, 105 acres on the Big Sandy River, and 85 acres on the San Luis Rey River (acquired with the assistance of the Conservation Fund and the National Fish and Wildlife Foundation). Habitat acquisition efforts are continuing through purchase of deeds and conservation easements.

- Reclamation biologists continued to support and lead the Native Fish Work Group effort to protect and restore the endangered razorback sucker. Initiated in1990 as a voluntary action under Reclamation's leadership, the Group has been collecting razorback fry from Lake Mohave, home to the largest remaining population of the fish, since the mid-1990's, and raising them in predator-free environments for approximately one year. When the fish are about 12 inches long, they are returned to the lake or planted at other locations in the lower river. More than 40,000 juvenile razorbacks have been successfully raised and returned to the wild, and more than 100,000 are being reared for release back to the lake. About 50 percent of the fish returned to the lake are believed to be successfully spawning, and fishery biologists believe they will help ensure the species' continued existence.

Region-Wide Programs

Restoring Habitat

As part of a long-term effort to restore native habitat along the lower Colorado River, Reclamation biologists added 25 willows, 103 cottonwood trees, 109 mesquite trees, and 341 quailbush to the 20-acre River Mile 31 revegetation area north of Yuma in 2000.

As part of the Imperial Division Backwater Restoration Project, on the Arizona side of the Colorado River about one mile north of Imperial Dam, about 20 acres of wetlands were created and some existing wetland areas were restored. This project renewed water flow from the river to several small backwater lakes, isolated and deteriorating wetland areas, and scattered stands of native riparian trees isolated from the river flows. A mix of 60 willows and cottonwood trees were also planted as an initial revegetation effort in this area; the revegetation activity will continue in 2001.

LCR Multi-Species Program

Development of the Lower Colorado River Multi-Species Conservation Program (LCRMSCP), a partnership with Indian tribes and state, Federal and private entities, also continued in 2000. This program is intended to implement conservation measures that will move endangered and threatened species toward recovery while accommodating current and future water and power operations on the lower Colorado River. Supplemental scoping meetings were held in July and August 2000 to seek additional public comment and suggestions on alternatives, issues and concerns that should be addressed in a draft EIS/EIR. A final EIS for the project is scheduled to be completed in 2002.

Wetlands

The LC Region is participating in numerous cost-shared efforts to develop or improve wetlands, which can improve water quality and provide fish and wildlife habitat and recreational opportunities. Details on these efforts are located in the individual state writeups.

Hydroelectric Power Activities

To ensure our powerplants are managed and operated cost-effectively and efficiently, we've been bench-marking their performance against the best in the industry since 1997.

As a result of decreasing the operational costs of the 17 commercial generating units at Hoover Dam by more than $500,000 over the past four years - largely by reducing the number of operating personnel, decreasing overtime, and increasing the powerplant's reliability by completing installation of a computerized Supervisory Control and Data Acquisition System - the dam was listed as a leading performer in operations in a 2000 bench-marking competition that compared similar-sized hydroelectric facilities from throughout the world that were more than 40 years old. Hoover Dam was also ranked in the top half of all such facilities for maintenance.

In the same competition, Davis Dam and Parker Dams, ranked against medium-size hydroelectric facilities from around the world that were more than 45 years old, were listed as leading performers in both operation and maintenance for the fourth year in a row.

To increase the benefit of our powerplants for our customers, and for the power grid in general, the conservative and traditional practice of block loading the generating units at Davis Dam was discontinued in 2000. (Block loading is the practice of setting a generating unit at a static level and leaving it there for at least one hour before modifying the level, if needed, to adjust for changing downstream water demand.) When units are block-loaded, the customers do not receive the benefit of a powerplant's regulatory capabilities.

Instead of block loading the powerplant, we now operate one or more of the generators at varying load levels during the day. This way, the powerplant is better able to provide voltage and frequency support to the electric power grid, provide a source of reserve power, and provide load-following capability. (Load-following capability means the generating units adjust to respond to changes in power demand. By having multiple generating units at various locations able to follow the load demand, there is better stability in the electrical system.)

By implementing aggressive and regular non-destructive testing programs at Davis Dam, we also prevented large-scale unscheduled outages on two generating units. The testing programs enabled us to discover potential problems in one of the powerplant's transformers and replace it before it failed, and allowed us to take preventative measures to keep a generating unit at the dam from failing because of excessive ozone concentration.

Reducing Risk To The Public

One of Reclamation's highest program priorities is its Safety of Dams program, conducted to ensure our dams continue to operate safely and reliably and to meet the purposes for which they were constructed. In the LC Region, as in other Regions, we routinely conduct safety reviews of our dams, including those operated by other agencies, on a scheduled basis. Inspections were conducted at Hoover, Parker, New Waddell, and Horseshoe Dams in 2000.

Emergency action plans for each Reclamation dam on the lower Colorado River have also been completed. We work closely with local and state emergency management personnel to educate them about our plans and to help them develop or revise dam-specific warning plans for their communities. Our assistance includes providing inundation maps, flood travel times, maximum flood depths, and other appropriate information.

International Relations

The Colorado River serves both the United States and Mexico. Reclamation's responsibilities for delivering water to Mexico are contained in a 1944 treaty and in subsequent additions - or "Minutes" - to the Treaty. Working through the State Department's International Boundary and Water Commission, we routinely meet with Mexico to discuss such issues of common interest as water quality, sediment control or reduction, land issues and other topics. These meetings are instrumental in helping resolve issues that periodically arise between our two countries.

A major activity that benefits both Mexico and the United States is the Morelos Basin Sediment Dredging project. Initiated in 1999, this is the largest dredging operation ever undertaken by Reclamation. At the end of 2000, the project had removed approximately one million cubic yards of sediment from a 9,000-foot long section of the river above Mexico's Morelos Dam. The sediment, deposited when the Gila River flooded in 1993, made the Yuma area more susceptible to flooding and high groundwater problems, raised the potential of damages to local and Federal facilities if high water occurred before it could be removed, reduced Mexico's diversion capacity into the Alamo Canal, and increased the amount of sediment flowing onto agricultural lands in Mexico. This project has reduced the likelihood of damages and helped reduce the impact of the sediment on Mexico. In addition, the dredge material, which is being placed on Quechan Tribal land through an agreement with the Tribe, will be used by the Tribe to further develop its reservation.

Water Resource Education

In addition to its own outreach activities, the LC Region works with other entities to help educate the public about the Colorado River and water resources management. In 2000, we completed our third year of a grant with the Water Education Foundation, a non-partisan California organization. The LC Region helped fund an issue of the Foundation's

quarterly magazine, Western Water, dedicated solely to Colorado River issues, as well as publication of two newsletters on topical river issues. We also initiated development of layperson's guide to lower Colorado River operations by the Foundation, and co-sponsored the Foundation's annual three-day tour of the lower Colorado River, which exposes participants to many views about Colorado River management and use.

Recreation

Reclamation's projects have created unparalleled opportunities for water-based recreational development, in the LC Region and throughout the West. The recreational benefits from this development are extremely valuable; on the Colorado River alone, recreational benefits are estimated to be in excess of $1.25 billion annually. Although Reclamation does not directly manage any recreational facilities in the LC Region except for the Hoover Dam visitor center, we do assist other state and Federal entities who develop and manage recreation at our projects.

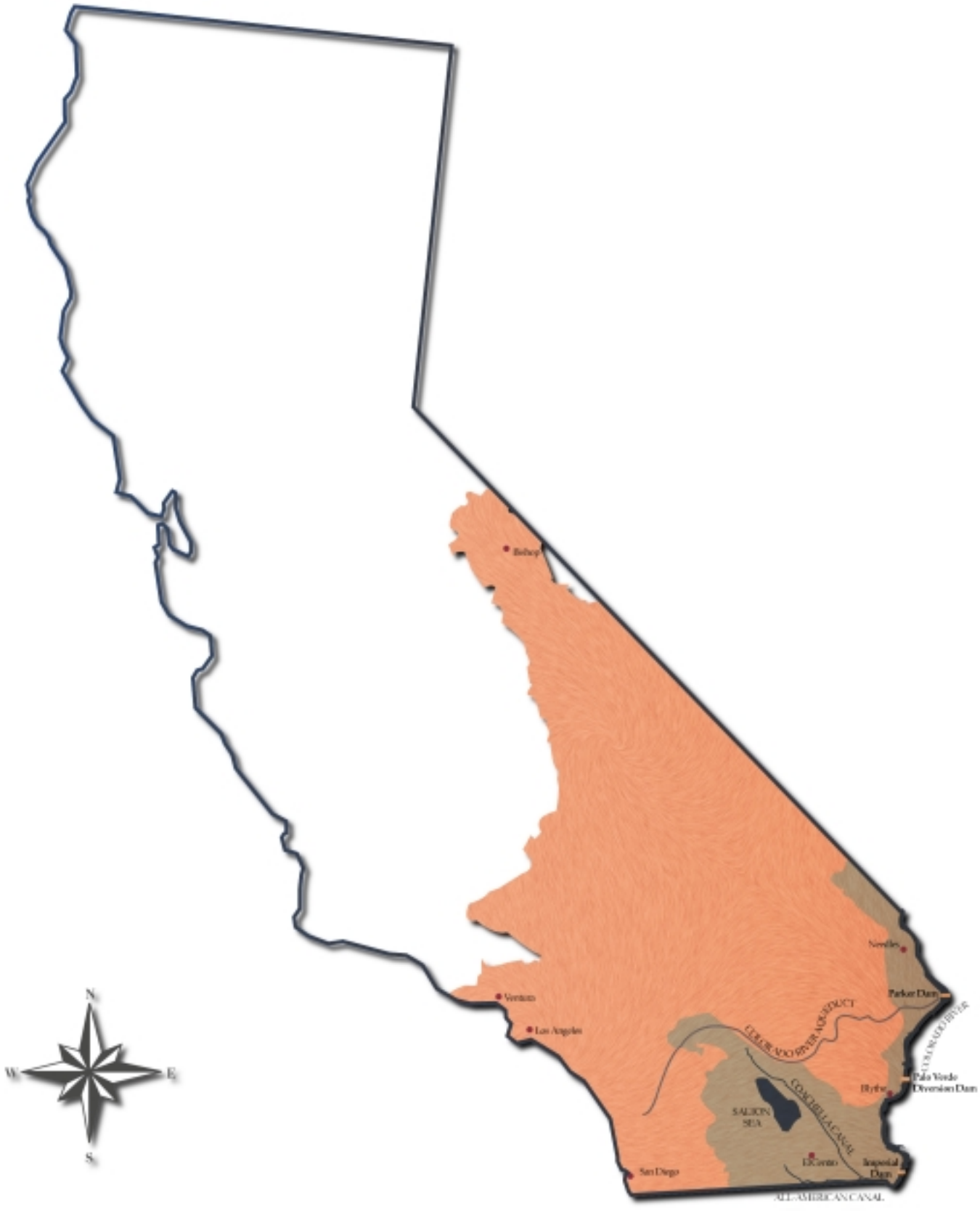
At Hoover Dam, more than 1.2 million people took a guided tour of the facility in 2000, and the visitor program generated more than $12 million. These funds cover all visitor program operation, maintenance and repair/replacement costs, as well as Reclamation's voluntary portion of the debt repayment obligation for construction of the visitor facilities.

Reclamation is also participating in the Federal Recreation Lakes Demonstration Project, an effort to remove barriers between agencies that manage recreation at Federal lakes, and pave the way for more effective planning, development, implementation, and management of recreation programs and activities. Lake Havasu, a lower Colorado River reservoir that spans the Colorado River between Arizona and California at Lake Havasu City, was selected as a demonstration lake for this program.

CALIFORNIA

OVERVIEW

CALIFORNIA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California

Reclamation has been part of southern California's water resources program since the Yuma Project delivered its first water to California agricultural lands in 1907.

Since then, several Reclamation projects in the LC Region have and continue to benefit southern California.

- Hoover Dam, Imperial Diversion Dam, the All-American Canal and the Coachella branch of the All-American Canal provide water, power, flood control and recreation benefits.
- Parker Dam, built by Reclamation with funds advanced by the Metropolitan Water District of Southern California, created Lake Havasu, from which MWD diverts water to the Los Angeles and San Diego metropolitan areas. Fifty percent of Parker Dam's electrical output is reserved to pump Colorado River water through MWD's Colorado River Aqueduct.
- The Colorado River Front Work and Levee System, authorized in 1925, includes levees that protect California lands from flooding and backwaters that provide fish and wildlife habitat and recreation. The front work and levee system helps conserve water that would otherwise be "lost" to seepage, increasing the amount of Colorado River water available.
- The Palo Verde Diversion Dam diverts water from the Colorado River to irrigated lands surrounding Blythe.

The Reclamation program has helped southern California become one of the Nation's premiere agricultural regions and supported the economic growth of both large and small communities. This relationship is continuing through new partnerships and programs that will help the State's southern region address its continuing - and increasing - water needs.

Numerous small water districts in southern California have received funding to upgrade and improve their water delivery systems through the Small Reclamation Project Act Loans program: Eastern Municipal Water District, Elsinore Valley Municipal Water District, Fallbrook Public Utility District, De Luz Heights Municipal Water District, Rainbow Municipal Water District, Ramona Municipal Water District, Rancho California Water District, San Bernardino County-Day Creek Project, Santa Ana Watershed Project Authority, Valley Center Municipal Water District, West San Bernardino County Water District, Chino Basin Desalination Project (dedicated March 3, 2000), Eastern Municipal Water District No. 3, County of San Bernardino, San Sevaine Creek Water Project.

Increasing Water Availability

Reclamation is helping increase water availability in southern California by supporting local efforts in three fields: development of water reclamation and reuse projects, studies to look at new water sources, and water conservation.

Wastewater reclamation and reuse can help postpone or eliminate the need for expensive storage facilities and reduce the State's dependence on imported water.

In 1992, Reclamation initiated the Southern California Comprehensive Water Reclamation and Reuse Study, in partnership with eight southern California agencies. This study helped determine a long-range strategy for more effective development of water reuse programs in the region's coastal and inland valley areas, and provided information about various types of reuse, including landscape irrigation, industrial cooling water, groundwater basin replenishment and various domestic uses. A major study result was the identification of 15 regional and 19 single-agency projects that could be implemented in the next 10 years, should the local non-Federal sponsors choose to do so. If all projects were built, approximately 450,000 acre-feet of reclaimed water would be available in lieu of imported potable water.

Reclamation has supported development of southern California wastewater recycling projects through Title XVI of P.L.

102-575, the Reclamation Wastewater and Groundwater Study and Facilities Act of 1992. These projects will primarily benefit urban areas, but they also will benefit the environment by reducing the demand for imported water from the Sacramento Bay-Delta, Colorado River, and Owens Valley/Mono Basin. Water that otherwise would have been diverted can now remain in storage for future use or, in certain cases, to enhance local fish and wildlife habitat.

In 2000, funding support continued for the Los Angeles Area Water Reclamation and Reuse Project (East Valley Water Reclamation Project, and Terminal Island Water Reclamation Project); San Diego Area Water Reclamation Program (San Diego Water Reclamation Project, Escondido Water Reclamation Project, Padre Dam Municipal Water District Reclamation Project); San Gabriel Basin Project (San Gabriel Basin Demonstration Project, Rio Hondo Water Recycling Program, and San Gabriel Valley Water Reclamation Program); and Port Hueneme Brackish Water Reclamation Demonstration Facility. The agreement with the West Basin Municipal Water District, which provided $50 million for the first phase of its recycled water project, was completed. This project will ultimately recycle about 70,000 acre-feet of water per year.

FY 2000 was also the first year of funding for five of the eight recycled water projects authorized in the 1996 amendment to Title XVI: North San Diego County, Calleguas Municipal Water District, Orange County, Mission Basin (Oceanside), and Long Beach. By the end of the fiscal year, all prerequisites were completed (including feasibility study approval and NEPA compliance), and at least one cooperative agreement was executed for each project.

A water use audit by the Coachella Valley Water District, funded by Reclamation to enable the District to demonstrate its beneficial use of water and to assure continual improvement in water use efficiency, also was completed in FY 2000.

Studies with cost-sharing partners have the potential to increase southern California's water supply and provide other benefits, such as environmental enhancement.

- **Lower Owens River Environmental Study.** Through this study, Reclamation is helping Inyo County and the City of Los Angeles restore the biological integrity of the lower 50 miles of the Owens River by increasing and stabilizing stream flows and optimizing the river's water distribution. Primary study objectives are to develop conceptual and final designs of a pump-back station to provide water to restore native riparian vegetation, restore habitat for indigenous and migratory birds, restore and create backwaters, and create warm water fisheries. In 2000, Reclamation provided construction designs and specifications for a turnout on the Los Angeles Aqueduct, and provided preliminary designs for two pipelines that will be used for both pumping water from the Owens River to the aqueduct, and delivering water from the aqueduct to Owens Lake for a separate dust abatement project.

- **Southern California Water Recycling Projects Initiative.** Initiated in Fiscal Year 2000, this multi-year initiative continues the work begun during the Southern California Comprehensive Water Reclamation and Reuse Study to assist local water and wastewater agencies in final planning and environmental documentation leading to implementation of projects identified in that study. In FY2000, a cooperative cost-sharing partnership with 11 southern California water and wastewater agencies drafted a study Statement of Work, engaged the services of a consultant team, and conducted five regional "kick-off" meetings to inform southern California water and wastewater agencies about the study process and encourage their involvement.

- **The Imperial Valley Water Reclamation and Reuse Study**, also initiated in Fiscal Year 2000, is an effort to develop a comprehensive, cost-effective technique to improve the quality of water in surface drains in the Imperial Valley, and to increase the Valley's overall water supply by taking advantage of opportunities to reuse water now being discharged into the drains. The study was initiated after an evaluation of various methods to reduce selenium and other constituents of concern in the Valley's surface water in 1999 indicated poor performance of the technique previously being used.

Santa Margarita Watershed Water Supply Augmentation, Water Quality Protection, and Environmental Enhancement Program. Reclamation holds three water rights permits totaling 195,000 acre-feet on the Santa Margarita River. Local and Federal partners who originally provided the water permits to Reclamation for proposed surface water impoundments recently asked Reclamation to examine the possibility of identifying and implementing a "functional equivalent" to those surface impoundments. Subsequently, a joint effort was initiated to identify and evaluate feasible opportunities for constructing groundwater recharge projects within the watershed and seasonal banking projects outside the watershed that would allow the granting of a water right for some or all of the original surface impoundment permits. In FY2000, a Statement of Work was developed with stakeholders in the watershed and a consulting firm was awarded a contract to help establish a framework water quality monitoring plan that will be developed to meet local goals and impending regulatory mandates for the Santa Margarita watershed, and to facilitate further investigations into perfecting the water rights.

Southern California Coastal Study. With the Los Angeles County Department of Public Works and the Water Replenishment District of Southern California, the LC Region in 2000 initiated a cost-share investigation of the potential for using air to supplement or replace imported water for injection into the subsurface seawater intrusion barriers in the Los Angeles Basin. This investigation is the final part of the Southern California Coastal Study. Water injected into the seawater barrier wells maintains a ridge of groundwater higher than the ocean, which prevents seawater from migrating inland to areas where the water table is lower than the ocean. If successful and cost effective, air injection will reduce the quantity of imported water used to maintain the seawater barriers.

Los Angeles County Basin Watershed Water Supply Augmentation, Pollution Prevention, and Drinking Water Protection Study. The Los Angeles County Basin watershed and adjacent coastal Los Angeles County watersheds are heavily dependent on imported water, subjecting their population to increasingly unreliable water supplies because of growing urban and industrial demands, environmental competition and competition from water users outside the watersheds. Reclamation is working with local water, wastewater, and storm water management agencies to identify feasible local water supply development and management strategies that can help ease pressures on imported water supplies. With academic, environmental, and community- based organizations and municipalities, the parties formed the Los Angeles and San Gabriel Rivers Watershed Council to evaluate the beneficial opportunities associated with the water supply management issues in the watersheds and to identify multi-purpose solutions which benefit multiple partners. One potential water source is storm water runoff, which could potentially be used to recharge groundwater storage aquifers, particularly in the Los Angeles County Basin. But many issues must be addressed before any action can be taken: how feasible is large-scale implementation of on-site recharge techniques; how much water would 3/4-inch of the storm water flows represent; what pollution, water supply, and environmental degradation costs would be avoided by storing this water; what are the impacts on groundwater from this recharge, including impacts to aquifers used to supply drinking water; and what institutional and regulatory issues must be addressed to redirect a potentially expensive pollutant source into a beneficial local reliable water supply. In FY2000, Reclamation gave the Council a $50,000 grant to prepare a literature search and theoretical framework for evaluating the efficacy of recharge using the first three-quarters of an inch of storm water, and local members of the Council contributed an additional $340,000. These funds will be used to continue monitoring work identified in the literature search and framework definition phase.

Water Conservation

Through the Water Conservation Field Services Program, we assist many southern California water users in their efforts to develop innovative conservation planning efforts and implement sound conservation measures.

In FY 2000, we funded approximately $500,000 in water use efficiency activities in southern California, entering into16 grants or cooperative agreements that will help local water agencies reduce their demands on imported water supplies through water management planning, conservation education, demonstration activities, the implementation of Best Management Practices, and the development and implementation of water management plans.

In addition, efforts to develop the joint Federal/State Environmental Impact Statement/Environmental Impact Report for the Imperial Irrigation District/San Diego County Water Authority water conservation and transfer project continued in 2000. Reclamation is the lead federal agency for this effort, working in partnership with the Imperial Irrigation District, San Diego County Water Authority, and others. The project will conserve up to 300,000 acre-feet of agricultural water through on-farm measures in the IID, with subsequent transfer of this water through the Colorado River and San Diego Aqueducts for urban use in San Diego. A draft EIS/EIR is scheduled for public release in 2001

Environmental Activities

The Salton Sea, formed in 1905 when Colorado River flood flows were accidentally diverted into the Salton Sink, is California's largest water body. But deteriorating conditions have substantially impacted its migratory bird, fishery and recreational uses. Reclamation has been involved in several efforts to address salinity concerns at the Sea since the late 1960's. In 1998, Reclamation joined with the Salton Sea Authority and other agencies to prepare an engineering and environmental review of potential alternatives for cleaning up and restoring the Sea. In January 2000, the Interior Department recommended several actions (enhancing recreation facilities, shoreline cleanup, a fish harvesting program, and an integrated wildlife disease study) to address immediate clean up goals, as well as a pilot salt removal demonstration project to help identify medium-term restoration efforts. A Draft Environmental Impact Statement-Environmental Impact Report on the various alternatives was issued for public review in late January 2000; that document is currently being revised and supplemented to address the reformulation of the initial alternatives, explore additional alternatives, and present a preferred alternative. An appraisal report evaluating all alternatives is scheduled for public release in late 2001; the draft revised supplemental EIS/EIR is scheduled for release in spring 2002.

Concurrent with this work, the Salton Sea Authority awarded a $1.5 million contract for the design and construction of a six-month long, Enhanced Evaporation System (EES) pilot/demonstration project to compare three potential salinity reduction technologies. Two of the technologies will be examined in a 700-hour pre-test that may provide data to improve the design and operation of the pilot project. Development of the pre-test began in late November 2000, preparation for the pilot/demonstration project is scheduled to begin in February 2001.

As a participant in the Citizen's Congressional Task Force on the New River, Reclamation helped design and construct the Brawley Constructed Wetlands Demonstration Project. Consisting of two separate wetlands areas, this project will provide data on the ability of constructed wetlands to treat heavily-polluted river water and irrigation drainage water. Data from the demonstration wetlands, which began operating in 2000, will be used to determine the potential for constructing even larger wetlands that could help clean up polluted New River flows before they discharge into the Salton Sea, helping improve the quality of this water body as well.

Native American Program

Reclamation continued its contacts with southern California Indian tribes in 2000 to determine what, if any, assistance it could provide them. We also continued to provide technical assistance to the tribes to help them manage their water-related resources. The assistance ranged from simply providing available data to analyzing complex water quality, groundwater, and instream flow requirements, or performing specialized hydrologic, economic, social, sedimentation, planning, environmental, or engineering analyses.

Facility Maintenance and Rehabilitation

Reclamation takes great pride in maintaining its facilities, some of which are more than 50 years old, in excellent working order so they can continue to fulfill their functions and protect the Federal investment in them.

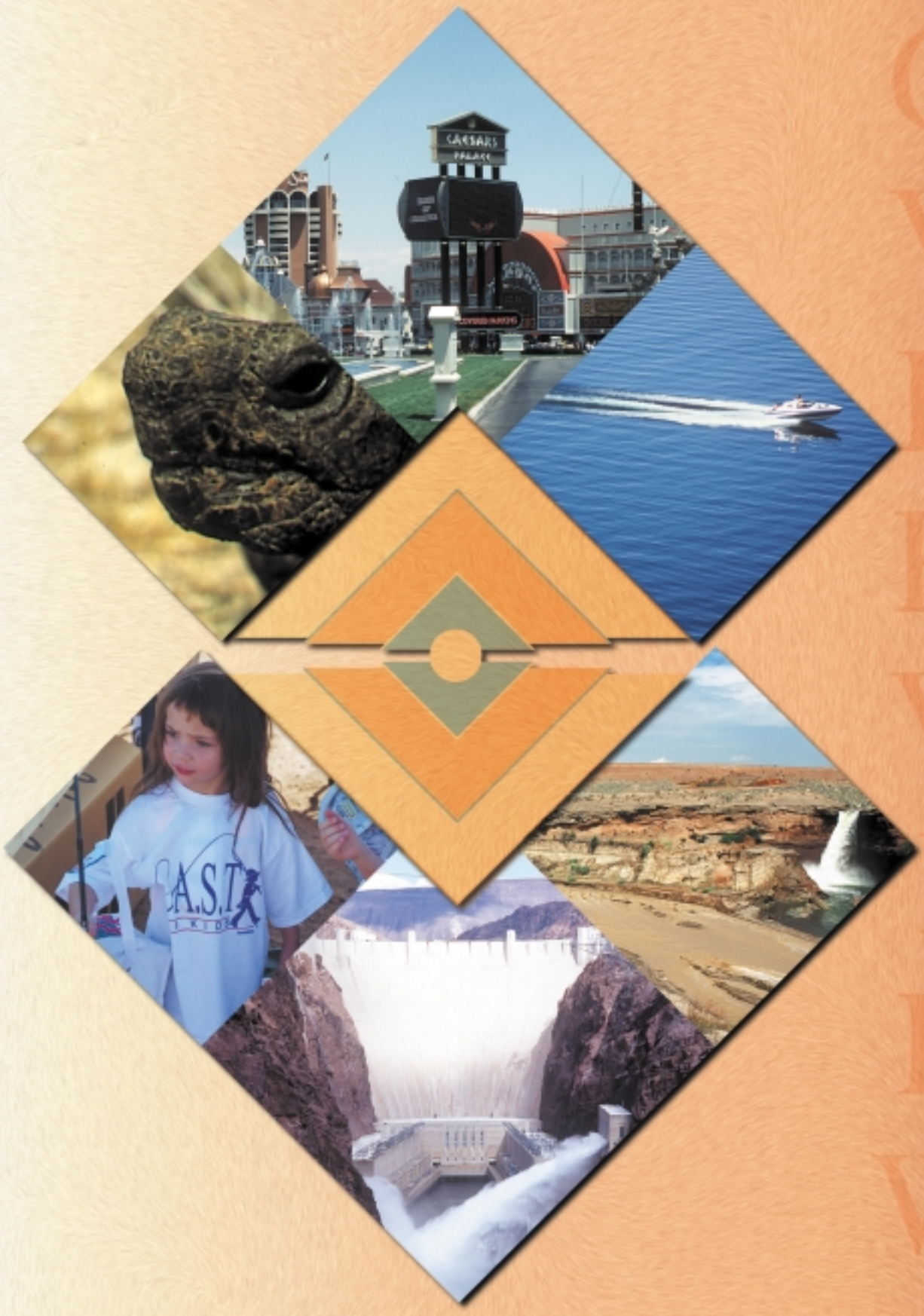
California

At Parker Dam, which spans the Colorado River between California and Arizona north of Parker, Ariz., a three-year program was initiated in FY 2000 to rehabilitate the dam's five spillway regulating gates to ensure their continued proper operation and reliability. The dam's six-ton spillway superstructure crane also was rehabilitated to facilitate the removal of the spillway regulating gate hoists. A contract will be awarded in FY2001 to paint and rehabilitate the spillway regulating gates.

International Activities

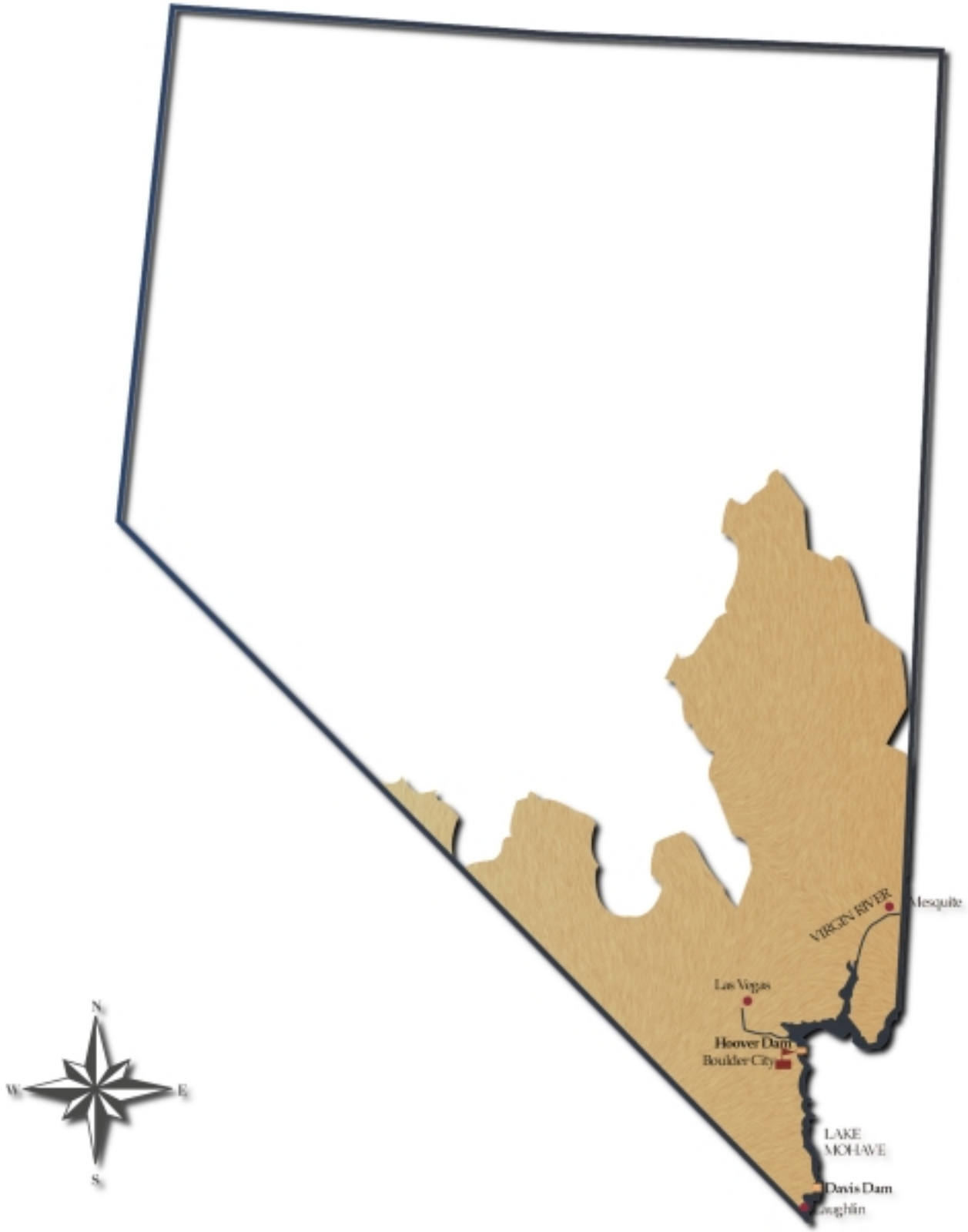
Reclamation continued as a member of the Border Water Council, which addresses cross-border issues between Mexico and the United States, including water supply and quality, in the San Diego-Tijuana area.

NEVADA



OVERVIEW

NEVADA


VIRGIN RIVER
Mesquite
Las Vegas
Hoover Dam
Boulder City
LAKE
MOHAVE
Davis Dam
Laughlin
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Nevada

Reclamation's presence in Nevada began early: in 1903, only one year after Congress authorized the program, the Newlands Project in northern Nevada was authorized.

Since 1903, several other Reclamation projects important to Nevada's water management have been developed. In southern Nevada, these include the Boulder Canyon Project (Hoover Dam and Lake Mead), Parker-Davis Project (Davis Dam), and Southern Nevada Water Project (Robert B. Griffith Project). These projects provide municipal and industrial water, hydroelectric power, and recreational opportunities to most of the State's population.

Increasing Water Availability

State and local agencies have been actively planning to meet southern Nevada's increasing water supply needs, and to protect the quality of their existing supplies, for several years, and Reclamation is fully engaged with them in these efforts.

In 2000, Nevada and Arizona initiated discussions on an agreement that would permit the two states to engage in inter-state banking of Colorado River water, under the off-stream storage rule Reclamation implemented in 1999. The rule enables Arizona to store some of its unused Colorado River apportionment in its ground water aquifers for Nevada's future benefit. Through this agreement, Nevada would be able to take additional Colorado River water directly from Lake Mead to meet its needs at some future time, while Arizona would forego use of a similar amount of its Colorado River apportionment, and use the stored water instead. The agreement, which will require Reclamation's approval, is expected to be implemented in 2001.

Water Conservation

Reclamation's Water Conservation Field Services Program is very active in southern Nevada, working closely with the Southern Nevada Water Authority, Las Vegas Valley Water District and other local agencies to promote and support water conservation in this area.

In 2000, through the WCFS program, Reclamation provided conservation planning assistance to10 southern Nevada water districts; reviewed the annual Colorado River water diversion requests and status of water conservation efforts of local water purveyors; performed technical reviews of two water conservation plans; and participated in monthly SNWA conservation work group meetings and monthly Las Vegas Urban Resources Partnership meetings.

In addition, the program sponsored four Project WET (Water Education for Teachers) workshops, a Sunset magazine landscape and irrigation guide for the desert Southwest, development of groundwater models to help demonstrate water resources management concepts to 85 fourth grade classrooms, one month of Nevada's annual water education calendar, the May 2000 issue of Wild Outdoor World magazine on "Big Rivers" for fourth and fifth grade students, education initiatives with SNWA for development of a video on Xeriscape landscaping and a local newsletter with Spanish translations, and development of a water conservation software game tailored to southern Nevada's water resource management needs and issues.

We also continued to support the on-going Xeriscape Conversion Study with the SNWA. The second phase of data analysis from this study shows that a 39 percent savings in water has been achieved by converting turf areas to xeriscaped landscapes.

[1] Reclamation and the State of Nevada jointly developed the Griffith Project, which delivers water from Lake Mead to the Las Vegas Valley.

Nevada

The second year of a demonstration project with the University of Nevada-Reno Cooperative Extension on water efficient plant research was completed in 2000. The goal of the study is to add 10 trees, 10 shrubs and 10 ground covers to the list of sustainable, drought-tolerant vegetation for southern Nevada. Research will also be conducted on potential means of reducing outdoor urban landscape water consumption. In 2000, a variety of native and non-native drought-tolerant trees, shrubs and ground covers was planted in Las Vegas valley highway medians, and the plants are now being monitored and observed to collect study data.

A cooperative study with the SNWA on horizontal axis clothes washers was terminated after a survey of study participants showed that nearly 80 percent who purchased a horizontal axis clothes washer would have made that purchase even without any financial incentive. The study was initiated to determine if industry statistics indicating horizontal axis washers achieve water and energy savings of 47 percent and 56 percent, respectively, were accurate. Reclamation will use future resources targeted for this study to explore expansion of other retrofit programs.

The cost-shared landscape conversion study with the National Park Service at Lake Mead National Recreation Area also continued in 2000. In this effort, the ditch irrigation systems NPS now uses to water campground vegetation are being converted into drip systems, and non-native vegetation at Echo Bay and Cottonwood Cove campgrounds is being replaced with drought-tolerant vegetation. This rehabilitation is expected to save about 160 acre-feet of water per year, reducing current consumptive use by 70 percent.

We also implemented a grant with the Conservation District of Southern Nevada in 2000 to provide for the development and maintenance of a "Backyard Conservation Demonstration Garden" on a two-acre parcel of land in Henderson. The garden will demonstrate viable ways of reducing outdoor urban landscape water consumption by educating homeowners about how to plan and design efficient irrigation systems and outdoor urban landscapes.

Maintaining and Protecting Water Quality

Reclamation is a participant in the Las Vegas Wash Coordinating Committee and Lake Mead Water Quality Forum, multi-agency groups investigating methods for developing and implementing a practical, comprehensive approach for managing the Wash to improve water quality and reduce the likelihood of water quality problems in Lake Mead. As part of its efforts in support of this program in 2000, the LC Region continued limnologic studies in Lake Mead, began installing a demonstration floating wetlands in Las Vegas Bay, designed a demonstration wetland to be built in the area of the Wash, completed field work for determining sediment depth in Las Vegas Bay, initiated a study of off-channel wetlands and a sediment transport study of the Las Vegas Wash, completed an archaeologic survey of the upper Wash, and awarded a contract to the University of Nevada-Las Vegas (UNLV) for an intensive monitoring program on the Wash and its major tributaries.

Environmental Activities

Environmental protection and restoration of natural habitat for native fish and other species is a significant part of the LC Region's southern Nevada program. Several major environmental activities continued in 2000.

- Restoration of the Laughlin Lagoon was completed in September 2000. This rehabilitation was initiated in 1998, at the request of local interests. The Lagoon was dredged to deepen it for better boat access, and new culverts were installed at its upper end to improve water flow and water quality.

- A cooperative agreement with the SNWA to study the Lake Mead razorback sucker population was continued. A sampling program conducted by SNWA was extended beyond Las Vegas Bay and Echo Bay to see if there are razorback populations in other parts of the lake, and to gather demographic information on the populations if they do exist.

Larval razorback were captured at the Lake's inflow during spring 2000, and a single female adult was found there during the summer. Netting surveys will be expanded in 2001.

Funding support for the Nevada Breeding Bird Atlas project continued with the provision of a $35,000 grant to the Great Basin Bird Observatory for additional work needed to survey remote and difficult-to-access areas so information could be acquired to complete the project. Field work for the atlas, which will contain information on all birds in the State of Nevada, was completed in 2000, and the atlas should be published in 2001.

UNLV received a $10,000 grant from the LC Region to further the Native Fish Working Group's efforts to protect and restore the population of endangered razorback suckers in the lower Colorado River. The funding was for the study of semi-permeable fish control structures at Beal Lake, in the Havasu National Wildlife Refuge. The study will look at several designs for a structure that would allow sufficient water to pass from one body of water to another without allowing fish eggs and larvae to pass through the structure. The structure would be used to keep the eggs and larvae of non-native fish species from entering riverside ponds where endangered fish species are raised.

Recreation Activities

Lake Mead, created by Hoover Dam, and Lake Mohave, created by Davis Dam, form Lake Mead National Recreation Area, America's first national recreation area and one of its premiere recreation sites. Managed by the National Park Service, the LMNRA contributes millions of dollars to southern Nevada's economy each year from the millions of visitors who swim, boat, fish, water ski, camp, and hike the area each year.

In May, 2000, the LC Region conducted its second "Catch A Special Thrill" (C.A.S.T.) event at Lake Mead. Through this program, 30 Las Vegas/Henderson-area children with disabilities or other disadvantages enjoyed a day of recreational fishing and boating, food and fun at the reservoir. Several local private, state and Federal entities supported the event, providing boats, food, equipment and prizes. Together, more than 70 people volunteered a Saturday to ensure these children would enjoy their first - and possibly only - fishing and boating experience.

We also continued to participate in the partnership that is developing the River Mountains Loop trail, which is part of a system that will provide 35 miles of trail for hikers, bicyclists, and equestrians in the Las Vegas Valley/Boulder City/Lake Mead/Hoover Dam area.

In the Laughlin area, we initiated a study to determine the potential for developing community-supported, economically viable commercial recreational activities on Reclamation-owned lands near Davis Dam. It is our intent to provide recreational opportunities that would be compatible with other recreational uses of the river and the area's other natural resources. The study, scheduled for completion in late 2001, could have a potentially significant and positive economic impact on the Laughlin/Bullhead City area.

Community Involvement

In addition to its involvement in specific water supply and management projects, Reclamation also conducts other programs that benefit southern Nevada communities.

For example, we provide substantial financial and other support for the Southern Nevada Hispanic Employment Program Council. In 2000, the LC Region's Special Emphasis Program Manager was the SNHEPC President. In the Council's history, five of its presidents have been LC Region employees.

We also are involved in UNLV's Minority Engineering Program; several LC Region employees are Advisory Board members. In October 2000, 32 UNLV minority engineering students and three UNLV engineering professors spent a half-day at Hoover Dam learning what Reclamation engineers do and what the potential opportunities are for an engineering career with Reclamation.

In 2000, the LC Region also served on an advisory board of the Clark County School District 21st Century Community Learning Center Program; sponsored the First Annual Water Resources Institute Conference; continued its participation in a program targeted to meet the needs of Limited English Proficient students and parents; continued to sponsor and support educational activities such as the Bridge Building Contest and Science Bowl; worked with other community organizations to host "Dia de los Ninos" (Day of the Child), a multi-cultural celebration focused on children that featured exhibits, games, health screenings, immunizations, and entertainment; and helped develop and implement a "Building Bridges in a Diverse America" program through which African-American and Latino business and community members meet to discuss common needs in economics, education, and employment.

ARIZONA

OVERVIEW

ARIZONA


Glen Canyon Dam
VIRGIN RIVER
COLORADO RIVER
Navajo Indian Reservation
Hoover Dam
LITTLE COLORADO RIVER
Hopi Indian Reservation
LAKE MOHAVE
Davis Dam
Flagstaff
Navajo Indian Reservation
VERDE RIVER
LAKE HAVASU
Parker Dam
Headgate Rock Dam
Colorado River Indian Community
Horseshoe Dam
New Waddell Dam
Bartlett Dam
SALT RIVER
Palo Verde Diversion Dam
CENTRAL ARIZONA PROJECT
Roosevelt Dam
San Carlos Apache Indian Reservation
Phoenix
Salt River Ind Res
Gila River Ind Res
GILA RIVER
SAN FRANCISCO RIVER
Coolidge Dam
Imperial Dam
GILA RIVER
Yuma
Tucson
Tohono O'odham Ind Res
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Arizona

The Reclamation program has been instrumental in Arizona's water development and management efforts since 1903, when Congress authorized the Salt River Project, featuring Theodore Roosevelt Dam, to provide the growing community of Phoenix a year-round water supply and protect it from the floods that periodically roared down the Salt and Verde Rivers.

Other projects followed: the Yuma Project and Laguna Dam in 1904; the Yuma Auxiliary Project in 1917; the Colorado River Front Work and Levee System in 1925; the Boulder Canyon Project with Hoover Dam and Imperial Diversion Dam in 1928; Parker Dam in 1935; the Gila Project in 1937; Davis Dam in 1941; Glen Canyon Dam in 1956, the Central Arizona Project in 1968; and the Colorado River Basin Salinity Control Act, featuring the Yuma Desalting Plant, in1974. These projects provide multiple benefits for Arizona's citizens, including irrigation and municipal water supplies, flood control, recreation, fish and wildlife enhancement, low-cost hydroelectric power, and groundwater replacement.

Today, Reclamation is continuing its efforts to help the state, its citizens and its Indian Tribes address water and related resource management needs.

Many small water districts have benefitted from the Small Reclamation Project Act Loans program, receiving low-cost loans to upgrade and improve their water delivery systems. These districts have included the Ak-Chin Indian Community, Brown Canal Company, Fort McDowell Indian Community, Schuk Toak District of the Tohono O'odham Nation, Gila River Farms, Graham-Curtis Canal Companies, Roosevelt Water Conservation District, and Roosevelt Irrigation District.

Central Arizona Project

For the last quarter of the 20th century, the Central Arizona Project was Reclamation's most visible water management effort. Essentially completed in 1993 except for the Indian water delivery features the CAP has become a critical piece of the state's water program - and will remain so for generations to come. Reclamation's primary focus on this project now is to complete the Indian water distribution systems; resolve repayment differences with the Central Arizona Water Conservation District (CAWCD), the project's operating entity; complete environmental obligations; and perform its legal role in overseeing the project's long-term operation and maintenance. We work closely with the Tribes, the state of Arizona, and the CAWCD in these efforts.

A key objective in 2000 was the Interior Department's effort to modify the CAP water allocation to settle long-standing claims of several Arizona Indian tribes by transferring an additional 200,000 acre-feet of project water from non-Indian agricultural use to Indian use. This proposed reallocation would be consistent with Indian water rights settlements with the Gila River Indian Community, the San Carlos Apache Tribe, and the Tohono O'odham Nation, and the financial settlement with the CAWCD. The Gila River Indian Community settlement will use approximately one-half of the reallocated water when the settlement is approved by Congress. A draft EIS was prepared and filed with the Environmental Protection Agency in June 2000, but the reallocation effort was suspended at Congress' direction.

Another significant event in 2000 was the accomplishment of a negotiated resolution between Reclamation and the CAWCD on a lawsuit addressing a variety of CAP repayment contract and O&M issues. Through an agreed-on "Stipulation Regarding a Stay of Litigation," the United States and CAWCD will try to implement a final Gila River Indian Community water rights settlement; a final amendment to the Southern Arizona Water rights settlement Act of 1982; and allocations of CAP water to Arizona cities and Indian tribes by the end of 2003. Reclamation anticipates this will be accomplished, and the lawsuit will be dismissed. If all the conditions of the Stipulated Agreement are not met, the settlement will have to be renegotiated.

Increasing Water Availability

Rapid growth, conflicting water rights claims, endangered species and other environmental issues, water quality concerns, and existing water use practices have created uncertainty in some areas of Arizona about the adequacy of future water supplies. Reclamation is assisting Arizona entities with water conservation activities, and working with the state and with local water providers in several cooperative studies to develop water management strategies, identify resource needs and constraints, and identify water supply and management options available to meet these needs within local constraints. Numerous activities occurred in this area in 2000.

On the ***Little Colorado River Sediment Transport Study***, a team of experts in the field of river hydrology and geomorphology was formed, a 50/50 cost-share agreement with Navajo County executed, and collection of the data required to model sediment transport in the study area begun. Scheduled for completion in 2001, the study's goal is to develop a comprehensive plan to reduce sediment deposition along portions of the river where flooding has been a problem, while maintaining sediment transport into the mainstem of the Colorado River and the Grand Canyon.

In July 2000, Reclamation and the Navajo Nation signed a memorandum of understanding creating a partnership committed to the Nation's water development and management goals and outlining the roles and responsibilities of the Nation and Reclamation in support of this strategy. Through the ***Navajo Water Management Study***, Reclamation is working closely with the Navajo Department of Water Resources to develop a resource management plan to address the Nation's projected water requirements and water resource infrastructure deficiencies. A strategy for addressing and mitigating the Nation's chronic water shortages has been completed.

We also assisted a coalition of the Navajo Nation, City of Flagstaff, City of Williams, Grand Canyon National Park, Tusayan and City of Page in their efforts to evaluate future water supply alternatives, using our technical expertise to review and evaluate options developed by the coalition. The coalition subsequently asked Reclamation to submit a general planning "new start" as the ***North Central Arizona Water Supply Study*** in the FY2002 budget.

The partners in the ***Southern Arizona Regional Water Management Study*** expressed their appreciation to Reclamation for its expertise and support, and requested further assistance. Reclamation helped develop information on options for using CAP water in the northwest Tucson area, resulting in an August 2000 report that provides a conceptual design and cost analysis of four potential alternatives. The report also provided an analysis of water treatment and corresponding water quality and cost.

In cooperation with state and local entities, we continued development of a regional effluent utilization plan and identification of specific projects under the ***Tucson Area Water Reclamation and Reuse Study***. The study will include issues related to effluent provided to the Interior Department as part of the settlement for the Southern Arizona Water Rights Settlement Act. Vegetation, mammal and avian mapping of the effluent-dominated reach of the Santa Cruz River has been completed, and will be used to analyze the environmental consequences of various effluent re-use plans that will remove water from the river. Technical information on various proposed effluent reuse projects is being gathered. Continuing efforts will be directed toward developing cost estimates and corresponding environmental information for plan implementation. A feasibility report is being prepared.

Continued efforts on the ***Verde River Basin Management Study***, which will identify Basin resource needs and constraints, and attempt to identify the water supply and management options available to meet identified needs within existing technical and institutional constraints. Study activities concentrated on publication of a water management plan and restoration strategy that includes information and guidance on the characteristics of the watershed, land ownership, potential sources of pollution and a description of the existing infrastructure associated with the Verde River. In addition, the LC Region and the Verde Watershed Association co-published the "Verde River Low-Flow Monitoring Study,"

designed to identify monitoring studies for the installation of low-flow gages. Previous work included the development of models, initiation of public education activities, and defining existing and future water demands on the river.

Continued the ***West Salt River Valley Water Management Study*** to help west Salt River Valley water users and the state identify alternatives to develop integrated CAP and groundwater supplies to meet the west Phoenix metropolitan area's increasing water demand. Reclamation is currently publishing an engineering appraisal report for water demand and infrastructure needs, a groundwater modeling report identifying future groundwater drawdowns, and an overall summary report of accomplishments and processes since 1996.

Continued the ***Upper Gila River Watershed Restoration Study***, which will develop a "road map" to restore the ecological functioning of the watershed in harmony with current economic activities and projected future development. Cost-sharing agreements for the fluvial geomorphology portion of the Upper Gila River Watershed Restoration Study in Arizona and New Mexico were finalized. In Arizona, landowner permissions were gathered, the preliminary background information collection/summary of historical changes of the Gila River was completed, aerial photographs were taken and used to develop composite orthophotographs, soil samples were gathered for analysis, and development of a catalog of historical changes of the river to demonstrate channel responses to watershed changes was begun.

Reclamation also continued its active participation in the Yuma Area Water Resources Management Group. Formed by local water management agencies in 1998, the group's objectives are to find ways to more efficiently and effectively plan and manage the Yuma area's Colorado River water resources, reduce groundwater levels in the Yuma area, increase drainage return flows from water districts in the Yuma area, and address salinity issues at the Southerly and Northerly International Boundary's with Mexico.

Water Conservation

The Water Conservation Field Services Program is very active in the Phoenix and Yuma offices.

In the Yuma office, major activities in 2000 included:

Signing a fifth partnership agreement with a local entity to demonstrate new technology for soil salinity management using "precision farming" techniques. Soil salinity management is a vital component to the overall water management strategy in the arid Southwest.

Continued partnership efforts with five local districts to install long-throated flumes to achieve precise water measurements, and continued efforts to plan for the installation of a computerized Supervisory Control and Data Acquisition (SCADA) system on the Colorado River Indian Reservation and two additional water districts.

Signed cooperative agreements with the Fort Mohave Indian Tribe and the U.S. Fish & Wildlife Service to improve water measurement and accounting.

In the Phoenix area, Water Conservation Field Services Program activities resulted in conservation of approximately 12,150 acre-feet of water and provision of information or technical assistance to more than 445,000 individuals in 2000. Several significant program activities were accomplished.

Continued a partnership with the city of Phoenix to provide every school and city library in the city's water service delivery area a set of books on water conservation and water science; to date, 6,500 books have been delivered to 290 schools.

Supported a study by Water CASA to measure exterior residential water use in the Tucson Active Management Area. Water providers, regulators, and planners have repeatedly expressed the need for a study that accurately tracks

indoor and outdoor water usage beginning with new construction and continuing for several years. This study is expected to collect data for at least ten years and will provide the much needed data for both indoor and outdoor use, including landscaping needs based on type and size of landscape.

◈ Helped sponsor the 2000 Earth Day Festival and Parade, which features activities, displays, music, dance, and food to promote Arizona's unique environment and rich cultural heritage. More than 4,000 people attended this event.

◈ Provided financial assistance to the Agua Fria-New River, Buckeye-Roosevelt, East Maricopa, West Pinal, Eloy, Florence-Coolidge, and Pima Natural Resources Conservation Districts, which each sponsor a mobile lab program that provides on-farm investigations, including suggested practices to improve irrigation water efficiencies.

Salinity Management Activities

In November 1996, the City of Tucson and the LC Region began the ***CAP Water Treatment Study*** to evaluate the costs and viability of membrane treatment of CAP water. The city is evaluating membrane treatment as part of its efforts both to utilize its water resources in the most efficient manner possible and to maintain its historically high water quality, while Reclamation seeks engineering and cost information regarding advanced treatment of CAP water. A draft report was completed and will be finalized in Fiscal Year 2002.

The ***Southern Arizona Regional Water Management Study*** provided a thorough analysis of CAP water quality and treatment methods. Included in the analysis was reverse osmosis treatment, which could be used to desalt CAP water, which contains about a ton of salt in each acre-foot. The report illustrates the potential benefits of removing salt before the water is delivered to the customer, then disposing of the salts in an economically and environmentally prudent manner. The report recommended a pilot study to evaluate the cost and effectiveness of slow-sand filtration as a pretreatment to reverse osmosis; the study was scheduled to begin in June 2001.

The LC Region will also propose initiation of a "Central Arizona Salinity Study" for 2002. As possible solutions for the salinity problem in central Arizona may cross state or international borders, Reclamation formed a Region-wide team to identify interactions between water quality and end use early in the process, so economical and environmentally sound solutions may be found.

At the Water Quality Improvement Center (WQIC), located at the Yuma Desalting Plant complex, research is being conducted that could reduce the costs of operating the plant as well as benefit the desalting industry, individual water districts and water users. Research efforts continued in 2000 on a chlorine-tolerant polyamide reverse-osmosis membrane. Such a membrane could greatly affect application of membrane technologies for water treatment by reducing desalting process energy costs and increasing the life of membranes. The WQIC was the first "National Center for Water Treatment Technology" when it opened in 1997.

Also in 2000, the WQIC marked its second year as the site for students to obtain a two-year college degree in membrane water treatment. Initiated in 1999 in partnership with Arizona Western Community College and David H. Paul, Inc., an internationally known desalination trainer, the program, the only one of its kind in the United States, now has 90 students.

Native American Activities

Reclamation is very involved with Arizona Indian tribes to help them protect, improve and/or develop their water resources. In 2000, we:

Arizona

Continued to help the San Carlos Apache Tribe operate the Black River Pumping Station, providing operations and engineering support that enabled the Tribe to fully use its available water supplies from this site. Our participation in the station's operation was originally intended to end in January 1998, but, at the Tribe's request, Reclamation has remained on site as the transition to operation by tribal members continues.

Again provided emergency drought assistance for the San Carlos Apache Tribe, working through special Congressional appropriations to purchase CAP water for downstream water users in lieu of them using water from San Carlos Lake. This action prevented the dry up of San Carlos Lake, which would have created economic hardship for the Tribe and decimated the Lake's valuable fishery.

Provided technical assistance to the Navajo Nation and the Federal team negotiating the Little Colorado River General Stream Adjudication. Various projects have been developed and evaluated by the United States, Navajo Nation, Hopi Tribe, Zuni Tribe, Southern Paiute and the state parties in an effort to settle claims in this river basin. Reclamation's efforts focused on the science and engineering required to develop and peer-review various configurations of the 3 Canyons, Western Navajo Pipeline and Ganado "C" Aquifer projects. Our participation in the process has resulted in significant progress toward a negotiated settlement.

Established an innovative partnership with the Navajo Nation, Natural Resource Conservation Service, National Park Service, Ganado Farm Board, and Presbyterian Ministry of Grand Canyon to re-establish irrigated agriculture and conserve irrigation water in the Ganado community. Reclamation performed a technical assessment of the current irrigation system, developed alternatives, prepared an environmental assessment, and established a Water Users Association. Construction of the project, considered a model for Federal/tribal small irrigation system conservation programs, is scheduled for spring 2001.

Completed a water conservation and management plan for the Upper and Lower Kerley Valley Irrigation project in association with the Navajo Nation Water Management Branch, Hopi Tribe and Hopi District III Farm Board. Conservation measures will be implemented in spring 2001. Construction measures evaluated in the FY 2000 water conservation plan will include modification of the project diversion works and inoperable sections of the main conveyance channel.

Completed the Hondah McNary Community Development Plan, in association with the White Mountain Apache Tribe's Engineering and Planning Division. The plan creates a geographic information system (GIS) to organize information related to the tribe's land use and water development plan. In FY 1999, Reclamation provided GIS and mapping services to help map and attribute all the major communities within the reservation.

Continued efforts to implement the Southern Arizona Water Rights Settlement Act of 1982 on the Tohono O'odham Nation, with initial development of the Schuk Toak New Farm. The irrigation system, which made its first water delivery on June 29, 2000, will ultimately deliver up to 10,800 acre-feet of CAP water to 2,500 acres of tribal lands.

Continued efforts with the San Xavier District of the Tohono O'odham Nation to rehabilitate the San Xavier Existing Farm. The CAP Link Pipeline, which delivers water from the mainstem CAP aqueduct to the District, was completed and delivered its first CAP water in late 2000.

Continued to support the Gila River Indian Community's administration of the design and construction of its CAP delivery and distribution system. The Community completed construction of 2.7 miles of pipe and a pump station, and awarded a contract to begin construction of another 2.6 mile-long pipeline.

Provided funds to the Colorado River Indian Tribes to allow them to design new gates for their irrigation system.

Arizona

Provided technical assistance and material support to correct an eroding bankline on Lake Havasu for the Chemehuevi tribe.

Continued to support the Quechan tribe in various right-of-way issues, and to work closely with the tribe during the on-going Colorado River dredging project, which is placing sediment on their lands.

Recreation Activities

Reclamation does not directly manage any recreational facilities on its projects in Arizona, but it helps fund the replacement of facilities or development of new facilities as part of the CAP's construction. We also support development of facilities by local agencies, where possible, to provide quality public recreational opportunities and facilities. Several major activities were continued or initiated in 2000.

At the request of the Maricopa County Parks and Recreation Department, we helped prepare a Request For Proposals for visitor services concession operators at Lake Pleasant Regional Park. At the Department's request, we also amended the Recreation Management Agreement with Maricopa County to include a parcel of land adjacent to State Highway 74 at the Park, so the County could attract a major convenience store to the site. Reclamation also negotiated the terms and conditions of the contract for this concession. Reclamation and the County will share in the revenue from this concession; Reclamation will use its share of the revenue to cover costs associated with oversight of recreation on the CAP, and the County will use the revenue for the Park.

At the Scottsdale Golf Complex, we joined forces with the City of Scottsdale, the Professional Golf Association, and the Thunderbirds to reverse the effects of soil erosion, protect the retention basin, and improve habitat for wildlife species. The work included renovation of a footbridge and implementation of other measures to ensure the golf course is fully accessible to people with disabilities.

We continued to cost-share with local governments for the development of linear parks, canal trails and trail heads, and health and safety items for public facilities throughout Arizona. For example, we are supporting the City of Phoenix' rehabilitation of an area on the Arizona Canal known as the Arizona Falls. The project, scheduled for completion in 2003, will include a viewing room incorporating many water features with useful information for the public about the history of water use in the "Valley of the Sun."

We continued our participation with the Bureau of Land Management, Anglers United and other entities in the Lake Havasu Fisheries Improvement Project, using our engineering expertise to help develop accessible shoreline sites and fishing piers, and to design, install and inspect fishing piers and solar lighting. Reclamation divers have also conducted underwater surveys of fish use and condition of the artificial habitat that has been placed in the reservoir.

Efforts to help the City of Yuma develop its Yuma West Wetlands Park also continued. The park, expected to be completed by about 2002, will offer nature trails, interpretive natural areas, and river access for small vessels such as canoes and kayaks. As part of this effort, the City will upgrade Reclamation's bridges and roads adjacent to the Main Outlet Drain Extension along the park's southern boundary, armor the bankline along the north boundary, and create and enhance wetlands and riparian habitat along the riverfront. By the end of 2000, a Millennium Tree Grove has been planted, a wildlife viewing ramada has been constructed, roads have been roughed in, and native tree species have been planted on the lower shelf of the park area adjacent to the river.

Arizona

Environmental Activities

Environmental activities are a significant part of the LC Region's programs in Arizona. Numerous environmental activities are conducted as routine work, or as special projects, often in association with agencies such as the Arizona Game and Fish Department, U.S. Fish and Wildlife Service, or others.

The study and protection of Arizona's natural environment and habitants was a significant part of the CAP's development. Fencing was constructed to prevent wildlife drownings, specially-designed bridges built to allow wildlife to follow their natural migration patterns across the canal, and endangered plants and animals removed from construction sites to protected preserves. We also funded and participated in studies to determine the project's impact on species such as the bald eagle, desert bighorn sheep, desert mule deer and desert tortoise. These studies added immeasurably to the scientific community's understanding of these species and their needs, and resulted in development of measures that protected them from CAP construction impacts and, in a much broader sense, from other types of development. The long-term mitigation features implemented during project construction are now being operated and maintained.

Other significant activities undertaken in 2000 in Arizona included:

- Continued implementation of a Reasonable and Prudent Alternative (RPA) from a Fish and Wildlife Service Biological Opinion on the Gila River to protect Arizona's native fish from the potential of harm from fish imported through the CAP aqueduct. Most significantly, a contract was awarded for construction of barriers on Aravaipa Creek to keep non-native fish from reaching waters habited by native and endangered fish species in the creek.

- Concluded studies on the feasibility of placing fish barriers on the Blue River and Granite Creek, and initiated investigations and design work for the construction of artificial streams. These streams will be used as refugia or propagation facilities for threatened and endangered native fishes.

- Monitoring of selected stream reaches within the Gila River Basin to determine the health of native fish populations and the presence of non-native fishes.

- Continued implementation of the 1996 RPA to protect the endangered southwestern willow flycatcher from potential adverse impacts as the result of modifying Roosevelt Dam. With Reclamation funding, the U.S. Geological Survey banded 125 adult willow flycatchers from Roosevelt Lake and the lower San Pedro River and 71 nestlings from 35 nests at Roosevelt Lake, and a nestling banded at Roosevelt Lake in 1999 was recaptured in January 2000 at a wintering site in Costa Rica. The Arizona Game and Fish Department also documented that willow flycatcher territories at Roosevelt Lake increased from 75 in 1999 to 115 in 2000. And studies showed the flycatchers have been moving into recently-regenerating habitat at Roosevelt Lake and on the lower San Pedro River.

- Participated in construction and monitoring of the Tonto Creek Riparian Unit on the Tonto National Forest. For its contributions to this effort, Reclamation received "The Chief's 2000 Ecosystem Management Award" from the U.S. Forest Service.

- As part of the effort to help recover the endangered razorback sucker, an old aquaculture pond on the San Pedro River Preserve was deepened and re-contoured to create a location where razorback fry could be raised for re-introduction to the Upper Salt and Verde Rivers. Five thousand fingerling razorbacks were stocked in the pond in 2000.

- To help determine whether urbanization, farm construction and potentially the CAP aqueduct may be fragmenting habitat and isolating mountain lions that use the Tucson Mountains and Saguaro National Park, Reclamation helped fund a University of Arizona study on how the lions are interacting with the landscape.

Arizona

Helped dedicate a project at the Imperial Wildlife Refuge north of Yuma, where approximately 80 acres of degraded marsh habitat was converted to wetland riparian habitat and ponds where endangered razorback suckers can be raised. The project was a partnership effort between Reclamation, the Fish and Wildlife Service and Ducks Unlimited.

Continued our involvement with Pima County and other parties in the County's proposed "Sonoran Desert Conservation Plan." Reclamation believes participation in this localized multi-species conservation plan to address endangered species and other environmental issues could help resolve endangered species issues associated with many of its activities in Pima County, and has commented on those portions of the plan affecting our lands.

Reduce Risk To Public Safety

Protection of our facilities, and the lands and people below them, is one of the LC Region's highest priorities. To help reduce the chances of problems at our facilities, or at facilities we own but which are managed by others, we performed a mechanical/electrical inspection on the CAP pumping plants, an inspection of the CAWCD headquarters, and an inspection of the river outlet works tunnel at Horseshoe Dam.

We also met our facility maintenance commitments along the lower Colorado River between Davis Dam and the U.S.-Mexico border with no net loss of wetlands.

International Activities

In 2000, the Yuma Area Office completed work on and delivered to Saudi Arabia a pilot-scale, mobile desalting research facility, and trained Saudi personnel in the equipment's operation. The YAO also continued its efforts to find uses for Reverse Osmosis Water Purification Units that are no longer needed by the U.S. military. These units, which treat otherwise unusable water to create high quality drinking water, have the potential to greatly benefit rural communities, such as those on Indian reservations

Water Quality Protection

To help Arizonan's protect the quality of their waters, we assist state, local or other governmental agencies with water quality programs. This assistance has included the development of wetlands, which can provide additional cleaning of waste waters for reuse or to improve their quality, as well as special, one-of-a-kind programs.

In 2000, we signed a cooperative agreement to provide funding for the Sierra Vista Water Reclamation Facility Effluent Recharge Project. The project will enable the City of Sierra Vista to make beneficial use of its treated municipal sewage effluent for a 20-year period. This will help maintain the region's groundwater supplies and contribute to the restoration and sustenance of the San Pedro River's base flow. This base flow is essential to the riparian ecosystems and fish and wildlife in the San Pedro National Conservation Area.

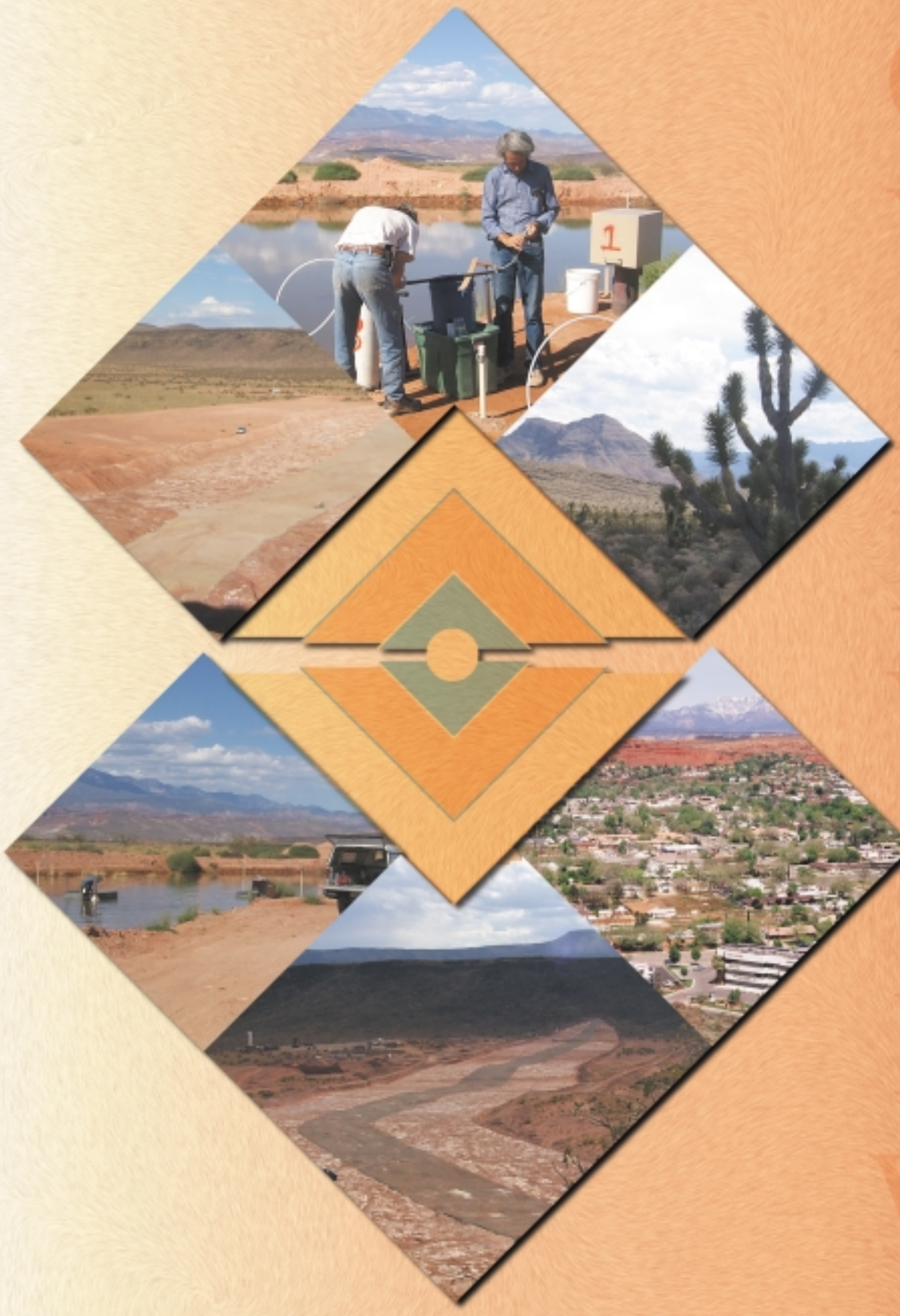
We also participated with the City of Lake Havasu City in an emergency drill in which a specially-designed boat was used to practice evacuating people from an island. The boat was built through an agreement with the Bureau of Land Management, which allows both Reclamation and BLM to use it to meet their respective needs on Lake Havasu. Reclamation can use the boat to clean up oil, gas or other hazardous materials spills on the lake, and BLM uses it to service campgrounds around the lake that would otherwise be inaccessible.

Arizona

Policy and Administration

In June, 2000, Congress enacted and the President signed legislation to allow Reclamation to convey title of certain works, facilities, and titles of the Gila Project to the Wellton-Mohawk Irrigation and Drainage District. This is anticipated to be a multi-year process before final transfer actions will be completed.

UTAH



OVERVIEW

UTAH

Utah

Most of the State of Utah is in the Upper Colorado Region, which is headquartered in Salt Lake City, but a small part of the State's southwest corner is in the LC Region.

Increasing Water Availability

In this area, we are participating with the Washington County Water Conservancy District and the U.S. Geological Survey in the Navajo Sandstone Aquifer Recharge Project. Currently, the potential for recharging the sandstone aquifer with available surface water supplies is being tested. If the test is successful, it will help the local area use ground water storage, eliminating the surface evaporation now being experienced, to supplement its existing water supply.

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Mission Statement-- ***To manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.***