RECLAMATION

Managing Water in the West

Mid-Pacific Region

2013 Report of Accomplishments

U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region

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THE MID-PACIFIC REGION

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Mid-Pacific Regional Director David Murillo

The Mid-Pacific Region's 2013 Annual Report of Accomplishments shares the highlights of this year's achievements by our dedicated members throughout the Region. This report reflects the success of our mission statement: "The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public."

The Mission

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

There are many challenges we will face in the future—short- and long-term issues in California, and the bordering areas of Oregon and Nevada. Some water supplies are no longer reliable and some systems are environmentally unsustainable. We will continue to work together with our partners on water supply and environmental improvements in the Region.

Long-term solutions are essential to the health of state and local economies, natural resources and the environment. The Mid-Pacific Region remains committed to meeting future needs and improving ongoing projects and programs, while dealing with diverse and complex issues brought on by both a changing climate and competing public demands.

Our goal is strongly focused on the priorities of protecting human health and safety, fulfilling our commitment to our customers and to the public, and continuing to cultivate relationships with our colleagues, stakeholders and partner agencies that are so crucial to the continued success of the Mid-Pacific Region.

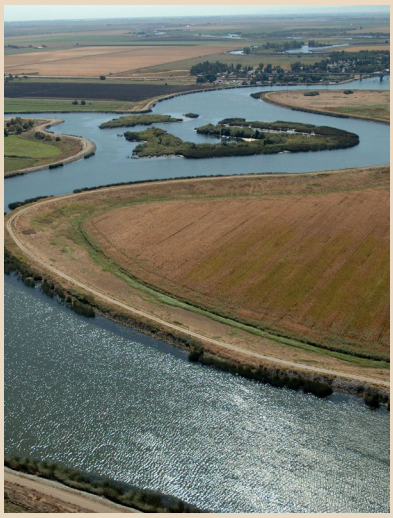
David Murillo

SUMMARY OF REPORT

Mid-Pacific Region's Organization, Infrastructure: Pages 6-19

Bureau of Reclamation's complex Mid-Pacific Region encompasses 11 multi-purpose water projects, ranging from relatively small to among the largest in the nation. The unique and essential projects are spread across southern Oregon, western Nevada and northern California. The report summarizes the Region's organization and infrastructure on pages 6-19.

Major Programs, Projects, and Water Storage Studies: Pages 20-25



The Region is committed to working on short- and long-term water supply improvements and environmental restoration. The Sacramento-San Joaquin Delta is the main focus of both those goals. As part of improving water supply reliability, the Region is advancing investigations into increasing surface water storage. To maintain current surface water storage while fulfilling an overarching mission, public safety, Reclamation and its partners are working toward completion of a $1 billion dam safety project. On pages 20-25, the report focuses on the Bay-Delta, surface water studies and the Joint Federal Project at Folsom Reservoir.

Restoration Programs Advance: Pages 26-35

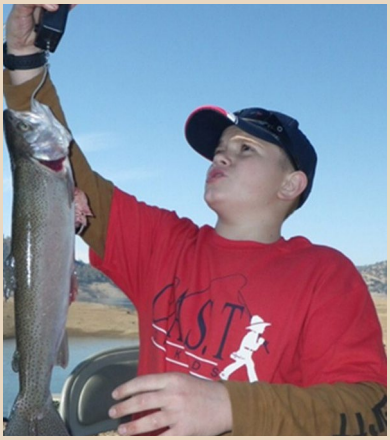
The Region places equal emphasis on both maintaining water supply reliability and environmental restoration. Principal to the Region's operations is the landmark Central Valley Project Improvement Act of 1992. The act amended previous authorizations of the Central Valley Project to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic uses. The report summarizes the environmental restoration accomplishments of the Region's restoration programs and projects on pages 26-35.

Climate Changes: Pages 36-37

California has experienced its driest year on record. The development came as the Region assesses the potential impacts of climate change during the 21st century and how these changes might impact water operations, hydropower, flood control, and fish and wildlife in the western United States. The Region is coordinating several different studies that will assess risks to future water supplies across its river basins and water projects, while analyzing a wide range of adaption and mitigation strategies. Read more about it on pages 36-37.

WaterSMART and other Programs: Pages 38-39

Reclamation plays a key role, as the U.S. Department of the Interior's main water management agency, in implementing the SECURE Water Act, also known as the WaterSMART program. Focused on improving water conservation and helping water and resource managers make wise decisions about water use, the Region's portion of the WaterSMART program is achieved through administration of grants, scientific studies, technical assistance and scientific expertise. Read more on pages 38-39.



America's Great Outdoors Activities: Pages 41-42

The Region organized events and continued the support of existing programs that better connect the public to the outdoors in 2013. With the launch of the America's Great Outdoors initiative in 2010, federal agencies have continued to develop programs to protect America's natural and cultural resources, and connect people to the outdoors through jobs, education and recreation. Under AGO, the federal government has formed new partnerships with state and local governments, communities and grassroots organizations, to implement the initiative. The report details events on pages 41-42.

Lake Tahoe Dam Anniversary: Pages 43-44

The Region, in partnership with the Truckee Meadows Water Authority and the Truckee Carson Irrigation District, celebrated the 100th anniversary of the completion of Lake Tahoe Dam with a ceremony at the dam in 2013. The dam was constructed to control the top six feet of Lake Tahoe, or some 732,000 acre-feet of water. In 1981, the dam was listed on the National Register of Historical Places and is now an integral feature in Tahoe City. Read more about the celebration on pages 43-44.

MID-PACIFIC REGION ORGANIZATION

Bureau of Reclamation

President Theodore Roosevelt signed the Reclamation Act in 1902, creating the agency that would become the Bureau of Reclamation. The agency's initial mission: Develop and provide water for the 17 semi-arid western states. Reclamation has built 475 major structures, including Folsom Dam on the American River and Shasta Dam on the Sacramento River.

Mid-Pacific Region

The Mid-Pacific Region, one of five Reclamation regions, covers the northern two-thirds of California, most of western Nevada and part of southern Oregon. The Region fulfills obligations for water delivery for agriculture and urban uses, power generation, water conservation, water recycling and reuse, and protecting natural and cultural resources.

Mid-Pacific Region Headquarters Office

The Regional Director's Office in Sacramento is the lead office for the Region and includes the regional director and two deputy regional directors.

Area Offices

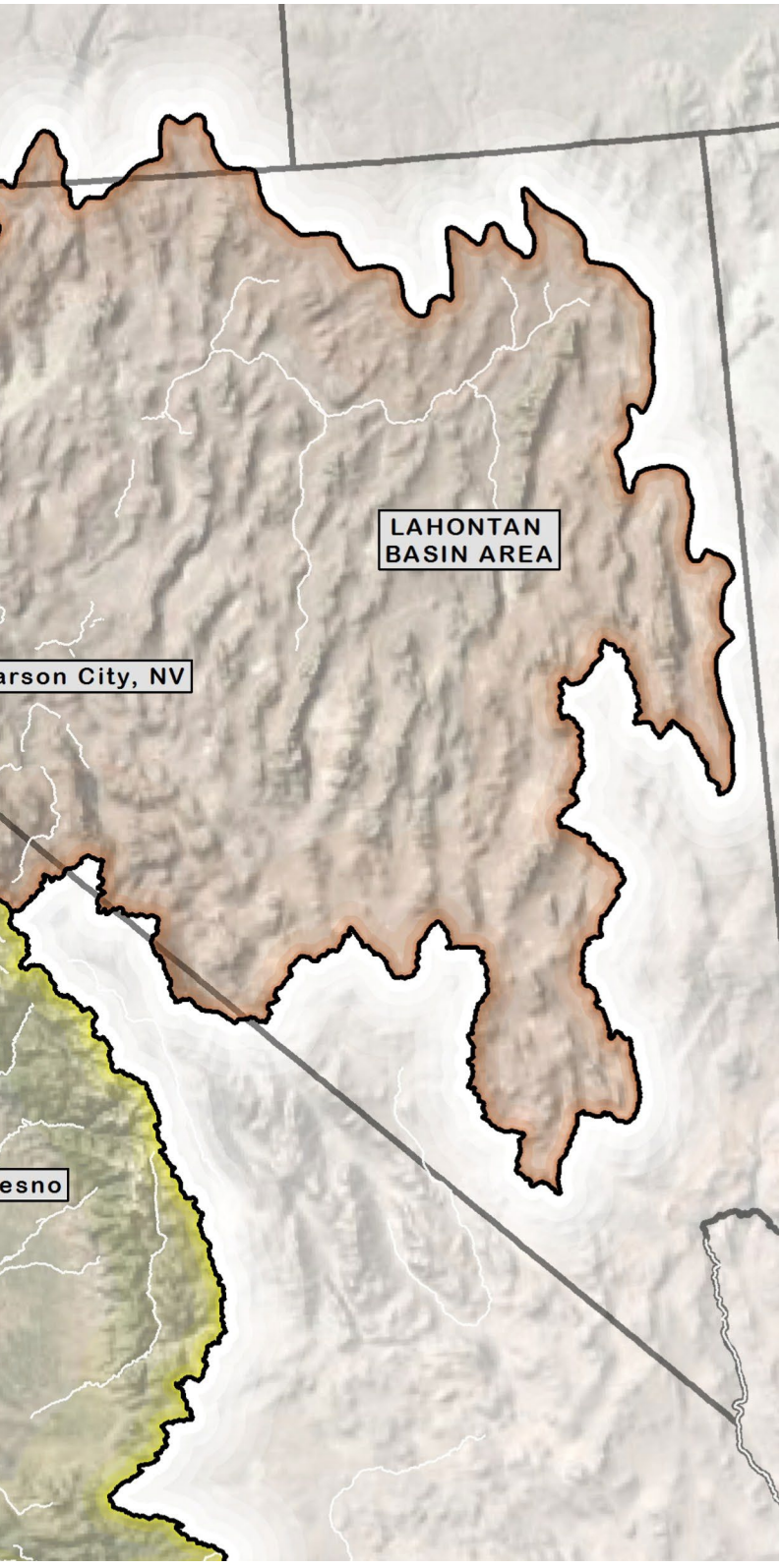
Klamath Basin Area Office

The office, in Klamath Falls, Ore., operates the Klamath Project, which spans the Oregon-California border. The main sources of water for the project include the Upper Klamath Lake and the Klamath River. Clear Lake Reservoir, Gerber Reservoir, and Lost River are located in a closed basin.

Northern California Area Office

The office, at Shasta Dam, north of Redding, manages Reclamation operations from north of Sacramento to near the California-Oregon border. It is responsible for the Central Valley Project's Shasta-Trinity and Sacramento River divisions, which include Shasta Dam, powerplant and reservoir.

Mid-Pacific Region Areas and Offices.



Central California Area Office

The office, at Folsom Dam, near Sacramento, manages Reclamation activities in 12 counties, including the CVP's American River and East Side divisions, the Auburn Folsom South Unit and the Solano Project's Lake Berryessa. The office's area of responsibility also encompasses Folsom and New Melones reservoirs.

South-Central California Area Office

The office, in Fresno, manages Reclamation activities from the Sacramento-San Joaquin Delta, south to the Tehachapi Mountains and the southern coastal counties of Santa Barbara and Ventura, including the CVP's Delta, San Felipe and Friant divisions and the San Luis Unit.

Lahontan Basin Area Office

The office, in Carson City, Nev., manages Reclamation activities in northern Nevada and eastern California, including the Truckee, Carson, and Walker River drainages on the eastern slope of the Sierra Nevada range. The office operates the Newlands, Washoe, Humboldt and Truckee River storage projects.

Specialized Offices

Central Valley Operations Office

The office, together with the state of California, manages daily operations of the CVP and the State Water Project from a joint operations center in Sacramento. The center coordinates releases from upstream reservoirs and Delta exports to ensure that each project achieves its share of benefit from joint water supplies.

Mid-Pacific Construction Office

The office, in Willows, Calif., manages construction programs and performs preconstruction work, onsite construction management, and construction contract administration throughout the Region.

Bay-Delta Office

The office, in Sacramento, focuses on issues associated with the San Francisco Bay/Sacramento-San Joaquin Delta. The office centralizes program management to help ensure that Reclamation effectively responds to the emerging needs of the Bay-Delta.

MID-PACIFIC REGION WATER DELIVERY PROJECTS

Overview

Eleven Water Projects Serve a Diverse Region

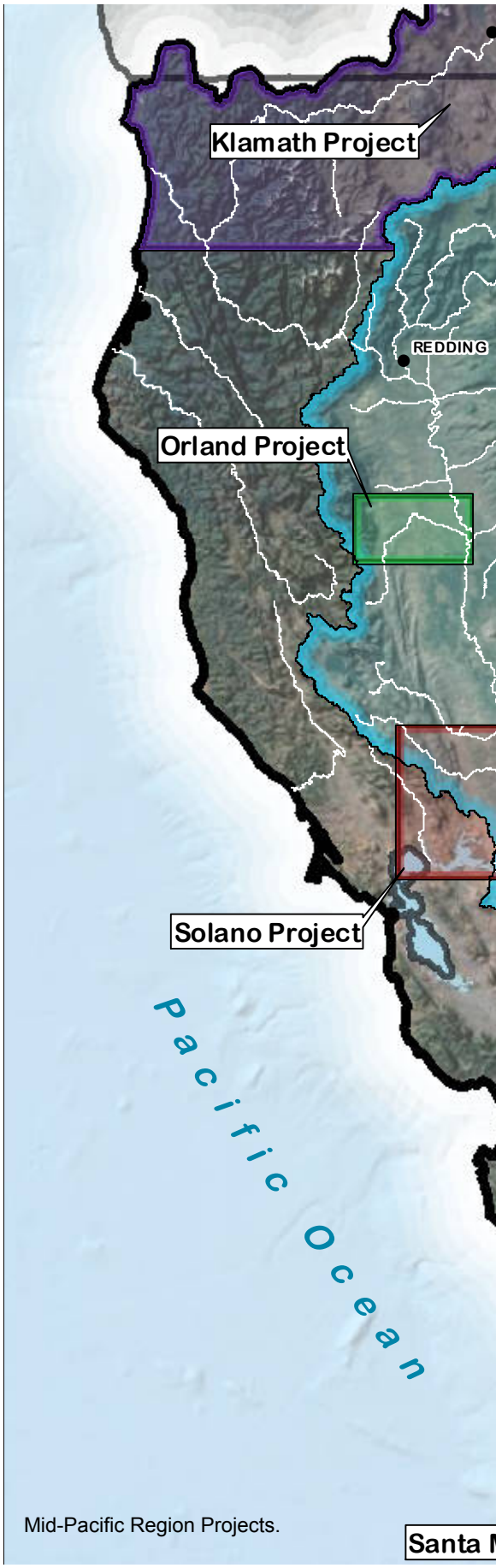
The Mid-Pacific Region encompasses 11 water projects, ranging from relatively small to among the largest in the nation. The unique and essential projects, as shown on the map, are spread across southern Oregon, western Nevada and northern California.

The Region's projects provide water for agricultural, municipal, industrial and environmental purposes through complex processes, driven by numerous factors, including hydrology, regulations, court decisions, environmental considerations, operational limits, input from other agencies and organizations, and a changing climate.

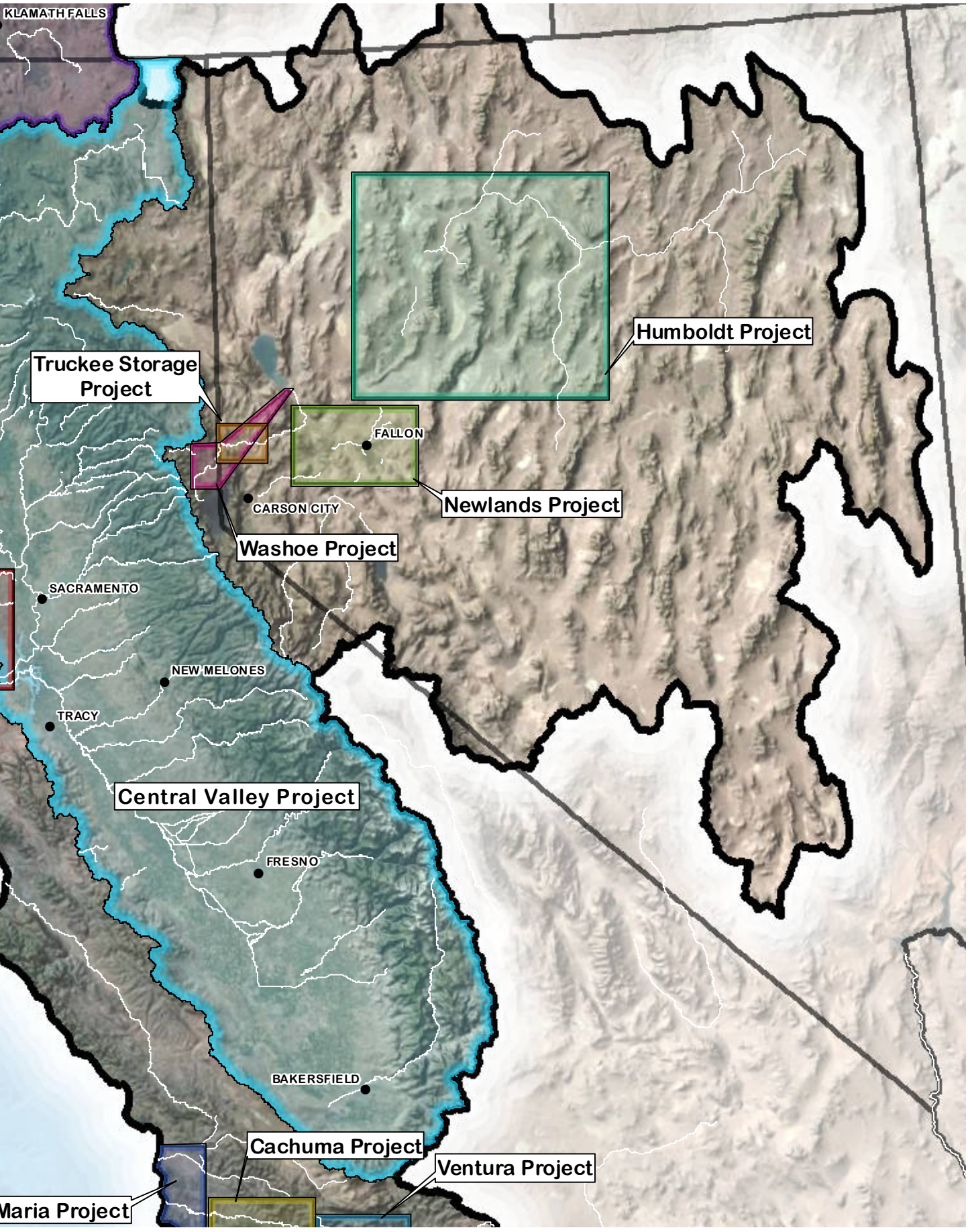
The Region's multi-purpose network of dams, reservoirs, canals, hydroelectric powerplants and other facilities include the Central Valley Project, one of the world's largest and best-known systems for storing and delivering water. It serves one of the most productive agricultural areas in the United States. Shasta Dam forms the CVP's largest reservoir, near Mt. Shasta in Northern California.

The Region's water projects are detailed on pages 8-19.

Mid-Pacific Region.



Mid-Pacific Region Projects.


KLAMATH FALLS
Humboldt Project
Truckee Storage Project
FALLON
Newlands Project
CARSON CITY
Washoe Project
SACRAMENTO
NEW MELONES
TRACY
Central Valley Project
FRESNO
BAKERSFIELD
Cachuma Project
Ventura Project
Maria Project

The Central Valley Project

Overview

The Central Valley Project extends 400 miles, from the Cascade Range in northern California to the Tehachapi Mountains near Bakersfield in the south. The CVP's complex, multi-purpose network of dams, reservoirs, canals, hydroelectric powerplants and other facilities across northern and central California serve agriculture, municipal and industrial needs, and fish and wildlife, in the semi-arid Central Valley.

The project is a major asset to California's economy, providing water for most of the top agricultural producing counties in the nation's leading farm state. The California Department of Food and Agriculture reported in its 2011-2012 report on California agriculture that farm production in the state totals about $37.5 billion annually. And at least a third of that production, or about $12.5 billion, came from the Central Valley.

The CVP provides flood protection for the Central Valley and supplies domestic and industrial water in the valley, as well as to major urban centers in the Sacramento and San Francisco Bay areas.

The project also provides water to restore and protect fish and wildlife, and to enhance water quality. It is a major source of water for 19 wildlife refuges. Five of the refuges are in the Sacramento Valley and 14 are in the San Joaquin Valley.

Construction of major CVP facilities began in 1938 with breaking of ground for Shasta Dam on the Sacramento River near Redding in Northern California. Over the next five decades, the project was expanded into a system of 20 dams and reservoirs that together can hold nearly 12 million acre-feet. The CVP includes 500 miles of canals and aqueducts and 11 hydroelectric powerplants. In Sacramento, the Central Valley Operations Office and the California Department of Water Resources coordinate operations of the CVP and California's companion water delivery system, the State Water Project.

CVP Facilities/Operation

CVP facilities include reservoirs on several major rivers, including the Trinity, Sacramento, American, Stanislaus and San Joaquin rivers.

In Northern California, Shasta Dam is situated on the Sacramento River. Nearby is Trinity Dam on the Trinity River. Water stored in Trinity Reservoir and smaller reservoirs is diverted through a system of tunnels and powerplants into the Sacramento River. Water from all these reservoirs, and those operated by the State Water Project, eventually flow into the Sacramento River.

To the south, the American River, below Folsom Dam and Reservoir, joins the Sacramento River. Some CVP contractors, water rights contractors and water rights holders divert water directly from the Sacramento and American rivers.

The Sacramento River and others carry water to the Sacramento-San Joaquin Delta, where the C.W. "Bill" Jones Pumping Plant, at the southern end of the Delta, lifts water into the Delta-Mendota Canal. The canal delivers water to CVP contractors and exchange contractors on the San Joaquin River and water rights contractors on the Mendota Pool.

CVP water is also conveyed to San Luis Reservoir for deliveries to project contractors through the San Luis Canal. Water from San Luis Reservoir is also conveyed through the Pacheco Tunnel to project contractors in Santa Clara and San Benito counties.

The CVP delivers water from Friant Dam on the San Joaquin River to project contractors serviced by the Madera and Friant-Kern canals. Water is stored in New Melones Reservoir for water rights holders in the Stanislaus River watershed and CVP contractors in the northern San Joaquin Valley.

The CVP and the separate State Water Project convey water in the Sacramento River and the Delta. The project's reservoir operations are coordinated to obtain maximum yields and deliver water into the main river channels and canals of the projects in the most efficient and environmentally sensitive manner.

CVP irrigation and municipal water is delivered in accordance with long-term contracts negotiated with irrigation districts, cities and other users. Water is also delivered to wildlife refuges in accordance with the Central Valley Project Improvement Act and its programs to restore and protect wildlife.

Central Valley Project.

CVP Divisions and Units

The complex operations of the CVP are organized into divisions and units. The Shasta Division in northern California includes Shasta Dam on the Sacramento River. The nearby Trinity Division diverts additional water into the Sacramento River. Other divisions include the Sacramento River Division; the Sacramento Canals Unit; and the American River Division, which includes Folsom Reservoir. The Delta Division includes the C.W."Bill" Jones Pumping Plant and the Delta-Mendota and Contra Costa canals. The East Side Division, New Melones Unit includes New Melones Reservoir on the Stanislaus River in the San Joaquin Valley. The Friant Division includes Millerton Lake on the San Joaquin River. The West San Joaquin Division, San Luis Unit includes San Luis Reservoir. The central coastal portion of California is served by the San Felipe Division.

CVP Water Deliveries

The CVP's water comes from rain and runoff from the Sierra Nevada snowpack flowing into reservoirs. Releases from dams pass through rivers and canals to the Central Valley, serving contractors in the northern half, referred to as the Sacramento Valley, and the southern half, known as the San Joaquin Valley.

The CVP has long-term agreements to supply water to more than 250 contractors in 29 of California's 58 counties. Deliveries by the CVP include providing an annual average of 5 million acre-feet of water for farms in a normal year, 600,000 acre-feet of water for municipal and industrial uses (enough water to supply about 2.5 million people for a year); and about 1.2 million acre-feet of water for wildlife refuges and other environmental needs.

Friant-Kern Canal in the San Joaquin Valley.

CVP Hydroelectric Power Production and Benefits

There are 11 hydroelectric powerplants in the CVP with a combined capacity of about 2,100 megawatts. (A megawatt is enough to supply nearly 1,000 homes.)

CVP powerplants produce about 4.5 million megawatt hours in an average water year. (A megawatt hour is continuous production of one megawatt over an hour.)

About a third of the electricity generated by the CVP is used for pumping water throughout the project. The rest is made available to the Western Area Power Administration for sale and distribution in the western United States.

CVP Powerplants and Capacities (in megawatts)

Northern California Area Office (NCAO)

Shasta Dam	710 MW
Trinity Dam	140 MW
Judge Francis Carr	154 MW
Spring Creek	180 MW
Keswick Dam	105 MW
Lewiston Dam	.350 MW

Central California Area Office (CCAO)

Folsom Dam	207 MW
Nimbus Dam	17 MW
New Melones Dam	383 MW

South-Central California Area Office (SCCAO)

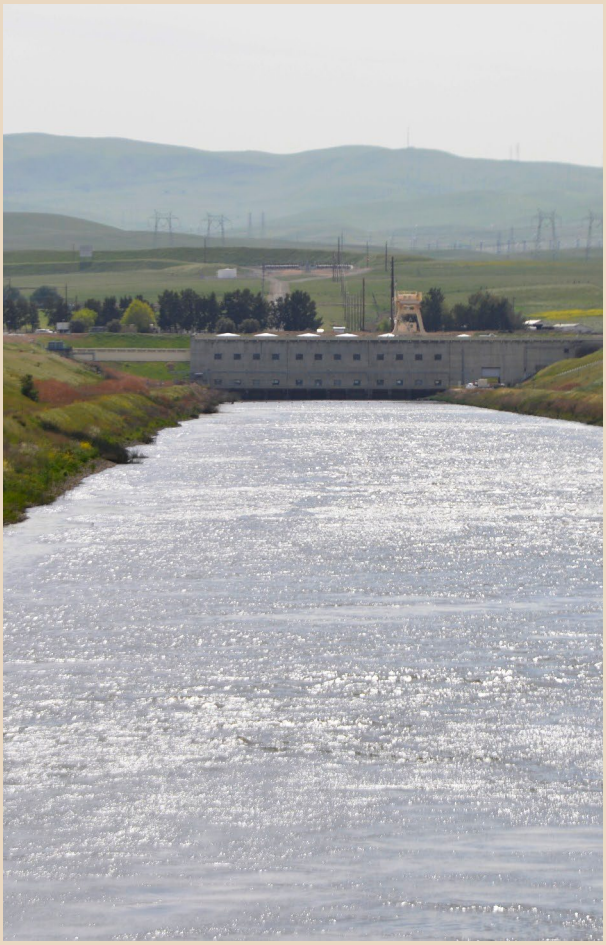
O'Neill	14.4 MW
San Luis	202 MW

CVP's Delta Pumping Plant
The C.W. "Bill" Jones Pumping Plant, near Tracy, Calif., at the southern end of the Delta, lifts water nearly 200 feet through 15-foot diameter pipes into the Delta-Mendota Canal. At full capacity, the plant can pump 4,600 cubic feet per second, which is 9,100 acre-feet per day.

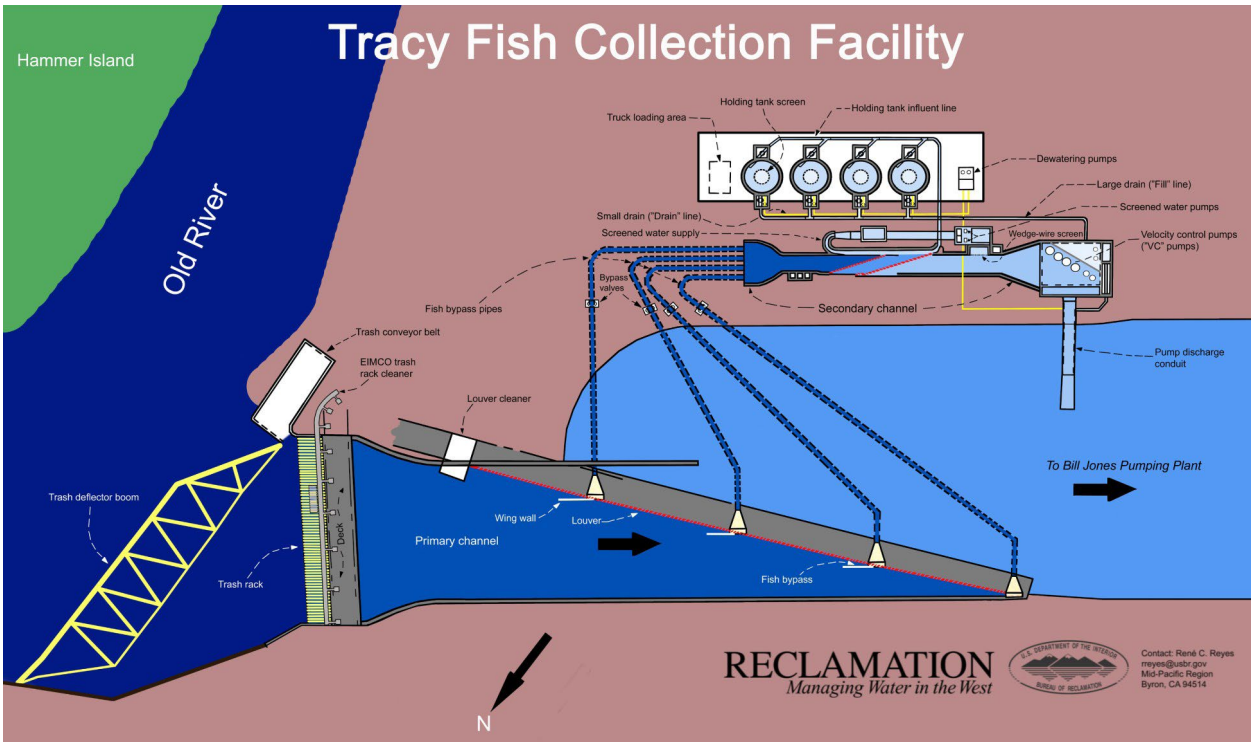
The canal delivers water to CVP water service contractors, exchange contractors and wildlife refuges. The contractors provide agricultural and urban water service in the western San Joaquin Valley, and portions of San Benito and Santa Clara counties. The CVP water is also conveyed with pumping units to the San Luis Reservoir for deliveries to CVP contractors through the San Luis Canal.

CVP's Tracy Fish Collection Facility
The Tracy Fish Collection Facility is a system of louvers, bypasses and holding tanks operated to protect and salvage fish from the operations of the nearby Jones pumping plant.

The facility collects Delta fish species as a primary mitigation feature for the pumping plant and returns them to the Delta. Threadfin shad, striped bass, and American shad made up the bulk of the collection. There are about 50 species of fish collected at the facility, including listed species such as the Delta smelt, winter-run and spring-run Chinook salmon, steelhead and green sturgeon.



The C.W. Jones Pumping Plant and the start of the Delta-Mendota Canal.



Schematic of the Tracy Fish Collection Facility, where a major louver was replaced in 2013 at a cost of $4 million.

CVP's Agricultural Benefits

Based on a California Department of Food and Agriculture 2011-2012 report, the following agricultural production occurs annually on acreage served by the CVP:

- Acreage serviced, 3 million
- Principal crops, 24 million tons
  - Field crops, 10 million tons
  - Vegetable/melons, 9 million tons
  - Fruit/nut crops, 5 million tons
- Largest producing counties include:
  - Fresno: Grapes, almonds, poultry, dairy, tomatoes
  - Tulare: Oranges, cattle, grapes, alfalfa, dairy
  - Kern: Grapes, citrus, almonds, carrots, dairy
  - Merced: Chickens, almonds, cattle, potatoes, dairy
  - Stanislaus: Almonds, chickens, cattle, dairy
  - San Joaquin: Grapes, walnuts, cherries, almonds, dairy
  - Kings: Dairy, cotton, cattle, alfalfa, tomatoes

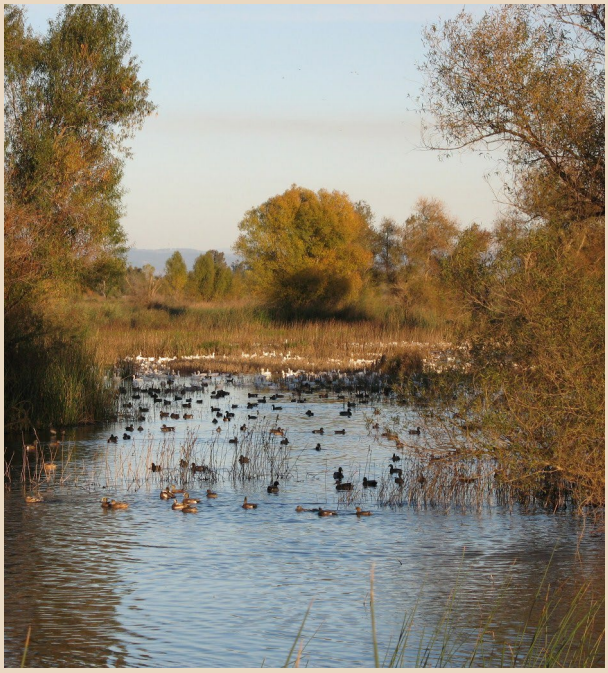
Processing of melons grown in the San Joaquin Valley.

CVP's Support of Wildlife Refuges

The CVP, under terms of the Central Valley Project Improvement Act, delivers water for 19 wildlife refuges in the Sacramento and San Joaquin valleys. The refuges provide wetlands habitat, and are essential resting and feeding areas for migratory birds on the Pacific Flyway.

In the Sacramento Valley, there are five refuges: the Sacramento, Delevan, Colusa and Sutter national wildlife refuges, and the Gray Lodge Wildlife Area.

San Joaquin Valley refuges total 14. There are seven in the San Luis National Wildlife Refuge Complex, the San Luis, West Bear Creek, East Bear Creek, Freitas and Kesterson units, the Merced National Wildlife Refuge, and the Los Banos Wildlife Area; in the North Grasslands Wildlife Area Complex, there are five refuges, the China Island and Salt Slough units, the Mendota and Volta wildlife areas, and the Grasslands Resource Conservation District; and in the Tulare Lake Basin, there are two refuges, the Kern and Pixley national wildlife refuges.



A San Joaquin Valley wildlife refuge.

Other California Projects

Northern California

Orland

The Orland Project, which is located in the Sacramento Valley about 100 miles north of Sacramento, collects runoff from the eastern Coast Range. The project provides irrigation water to about 20,000 acres of farmland. The project is comprised of East Park Dam on Little Stony Creek and Stony Gorge Dam on Stony Creek. It also includes Rainbow and Northside diversion dams.

Central California

Solano

The Solano Project, which is located northeast of San Francisco Bay on Putah Creek, collects runoff from the eastern Coast Range. The project provides irrigation water to about 95,000 acres of farmland and municipal and industrial water to the cities of Vallejo, Vacaville, Fairfield, Benicia and Suisun. The project is comprised of Lake Berryessa, behind Monticello Dam. It also includes Putah Diversion Dam, Putah South Canal, Green Valley Conduit and Terminal Dam and Reservoir.

Three California Seacoast Projects: Capturing Seasonal Floodwaters for Beneficial Uses

Cachuma

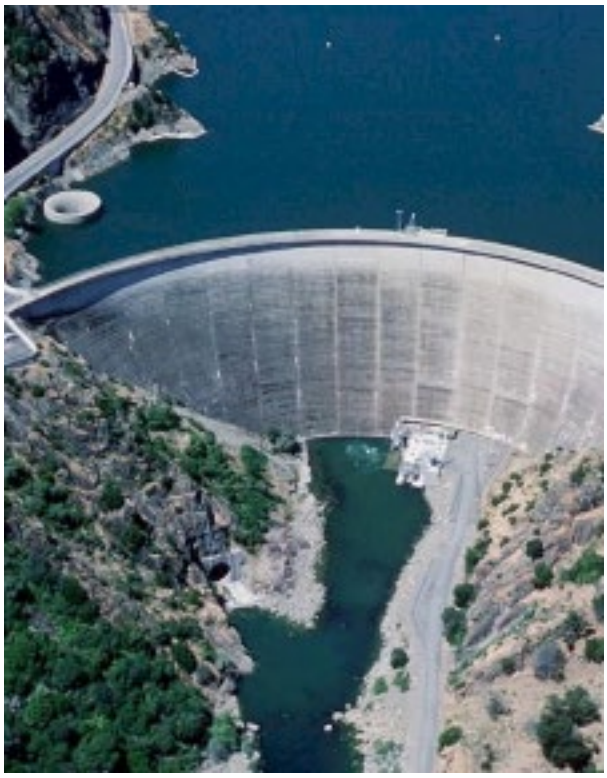
The Cachuma Project is located near Santa Barbara on the Santa Ynez River. The project provides irrigation water for about 35,000 acres of farmlands and municipal and industrial water for the cities of Santa Barbara, Goleta, Montecito and Carpinteria. The project is comprised of Lake Cachuma behind Bradbury Dam, Lauro Dam and Reservoir, Ortega Dam and Reservoir, Carpinteria Dam and Reservoir, Glen Anne Dam and Reservoir, Tecolote Tunnel, South Coast Conduit and Sheffield Tunnel.

Santa Maria

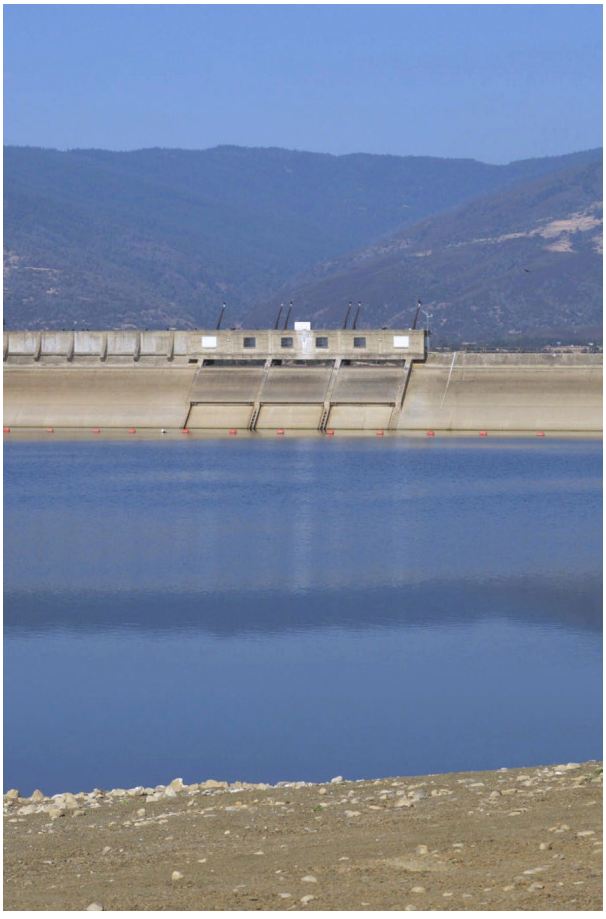
The Santa Maria Project is located about 150 miles northwest of Los Angeles on the Cuyama River. The project provides irrigation water for about 35,000 acres of farmland. It is comprised of Twitchell Dam and Reservoir.

Ventura River

The Ventura River Project is located about 60 miles northwest of Los Angeles on the Ventura River. The project provides irrigation water to about 7,000 acres of farmland and supplies water to about 60,000 municipal and industrial users. It is comprised of Casitas Dam and Reservoir, Robles Diversion Dam and Fish Passage Facility, and Robles-Casitas Canal.



Monticello Dam in the Solano Project.



Stony Gorge Dam in the Orland Project.

Prosser Dam in the Newlands Project.

Derby Dam in the Newlands Project.

Boca Dam in the Truckee Storage Project.

Nevada Projects

Newlands

The Newlands Project is located in western Nevada and the eastern Sierra Nevada mountains of California. The project provides irrigation water from the Truckee and Carson rivers for about 57,000 acres of farmland in the Lahontan Valley, near Fallon and Fernley, in western Nevada. The project also serves the Pyramid Lake Paiute Indian Tribe. It is comprised of the Lahontan Dam and Reservoir, Lake Tahoe Dam, Derby Diversion Dam, Truckee Canal and Carson River Diversion Dam.

Washoe

The Washoe Project is located in west-central Nevada and eastern California. The project provides water from the Truckee and lower Carson rivers to benefit fish and wildlife. It is comprised of Prosser Creek Dam and Reservoir, Stampede Dam and Reservoir, Marble Bluff Dam and Pyramid Lake Fishway.

Truckee

The Truckee Storage Project is located in western Nevada on the Little Truckee River. The project provides irrigation water for about 29,000 acres of farmland in Truckee Meadows, surrounding Reno and Sparks. It is comprised of Boca Dam and Reservoir.

Humboldt

The Humboldt Project is located in northwestern Nevada, near Lovelock, on the Humboldt River. The project provides irrigation water for about 45,000 acres of farmland. It is comprised of the Rye Patch Dam and Reservoir.

Oregon Projects

Klamath Overview

The Klamath Project is located in southern Oregon and northern California. The project provides water from the Klamath River and Lost River for irrigation of about 210,000 acres of farmland. It is comprised of Clear Lake Dam and Reservoir, Gerber Dam and Reservoir, Link River Dam, Lost River Diversion Dam, Anderson-Rose Diversion Dam, Malone Diversion Dam, Miller Diversion Dam, Tule Lake Tunnel and Klamath Straits Drain.

Lost River Diversion Dam in the Klamath Project.

Gerber Dam in the Klamath Project.

Anderson Rose Diversion Dam in the Klamath Project.

RECREATION

The Region has more than 60 recreation areas, including reservoirs, campgrounds, wildlife refuges, hiking trails and fish hatcheries.

The facilities provide a wide range of recreation opportunities such as boating, camping, picnicking, horseback riding, hiking, fishing, biking, rock climbing, sightseeing and viewing of wildlife.

Their locations range from areas near cities to rugged, remote sites. Some are managed by the Region; others by federal, state and local government partners, among them, the California Department of Parks and Recreation, the Nevada Division of State Parks, the California Department of Fish and Game, and the U.S. Forest Service.

The Region directly manages recreation in five areas: East Park Reservoir and Stony Gorge Reservoir (Northern California Area Office); Folsom-South Canal Recreation Trail, and Berryessa and New Melones reservoirs (Central California Area Office).

The Region's other major recreational sites include:

- Shasta, Keswick, Trinity and Whiskeytown reservoirs in Northern California.
- Millerton Reservoir in the central Sierra Nevada foothills near Fresno, Calif.
- Folsom, Natoma and Clementine reservoirs and the Auburn Project Lands near Sacramento. Calif.
- San Luis Reservoir near Los Banos, Calif.
- Boca Reservoir near Truckee, Calif.
- Rye Patch Reservoir near Lovelock, Nev.

The Region's educational offerings include tours of Shasta Dam in Northern California. The tours include an elevator ride down inside the dam, where guides discuss the construction, history and purpose of the project; and a look at the powerplant, California's largest hydroelectric generating station.

Educational offerings in Central California include the American River Water Education Center near Folsom Reservoir. The center's mission is to increase the public's knowledge of the American River watershed -- both the natural features and human interactions within the watershed.

Region facilities also provide interpretive activities such as those at New Melones Reservoir in the central Sierra Nevada foothills and Lake Berryessa in Napa County.

Visitors enjoy reservoir recreation opportunities across the Region.

Lake Berryessa Recreation

During 2013, the Mid-Pacific Region worked with the community around Lake Berryessa, in Napa County, northeast of the San Francisco Bay Area, to develop and implement a newly adopted plan for improving recreation services.

The Region held public meetings to explain its decision to cancel Reclamation's concession contract with an existing corporation and to create a community forum to provide public involvement on recreation and land use at the lake.

Some of the community forum's first actions were renaming some of the recreation areas. The new names are:

- Putah Canyon Recreation Area, formerly Putah Creek Resort and Chaparral Cove.
- Monticello Shores Recreation Area, formerly Rancho Monticello Resort and Manzanita Canyon.
- Berryessa Point Recreation Area, formerly Lake Berryessa Marina Resort and Blue Oaks.
- Spanish Flat Recreation Area, formerly Spanish Flat Resort and Foothill Pines.

Top: Lake Berryessa, northeast of the San Francisco Bay Area, is a popular destination for recreation; *above*: Markley Cove at Lake Berryessa.

- Steele Canyon Recreation Area, formerly Steele Park Resort and Lupine Shores.

Lake Berryessa was visited by more than 500,000 people during 2012. Reclamation-managed facilities include a visitor center, water education center, a boat launch ramp at Capell Cove, a hand-launch ramp at Eticuera Day Use Area; and the Oak Shores and Smittle Creek day use areas for picnicking, fishing, swimming and hiking.

MAJOR PROGRAMS, PROJECTS, AND WATER STORAGE STUDIES

Bay-Delta

Overview

The San Francisco Bay Estuary and Sacramento-San Joaquin Delta is where two of California's largest rivers meet the saltwater from San Francisco Bay, creating the West Coast's largest estuary. The area is a blend of towns, highways, marinas and farmland. More than 50 island tracts are surrounded by levees and about 700 miles of sloughs and winding channels.

The Delta, the hub of the federal Central Valley Project and California's State Water Project, is among the most important ecosystems in the nation. Water from the Delta serves the federal and state water projects, which in turn, serve urban and agricultural areas in the San Francisco Bay area, the Silicon Valley, the San Joaquin Valley, the central coast and southern California.

The Delta itself sustains billions of dollars in agricultural and recreational activity. It is also the habitat for hundreds of species of plants and wildlife, and more than 50 species of fish, including some that are threatened and endangered.

The Delta has experienced significant ecological collapse as a result of 150 years of human activity, including California's increasing demand for water; changing environmental and climate conditions; and stressors such as pesticides, pollutant discharges and invasive species. Long-term solutions are needed to ensure reliable, quality water supplies and a sustainable ecosystem.

Since the 1970s, urban, agricultural and environmental interests have differed over how to balance water diversions with environmental restoration in the Delta. Reclamation and its partners have implemented short-term solutions and are developing long-term plans for Delta sustainability in order to avert further ecological decline while maintaining reliable water supplies.

Region's Bay-Delta Office

The Region's Bay-Delta Office, created in 2010, provides a holistic view of Reclamation's affect and responsibilities on and in the Bay-Delta area and ensures that Reclamation's management of the CVP and Delta issues and activities are integrated across the management units of the CVP. The BDO is also the primary point of contact with the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and other federal, state, and local agencies with which Reclamation collaborates on important issues and activities. The office is involved with numerous programs, projects and issues detailed throughout this report.

Ongoing Litigation

Several lawsuits were filed in 2009 challenging Reclamation's acceptance and implementation of both a 2008 FWS Biological Opinion and a 2009 NMFS BO, and associated Reasonable and Prudent Alternatives, for the Coordinated Long-term Operation of the CVP and State Water Project. On December 14, 2010, the U.S. District Court for the Eastern District of California issued a summary judgment finding the 2008 USFWS BO unlawful and remanded it to USFWS for further consideration. The court issued an amended Final Judgment on May 4, 2011, that ordered USFWS to complete a final revised BO by December 1, 2013.

The court remanded the NMFS BO to NMFS on September 20, 2011. On December 12, 2011, the court ordered NMFS to complete a draft BO by October 1, 2014, and a final BO by February 1, 2016. Reclamation has been ordered to conduct a review of both of the revised RPAs in accordance with the National Environmental Policy Act.

The Departments of the Interior and Commerce, and the California Department of Water Resources filed a joint motion in the court for a three-year extension of the current court-ordered deadlines. The request included delaying completion of the USFWS and NMFS BOs and the associated NEPA process for three years, in favor of implementing a Collaborative Science and Adaptive Management Program that is largely targeted at key Delta actions included in the RPAs; and to test the performance of adaptive management activities, included in the proposed Bay Delta Conservation Plan.

The court ruled on April 9, 2013, granting a staged extension. The court extended all deadlines related to the BOs and the NEPA process by one year, with the potential of two additional one-year extensions if satisfactory progress is demonstrated to the court. The court ruling included a requirement that on February 14, 2014, the parties (i.e., NMFS, USFWS, Reclamation

An aerial view of the Sacramento-San Joaquin Delta.

and DWR) submit to the court a joint report detailing progress on the CSAMP, providing additional information on the CSAMP future activities and describing how the results of the CSAMP will be incorporated into the consultation process. In addition, the parties are required to submit schedules to the court on how CSAMP and the consultations will proceed. The BDO continues to work in coordination with the other CVP management units, FWS, NMFS, the state of California and other partners, to meet these requirements.

Bay Delta Conservation Plan

Reclamation continues its participation in the BDCP in concert with the state of California and other federal lead agencies.

The BDCP is a Habitat Conservation Plan and Natural Community Conservation Plan designed to meet the goals of ecosystem restoration, water supply reliability and water quality within a stable regulatory framework. The BDCP is the result of more than seven years of collaboration and scientific and policy review and input.

A cornerstone of the BDCP is construction and operation of a dual-conveyance water delivery system that would modernize and augment the heart of California's aging water supply system. Key features of the plan include three new intakes along the Sacramento River, near the communities of Hood and Courtland, equipped with state-of-the-art fish screens, together capable of diverting up to 9,000 cubic feet for second; a new 40-acre-foot forebay to collect water from the Sacramento River; and twin tunnels 26 feet in diameter and about 30 miles long to carry water south to existing SWP and CVP pumping plants. The current plan, announced in August 2013, was downsized from a previous proposal due to landowner concerns about the impact on their properties.

Reclamation serves as a federal lead agency in the development of the BDCP Environmental Impact Report/Environmental Impact Statement along with the USFWS and NMFS. Reclamation participates in the BDCP effort by providing technical information and guidance and ensuring compatibility with CVP requirements and responsibilities. The Draft BDCP and associated Draft EIR/EIS were released for public review and comment in December 2013.

Proposed water conveyance systems through the Sacramento-San Joaquin Delta.

An aerial view of Shasta Dam and Reservoir in northern California.

Water Storage

Surface Water Storage Studies

There were significant developments in 2013 regarding Reclamation's continuing investigations into possibilities for increasing surface water storage for multiple water resources benefits.

In June 2013, the Region released draft environment documents evaluating the potential effects of raising Shasta Dam and enlarging the reservoir. The dam and reservoir on the Sacramento River, located about 10 miles northwest of Redding, Calif., is a centerpiece of the well-known, high-profile Central Valley Project.

Developments in 2013 regarding other ongoing surface water storage studies include:

- The North-of-the-Delta Offstream Storage Investigation: In December 2013, Reclamation released a progress report on the investigation. The proposed storage project would be located about 10 miles northwest of Maxwell, Calif.
- San Luis Reservoir Expansion Investigation: In December 2013, Reclamation released a draft Appraisal Study on increasing the storage capacity of San Luis Reservoir, while also addressing seismic risks under B.F. Sisk Dam. The cost to raise the dam, near Los Banos, Calif., by 20 feet and expand the reservoir by 130,000 acre-feet, was estimated at $360 million.
- Upper San Joaquin River Basin Storage Investigation: Under study as a location for additional surface water storage is the upper San Joaquin River watershed. Reclamation and its partners have selected a site for evaluation in the upstream portion of the San Joaquin River, northeast of Millerton Lake, known as Temperance Flat.

The primary purpose of the proposal to enlarge Shasta Dam is to increase survival of anadromous fish populations in the upper Sacramento River and increase water supply reliability for agricultural, urban and environmental purposes.

The Draft Environmental Impact Statement for the Shasta Lake Water Resources Investigation, released in June, evaluated potential effects of six alternative plans to modify the dam and reservoir. Workshops were held in July, and public hearings in September, to collect public review and comment on the draft environmental documents.

The proposal analyzes a range of dam raises, from 6.5 feet to 18.5 feet, with corresponding increases in reservoir storage from 256,000 acre-feet to 634,000 acre-feet.

The Final Feasibility Report and Final EIS for the enlarging the dam are scheduled to be released in January 2015. The comments and feedback received on the draft documents will be used in identifying the preferred alternative and recommended plan.

The Shasta investigation is one of the surface water storage studies included in the 2000 CALFED Bay-Delta Programmatic Record of Decision.

Currently, Shasta Dam is 602 feet high with a reservoir capacity of 4.5 million acre-feet. Reclamation completed construction of the dam and reservoir in 1944 for flood control, irrigation water supply, municipal and industrial water supply, hydropower generation, fish and wildlife conservation and navigation purposes.

Joint Federal Project/Mormon Island Auxiliary Dam

Joint Federal Project

The ongoing Joint Federal Project auxiliary spillway is the cornerstone for more than $1 billion in dam safety and flood damage reduction improvements to further protect more than a million residents in communities downstream from the Folsom Dam complex, which is on the American River, about 25 miles northeast of Sacramento, Calif.

The project, which represents an unparalleled partnership between Reclamation and the Army Corps of Engineers, includes construction of an approach channel, control structure, spillway chute and stilling basin.

Reclamation completed initial phases in 2011, which included construction of haul roads, relocation of the Natoma water supply pipeline and excavation for the stilling basin, spillway chute and most of the control structure. Upon completion of the phases, the site was transferred to the Corps to complete the remaining phases.

The Corps awarded the third phase of JFP construction to build the control structure, which consists of a 120-foot-high gravity dam, with six submerged radial gates. The third phase is scheduled for completion by 2015. The Corps is on schedule to meet its commitment to complete construction and turn over the JFP to Reclamation in 2017.

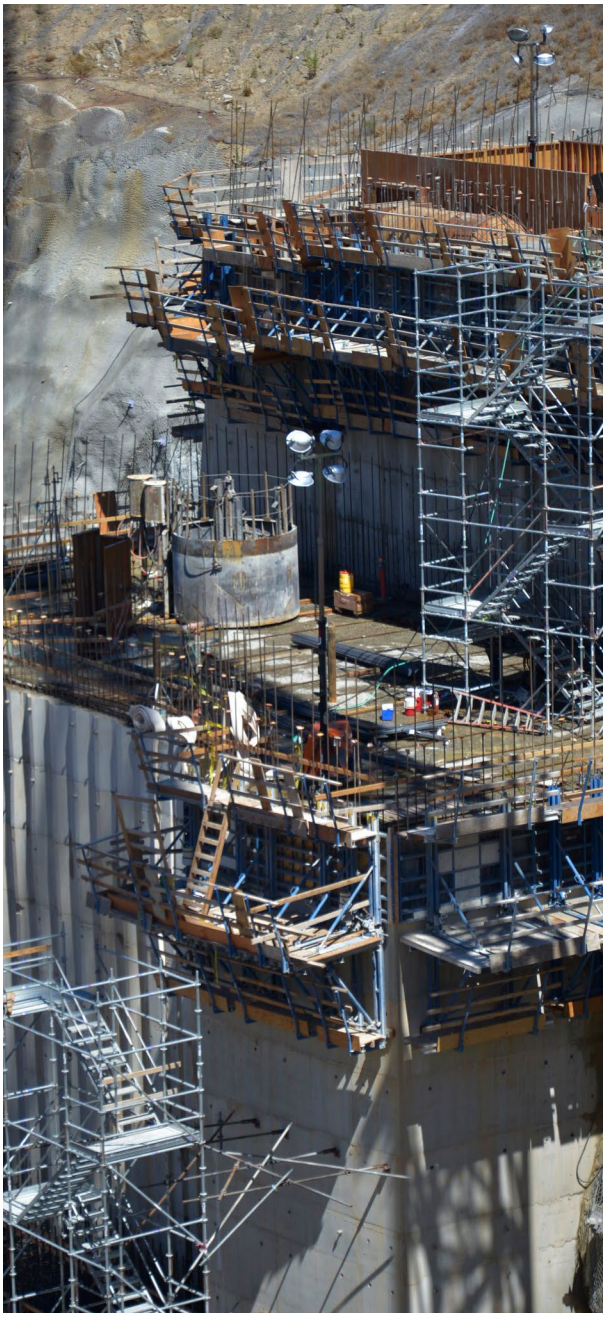
In May 2013, the Corps awarded a $255.1 million contract to complete construction on the fourth and final phase of the new auxiliary spillway at Folsom Dam. The work consists of excavating material, then constructing the approach channel, spillway chute and stilling basin.

Mormon Island Auxiliary Dam

The Region, during 2013, completed the first phase of work on the Mormon Island Auxiliary Dam Modification Project, which is part of Reclamation's dam safety program to reduce seismic or static risk.

The work consisted of a $35.5 million project that strengthened the foundation of the auxiliary dam through construction of a concrete key block that is 900 feet long, 60 feet wide and 60 feet deep. The structure is anchored eight feet into bedrock and further strengthened by pilings, braces and compacted backfill. This phase included excavating 120,000 cubic yards of sediment and rock, processing 60,000 cubic yards of concrete aggregate, onsite batching of 60,000 cubic yards of concrete, and placement of 60,000 cubic yards of compacted select backfill.

In July 2013, Reclamation awarded a $45.7 million contract for the second phase of the Mormon Island project. The phase is designed to further advance seismic improvements completed in the first phase by providing a more earthquake-resistant embankment. The work will include the overlay of material on the auxiliary dam's downstream embankment and the installation of filters and drains. The second phase is expected to be completed in 2016.



Above and at right, workers construct the auxiliary spillway at Folsom Dam.


GRANITE

RESTORATION PROGRAMS ADVANCE

The San Joaquin River just below Sack Dam.

San Joaquin River Restoration Program

The San Joaquin River Restoration Program is a comprehensive, long-term effort to restore and maintain flows from the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River in Central California, in order to create naturally reproducing and self-sustaining populations of salmon and other fish in the river while reducing or avoiding adverse water supply impacts from restoration flows.

Federal participation in the program is mandated under the San Joaquin River Restoration Settlement Act, part of the Omnibus Public Land Management Act of 2009.

During 2013

Significant activities accomplished throughout 2013 kept momentum moving forward across many program areas that all contributed towards achieving the long-term goals. Information continued to be collected on major constraints to fish reintroduction in the river channel and on what actions need to be implemented prior to and during reintroduction of salmon.

Water Management Goal Accomplishments

Key accomplishments towards achieving the Water Management Goal include the following:

- Recaptured and recirculated about 68,000 acre-feet of interim flows by November 2013, with that figure expected to increase to 107,000 acre-feet by the end of the water contract year, which runs from March 2013 through February 2014.
- Awarded $12.5 million in financial assistance under Part III of the Settlement Act to cost-share four groundwater banking projects in the San Joaquin Valley.
- Completed the Draft and Final Environmental Assessment and Finding of No Significant Impact for the Recirculation of Recaptured Water Year 2013-2017 SJRRP Flows.
- Completed the Draft and Final EA and FONSI for a Temporary One-year Transfer and Exchange of Recaptured SJRRP Flows From Madera Irrigation District and Chowchilla Water District to Red Top.

Restoration Goal Accomplishments

Key accomplishments towards achieving the Restoration Goal include the following:

- Trapped and transported more than 300 fall-run Chinook salmon above the Merced River confluence to spawning areas just below Friant Dam as part of the second Trap and Transport Study from October through December.

- Finalized the 2014 Monitoring and Analysis Plan.
- Began the Program's spring-run Chinook salmon broodstock efforts.
- Completed the Endangered Species Act 10(j) and 4(d) rule process.
- Completed modifications to Reclamation's water rights at Friant Dam to implement the SJRRP on a long-term basis.
- Completed an EA, FONSI, and Financial Assistance Agreement for Operations and Maintenance Funding for the Interim San Joaquin Salmon Conservation and Research Facility.
- Completed the Salmon Conservation and Research Facility Permanent Flow Delivery Appraisal Study.
- Completed a Final EA/Initial Study and Signed the FONSI for the Arroyo Canal Fish Screen and Sack Dam Fish Passage Project.
- Completed the Draft Channel Capacity Report for the 2014 Restoration Year.
- Completed the Final Riparian Habitat Mapping, Monitoring, and Mitigation Plan - Technical Implementation and Planning Approach Report.

Flows Implementation Accomplishments

The fourth and final year of interim flows began on October 1, 2012, and concluded on December 31, 2013. Data collection continued, including water temperature, groundwater levels, sediment, water quality, dissolved oxygen and biological studies. Seepage management activities to support interim flows continued, including working with landowners to resolve seepage issues through easements or projects on their properties, as well as monitoring of shallow groundwater wells to address seepage concerns and expanding of the groundwater monitoring network on public and private property to better understand changes in shallow groundwater conditions. Key flow implementation accomplishments include the following:

- Completed the Restoration Flow Guidelines on the Settlement schedule in preparation for Restoration Flows, which are scheduled to begin on January 1, 2014.
- Completed three of eight flowage easements needed to allow flows below Sack Dam and reconnect the river once again.
- Updated the Seepage Management Plan with thresholds based on groundwater levels without flow in the river.
- Completed the spring and fall pulse releases.

Other key program documents released include the Final Fiscal Year 2013 Annual Work Plan and the Draft and Final Fiscal Year 2014 Annual Work Plan.

2014

During 2014, the program will work to accomplish the following key activities:

- Resolve priority seepage impediments to reconnect the river and allow for up to 300 cfs in the river past Sack Dam.
- Release spring-run Chinook salmon in spring 2014.
- Continue monitoring of the shallow groundwater and working with landowners to address potential seepage concerns.
- Release the Draft EIS for the Mendota Pool Bypass and Reach 2B Channel Improvements Project for public comment, a project that will significantly improve the ability to move water through the river system and provide fish habitat.
- Continue conducting study activities, including trap and transport of fall-run Chinook salmon, as part of the monitoring and analysis required to address areas where more information is needed in order to make the best decisions for the successful habitat restoration and reintroduction of fish to the river.
- Begin construction actions for the Friant-Kern Canal Capacity Restoration Project.
- Begin Restoration Flows on January 1, 2014.

Looking Further Ahead

Key events in the following year will continue to mark significant program accomplishments. The last year of experimental, or interim, flows ended in 2013, and restoration flows begin January 2014. With obtaining flowage easements, once again, the river will be reconnected for the entire 153 mile stretch of the restoration area, and spring-run Chinook salmon will be released into the river in the spring.

The program will continue shallow groundwater monitoring and working with landowners to address potential seepage concerns related to restoration flows. As data is obtained, the program will account for subsidence, as necessary, for major projects. The Friant-Kern Canal Capacity Restoration Project is anticipated to be the first project to begin construction. One major channel improvement project will release draft environmental documents for public comment and could start construction in 2016/2017.

Battle Creek Salmon and Steelhead Restoration Project

During 2013, the Region advanced the Battle Creek Salmon and Steelhead Restoration Project, which is among the largest cold-water anadromous fish restoration projects in North America.

The project is an effort to increase threatened and endangered Chinook salmon and Central Valley steelhead trout populations by restoring about 48 miles of habitat -- 42 miles in Battle Creek and another six miles in its tributaries -- while maintaining renewable energy production at the Battle Creek Hydroelectric Project, owned and operated by the Pacific Gas and Electric Co.

Restoration was begun in 2010 and is scheduled for completion in 2016. It is being accomplished in three phases, primarily through the removal of five diversion dams, placement of screens and ladders on three other diversion dams, and increasing stream flows, all within Tehama and Shasta counties in northern California.

Phase 1A

With the removal of Wildcat Diversion Dam in 2010, about 15 miles of stream habitat was restored for Chinook salmon and Central Valley steelhead trout. The majority of fish screen and ladder construction was completed on the North Battle Creek Feeder and Eagle Canyon Diversion Dams in 2011; a contract to complete the NBCF access road (including cut-slope stabilization) was awarded in July 2013, and implementation of civil, mechanical and electrical design changes is expected to begin in Fiscal Year 2014. Upon full completion of the work at the NBCF and Eagle Canyon Diversion Dams sites in 2015, an additional nine miles of stream habitat will be restored.

In January 2013, a contract was awarded to construct a fish barrier weir and maintain a minimum flow of 5 cubic feet per second in Baldwin Creek near Asbury diversion, downstream of the Darrah Springs State Trout Hatchery. The 5 cfs will allow for suitable salmon and steelhead habitat, while the barrier will prevent these fish, which could carry viruses, from infecting the trout hatchery. This construction will restore an additional mile of habitat. Upon completion of Phase 1A, 25 miles of stream habitat will have been restored.

Phase 1B

Construction of the Inskip Powerhouse discharge outlet and a 5,600-foot bypass to Coleman Canal on the South Fork of Battle Creek (to prevent mixing of north and south fork waters) was completed in January 2013. Several improvements were performed by Reclamation construction crews in 2013, including access road drainage improvements and removal of sediment at the upper jump basin and within the canal. Safety and facility access improvements are planned for completion in 2014.

Phase 2

Data collection, as well as design and compliance efforts, occurred in 2013 for this final project phase, which involves the installation of a fish screen and ladder on Inskip Diversion Dam, installation of a South Powerhouse discharge outlet connector, and removal of Lower Ripley Creek Feeder, Soap Creek Feeder, and Coleman and South Diversion dams. Phase 2 construction is scheduled to occur from 2015 to 2016. Upon completion of Phase 2, 23 more miles of stream habitat will have been restored.

Project History

Via a Memorandum of Understanding, signed in June 1999, Reclamation, the National Marine Fisheries Service, U.S. Fish and Wildlife Service, the California Department of Fish and Wildlife and PG&E initiated work on the project. In addition to the MOU partners, the project has been developed in collaboration with various resource agencies, including the California Wildlife Conservation Board, with participation from the public, stakeholders, and landowners (including the Greater Battle Creek Watershed Working Group and the Battle Creek Watershed Conservancy).

The project is being supported with federal, state and private funding. The American Recovery and Reinvestment Act of 2009, the CALFED Bay-Delta Program, and the Iron Mountain Mine Trustee Council are contributing federal funds; the DFW, the WCB, the California Department of Transportation and the California Department of Water Resources are contributing state funds; and the Packard Foundation (via The Nature Conservancy) is contributing private funds. PG&E is contributing to the project in the form of foregone energy generation, voluntarily pursuing amendments to the Battle Creek Hydroelectric Project's federal energy generation license, and transferring certain water rights to the DFW.

A tractor and crew work on the Coleman Diversion Dam.

A contractor pours concrete for a fish barrier wall placement at the Baldwin Creek Fish Barrier.

Workers use “super sacks” to build a diversion dam in Baldwin Creek.

Material is placed in the Trinity River to improve fish spawning habitat.

Trinity River Restoration Project

The Region's Trinity River Restoration Program is a long-term, comprehensive effort to restore fish and wildlife populations in and along the Trinity River, below dams that are part of California's Central Valley Project.

The restoration program includes flow management, channel rehabilitation, sediment control and watershed restoration. The results are monitored and assessed to incorporate experience into future restoration efforts through adaptive management.

The program differs from many other restoration programs in that it employs a riverine approach intended to create a dynamic river capable of building and maintaining anadromous fish habitat system-wide. The program's goals are to create sufficient suitable habitat through achievement of healthy river attributes to maintain fish populations and to predict, measure and evaluate progress toward meeting long-term fishery and habitat goals that also influence short-term management actions.

Restoration of the river, below Trinity and Lewiston dams, is an important aspect of meeting requirements of the 1992 Central Valley Project Improvement Act for fish and wildlife protection and mitigation as the CVP meets its water supply responsibilities.

Since the signing of the TRRP Record of Decision in 2000, the restoration program has finished Phase 1 of the channel rehabilitation component of the ROD.

During 2013, the program completed two channel rehabilitation sites, Douglas City and Lorenz Gulch. To date, the program has completed 30 of the originally proposed 47 rehabilitation sites within the 40-mile restoration zone.

At the Lower Douglas City site downstream of the Highway 299 bridge at Douglas City, Reclamation, and program partners created a split flow channel and island, enhanced an existing gravel bar with large wood, placed boulders to create fish holding habitat, and enabled the Weaverville Community Service District to replace an infiltration gallery to increase withdrawals from the mainstem of the Trinity River. The infiltration

gallery reduces withdrawals from the Weaver Creek tributary, important habitat for threatened coho salmon. The project was constructed on private, municipal and state property in cooperation with three local landowners, the CSD and the California Department of Transportation.

More extensive construction took place at the Lorenz Gulch site under oversight of the TRRP partner, the Yurok Tribal Fisheries Department, and in cooperation with the Bureau of Land Management. Construction of an in-river island, a side-channel, large wood-and-boulder habitat placements, and extensive native plant revegetation were coordinated to accommodate planned improvements to the BLM recreation area, including improved river access, parking, sanitation and camping.

In 2013, the TRRP also:

- Initiated new variable spring restoration flows that benefitted the increased numbers of juvenile fish emerging as a result of the 2012 record adult returns, and aided riparian seed dispersal, germination, and survival.
- Developed and incorporated quantifiable habitat metrics into multi-criteria decision analysis to select final rehabilitation project designs.
- Conducted five cooperative watershed projects, keeping 15,500 cubic yards of fine sediment from entering the Trinity River. Fine sediment blankets on spawning beds can smother developing fish eggs.
- Carried out monitoring and assessment of factors such as smolt migration and adult return timing, adult spawning escapement, and sport and tribal harvest to calculate fish population numbers; sediment transport; system-wide habitat assessment; and system-wide bird abundance.

Above and below: Changes in the Trinity River to improve fish habitat include creating an island and placement of boulders.

Central Valley Project Improvement Act

The Central Valley Project Improvement Act of 1992 amended previous authorizations of the CVP to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic uses; and fish and wildlife enhancement as a project purpose equal to power generation.

From 1993 through 2013, Reclamation and its partners have completed several large projects, including the Glenn-Colusa Irrigation District fish screen, the Anderson-Cottonwood Irrigation District fish screen, the Shasta Lake Temperature Control Device, the Contra Costa Canal pumping plant, the Coleman National Fish Hatchery, and the Red Bluff Fish Passage Improvement Project. Mid-Pacific Region implementation of the CVPIA is currently comprised of more than 20 programs and projects that fall into broad resource areas, including fish, refuge water supply, habitat restoration, and ecosystem and water operations modeling. Reclamation and the U.S. Fish and Wildlife Service jointly implement the CVPIA.

Fish Resource Area

The goal for the Fish Resource Area is to double the natural production of anadromous fish in the Central Valley on a sustainable, long-term, basis. In addition to reservoir releases, Reclamation and Service restoration accomplishments in 2013 in the Sacramento Basin include:

- American River spawning and side channel habitat improvements with the addition of 6,000 cubic yards of gravel.
- Antelope Creek Crossing Repair Project at the Tehama Wildlife Area completion of the riparian planting requirements.
- Battle Creek removal of the Wildcat Dam and Canal and a new fish screen and bypass at Eagle Canyon Dam.
- Cow Creek completion of designs for the Clover Creek Fish Passage/Millville Diversion Dam Restoration Project.
- Deer Creek completion of field site surveys for the Lower Deer Creek Fall Fish Passage Improvement Project (Phase 1).
- Mill Creek completion of alternatives for the fish passage at the two diversion dams and exposed siphon.
- Sacramento River accomplishments included redd stranding surveys and a project to modify diversions by Sacramento River Settlement Contractors to reduce redd dewatering; completion of fish screens including: the Natomas Mutual Sankey Fish Screen and removal of the Natomas Cross Canal fish migration barrier, completion of four screens at River Garden Farms #3, screens at Townsite, Alamo Farms #1, Tisdale Irrigation District #2, Cranmore Farms #2, and Joe Sanhes Farms in the Sacramento-San Joaquin Delta; and 14,000 tons of gravel placement below Keswick Dam.
- Yuba River planting of five acres to restore riparian habitat on Hammon Bar.

Reclamation and Service restoration accomplishments in the San Joaquin Basin during 2013 include:

- Calaveras River completion on the Caprini Low Flow Crossing Fish Passage Project to restore access to six miles of habitat.
- Consumnes River final designs to re-connect three historic tidal sloughs and restore 85 acres of floodplain habitat in the Delta.
- Merced River completion of designs and permitting for the Merced River Floodplain and Channel Restoration Project at Snelling, Calif.
- Mokelumne River coordination for experiments on pulse flow releases and operation of the Delta Cross Channel Gates.
- Stanislaus River planning and design alternatives for the Knights Ferry Floodplain Restoration Project and the Buttonbush Floodplain Restoration Project.

The Fish Resource Area includes a number of actions to assess and monitor the performance of restoration efforts and plan for undertaking the most effective future actions. The Fish Resource area made substantial investments in establishing a structured decision making framework for planning future fish restoration actions.

CVPIA funding related to the Fish Resource Area includes financial support for the San Joaquin River Restoration Program and the Trinity River Restoration Program.

Refuge Water Supply Resource Area

The goal of the Refuge Water Supply Resource Area is to provide water supply for optimal habitat management to 19 federal, state and private wildlife refuges. Water supplies are categorized as Level 2 (average historical deliveries obtained from project yield) and Incremental Level 4 (additional water required for optimum habitat

obtained without involuntarily reallocations of project yeild). The Region was able to achieve the following deliveries through the Refuge Water Conveyance Component of the program during Fiscal Year 2013:

- The Refuge Conveyance Program delivered 389,343 acre-feet of Level 2 water supplies, representing 92 percent the targeted 422,251 AF.
- The Refuge Water Acquisition Program acquired and delivered 48,096 AF of Incremental Level 4 water supplies to north and south of Delta refuges, after accounting for conveyance losses representing 36 percent of the targeted 133,264 AF.
- The Refuge Facility Construction Program contracted for ongoing repairs to the East Bear Pumping Plant, modified Gray Lodge and Pixley groundwater wells, contracted for feasibility studies for the Sutter Natinoal Wildlife Refuge, and completed the final design for the Biggs-West Gridley Water District Facilities for deliveries to the Gray Lodge Wildlife Area.
- The amount of water the Region can deliver to wildlife refuges depends on several factors, including the availability of water and ability of Reclamation to deliver water to certain refuges.

Habitat Restoration Program

The Habitat Restoration Program's goals are to protect and restore terrestrial habitat and the species that depend on them.

The Habitat Restoration Program contributed to the protection of 1,030 acres of land through fee title acquisition of:

- 76 acres of vernal pools habitat in Butte County.
- 927 acres of grassland habitat in Fresno County.
- 27 acres of scrub-shrub habitat in Tulare County.

Of the acquired lands, 954 acres support the mitigation requirements for the State Water Resources Control Board.

Modeling Resource Area

The goal of the Ecosystem and Water Systems Operations Models Program is to develop broadly available and readily usable models and supporting data to evaluate the ecologic and hydrologic effects of existing and alternative operations of public and private water facilities and systems in the Sacramento, San Joaquin, and Trinity River watersheds. Accomplishments include: Modifications and improvements to the CalSim II cost for water operations; and improvements and modifications to the CalLite water operations model.

San Joaquin Valley Drainage Demonstration Plant

During 2013, the Region began constructing a demonstration plant that will be used to determine the best agricultural drain water treatment procedures for full-scale processing of irrigation drainage in portions of the western San Joaquin Valley.

Sladen Construction Group, Inc., of Stayton, Ore., was awarded $22.3 million to build the plant in the Panoche Drainage District, near Firebaugh, in Merced County.

Some of the world's most productive agricultural lands are located in the San Joaquin Valley, but in the Central Valley Project's San Luis Unit and adjacent lands a lack of full drainage service affects agriculture. Clay soils beneath farmland prevent irrigation water from percolating deeper into the soil and away from crop roots, causing water to accumulate in shallow water tables.

Better drainage will assist agriculture while avoiding or mitigating impacts to the environment and water quality. The irrigation drainage contains salt and elevated levels of a naturally occurring element, selenium.

The plant will be used to establish performance specifications for proposed selenium-removal technologies (reverse osmosis and bio-treatment); evaluate pretreatment options (flocculation, plate settler, media filtration, ultra-filtration, pH adjustment); and collect data for designs and cost estimates for future drainage plants in the CVP's San Luis Unit.

The demonstration plant will be able to process 200 gallons per minute of agricultural drainage. The facility will include an 11,600-square-foot structure and 14 holding tanks of up to 65 feet in diameter and up to 26 feet in height.

The plant is scheduled to be operated for at least 18 months to collect data for final designs. Afterward, operation of the plant may continue by Reclamation or a designated operating partner.

An aerial view of the Klamath basin with Mt. Shasta in the background.

Klamath Basin Achievements

During 2013, there were two significant accomplishments in the Klamath Project. In June 2013, federal agencies issued a biological opinion which concluded that ongoing operations of the project are not likely to jeopardize the continued existence of federally listed species. In December 2013, the Klamath Basin Task Force and Upper Basin Water Group announced an agreement in principle on Upper Basin water issues.

Biological Opinion

The BO issued by the National Marine Fisheries Service and the U.S. Fish and Wildlife Service analyzed effects of Klamath Project operations, through the year 2023, on federally listed species. The opinion found that Reclamation's water management approach will optimize limited water supplies, benefitting both listed fish species and project water users.

The BO analyzed the effects of the ongoing operations of the project through March 2023 on federally listed, threatened and endangered species, including the endangered Lost River and shortnose suckers and the threatened coho salmon and their designated critical habitat.

Reclamation, NMFS, and the USFWS participated in extensive interagency coordination during 2012 and 2013 for the purpose of collaboratively developing a water management approach that has the flexibility to optimize the benefits of available water for federally listed species, while providing irrigation deliveries to the project. Through this collaboration, Reclamation developed an innovative approach, with the benefit of providing greater certainty, early in the year, on the amount of water that will be available for Upper Klamath Lake (endangered suckers), the Klamath River (threatened coho salmon) and the overall project.

Implementation of this innovative water management approach will be beneficial during dry hydrologic years such as 2013, and throughout the term of the BO, because the approach is expected to more efficiently optimize limited water supplies to benefit listed fish species and project water users than in the past.

Agreement in Principle

In December, Reclamation and other members of the Klamath Basin Task Force and Upper Basin Water Group announced an agreement in principle on Upper Basin water issues.

Task force members, which included representatives of the upper Klamath Basin agricultural community and the Klamath Tribes, and state and federal agencies, developed an agreement in principle on water that addresses continuing conflicts over water use in the upper basin. The agreement, which also addresses ways to improve the economic condition of the Klamath Tribes, was developed by a sub-group of the full task force.

The full Klamath Basin Task Force held its final meeting in December 2013 to review the agreement in principle on water, as well as proposals to reduce the federal costs of the Klamath agreements and ways to provide affordable power for irrigators. Following input from community members in 2014, an agreement in principle will be forwarded as recommended legislation to members of Congress.

Red Bluff Fish Passage Improvements/Pumping Plant

Reclamation is nearing completion of the $185 million Red Bluff Fish Passage Improvement Project in Red Bluff in northern California, a project that represents the culmination of decades of efforts by various entities to find a balanced solution that improves fish passage and the reliability of irrigation water to highly productive farmland.

The Region, which completed a new pumping plant and other major aspects of the project from 2010 through 2012, awarded a $3.9 million contract in September 2013 to decommission the Red Bluff Diversion Dam. Crews will work through 2014 to finish bracing the dam's gates in the fully raised position.

During 2013, workers also restored the areas that were affected by construction. Earth moved during construction was returned to its natural shape and vegetation was planted to return the region to its former condition.

The overall improvement was required by the Central Valley Project Improvement Act of 1992 and reaffirmed by the National Marine Fisheries Service's 2009 Biological Opinion for operation of the Central Valley Project, mandating an alternative to the Red Bluff Diversion Dam and raising of the gates year-round.

The Red Bluff Diversion Dam, completed in 1964, contains a series of 11 gates that, when lowered, provided for gravity diversion of irrigation water from the Sacramento River into the Tehama-Colusa and Corning canals. The Red Bluff Diversion Dam had been an impediment to upstream and downstream fish migration, and a significant portion of the Sacramento River spawning habitat for endangered salmon and steelhead upstream of the dam. Adult fish moving upstream had difficulty finding and using the ladders for passage over the dam, and juveniles migrating downstream through the dam became disoriented by the turbulence, resulting in significant mortality from predator fish. The main species of concern were the winter- and spring-run Chinook salmon, Central Valley steelhead and green sturgeon.

The fish passage improvement project involved construction of a pumping plant, screened to protect fish, which conveys water from the Sacramento River to the irrigation canals. The pumping plant has replaced the diversion dam. The dam's gates have been placed in the open position for free migration of fish, and the braces will make the action permanent.

The new pumping plant ensures continued water deliveries to 150,000 acres of farmland throughout a four-county area, served by 17 water districts. The $185 million in funding for the project includes $113 million from the 2009 American Recovery and Reinvestment Act, the largest single outlay of ARRA funding in the nation by the Department of the Interior.

The project included construction of components such as the pumping plant intake; the pumping plant itself, which included nine pumps that together have a pumping capacity of 2,000 cubic feet per second; an 1,118-foot-long fish screen structure; a canal siphon; a discharge conduit; and a 660-foot-long bridge that allows maintenance workers access to the project.

Red Bluff Diversion Dam with closed gates.

CLIMATE CHANGE

Overview

The U.S. Department of the Interior has tasked Reclamation with assessing the potential impacts of climate change during the 21st century and how these changes might impact water operations, hydropower, flood control, and fish and wildlife in the western United States. The Mid-Pacific Region is coordinating several different studies that will assess risks to future water supplies across its river basins and water projects, while analyzing a wide range of adaption and mitigation strategies.

Sacramento and San Joaquin Basins Study

During 2013, the Region completed a comprehensive Climate Impact Assessment, which was the first phase of the Sacramento and San Joaquin Basins Study. The assessment evaluated climate impacts to water supplies and demands throughout the basins. Findings in this assessment included increases in mean annual temperatures under several future climate scenarios by up to 6 degrees Fahrenheit by the end of the 21st century throughout California's Central Valley. It also forecast a decline of up to 5 percent in precipitation in the northern half of the valley and up to 10 percent in the southern portion.

The purpose of the Sacramento and San Joaquin Basins Study, begun in November 2012 and projected to be completed by November 2014, is to conduct a comprehensive assessment of the effects of future changes in climate on water supply and demand. The basins study will perform a system risk and reliability assessment of the baseline system, which includes identification of current and future imbalances in water supplies and demands under different potential future conditions.

As the basins study nears completion, the comprehensive set of adaptation and mitigation strategies will include those proposed by study partners and stakeholders during public meetings.

Klamath Basin Study

The Region's work on the study in 2013 included extensive research on the area and development of a water supply assessment, reviewed by the study's Technical Working Group and by external reviewers from the U.S. Army Corps of Engineers, Oregon Climate Change Research Institute and the U.S. Geological Survey.

In 2014, the study team will begin a system reliability analysis, which will be followed by an outreach process to identify potential climate adaptation strategies to be considered in the study.

Truckee Basin Study

During 2013, the Region's work on this basin study included meeting with the public agencies in the Truckee Basin that have water management or land-use planning authority. The meetings determined how agencies view future growth and water demands in their jurisdictions.

Based on these meetings, the study team, along with the major study partners and stakeholders, prepared three socio-economic projections or "storylines," which are scenario-based narrative descriptions of projected future conditions in the Truckee Basin, out to the year 2100. The scenarios are being used to estimate water supplies and a potential range of future water demands. During 2013, work was also initiated on a specialized investigation to assess potential climate changes to flood frequency and volumes in the Truckee River. This flood investigation will be completed by 2014.

Central Valley Project Integrated Resource Plan

During 2013, the Region completed a long-range planning study which investigated potential climate change impacts on water supplies and demands for the Central Valley Project. This study also performed an exploratory analysis of potential climate adaptation strategies to address impacts.

The study employed a scenario-based planning approach by combining socioeconomic and projected climate futures from socioeconomic-climate scenarios, characterizing a wide range of 21st century uncertainties. Existing hydrologic, operational, water quality, hydropower, urban, and economic models were integrated into a suite of analytical tools and used to evaluate a wide range of potential impacts.

The study also simulated several portfolios of system-wide and local water management actions, including water conservation, storage, conveyance, and environmental flows that might potentially be employed to adapt to 21st century challenges. These adaptation strategies were evaluated in an exploratory manner against key CVP performance criteria to assess their potential effectiveness under the broad range of future uncertainties represented in the socioeconomic-climate scenarios, and to identify tradeoffs among the strategies for various water supply, urban and agricultural demand, water quality, environmental, hydropower, and urban and agricultural economic performance metrics.

The study results and models are currently being used to provide information and modeling capabilities to the Sacramento-San Joaquin Basin Study. In addition, the study is providing important climate change information to other long-range planning activities being conducted by Reclamation and partner agencies.

Drought

During 2013, California has experienced historically low precipitation, resulting in minimal reservoir inflows and low water allocations; challenges in managing Delta salinity; and early increases in reservoir releases, which had led to low carryover storage into 2014.

In an effort to proactively address potential dry conditions into 2014, the Bureau of Reclamation's Mid-Pacific Region held a series of meetings in 2013 with Central Valley Project water contractors, CVP power customers, Tribes, non-governmental organizations, other federal agencies, and state of California agencies to discuss the status of potential water management strategies in 2014. Customers and stakeholders were asked to provide ideas and suggestions for Reclamation's consideration in developing strategies.

Following the individual meetings and receipt of the interested parties' input, Reclamation developed a list of the suggested strategies and began holding group meetings, which gathered together individuals representing interests throughout the CVP. The goal of the meetings was to raise awareness about potential future conditions, facilitate open communication, and brainstorm water management considerations in the event conditions stay dry into 2014.

Due to the large number of actions and strategies included on the list and limited resources, Reclamation was unable to address each idea prior to the beginning of 2014. Although Reclamation has not committed to carry any particular action forward, the list of potential strategies will be aimed at minimizing negative impacts to affected CVP customers and stakeholders associated with a potential dry 2014 water year.

Since the 1970s, the Region has recognized the practice of transferring water from one water user to another through authorized legislation, secretarial directives, policy statements, transfer agreements, and water transfer guidelines.

Water transfers can be an effective incentive for improved water management, as well as a way to promote water conservation, particularly in drought years, as long as transfers are consistent with state and federal law.

The Region continues to facilitate transfers of both CVP and non-CVP water. The transfer of CVP water may occur as long as it is consistent with the Central Valley Project Improvement Act and the transfer of non-CVP water is consistent with California state law. Non-CVP water transfers requiring the use of federal facilities for conveyance and/or storage are supported through Warren Act contracts.

WATERSMART AND OTHER PROGRAMS

Overview

Water is our most precious natural resource and is increasingly stressed by the demands our society places on it. Adequate water supplies are an essential element in human survival, ecosystem health, energy production and economic sustainability. Significant climate change-related impacts on water supplies are well documented in scientific literature and scientists are forecasting changes in hydrologic cycles.

Congress recognized these issues with the passage of the SECURE Water Act, a law that authorizes federal water and science agencies to work together with state and local water managers to plan for climate change and other threats to our water supplies, and take action to secure our water resources for the communities, economies, and the ecosystems they support.

To implement the SECURE Water Act, and ensure that the Department of the Interior is positioned to meet these challenges, Secretary of the Interior Ken Salazar established the WaterSMART (Sustain and Manage America's Resources for Tomorrow) program in 2010.

WaterSMART allows all bureaus of the department to work with states, tribes, local governments, water agencies and non-governmental organizations to pursue a sustainable water supply for the nation by establishing a framework to provide federal assistance on the efficient use of water, integrating water and energy policies to support the sustainable use of all natural resources, and coordinating the water conservation activities of the various department offices.

Reclamation plays a key role in the WaterSMART program as the department's main water management agency. Focused on improving water conservation and helping water and resource managers make wise decisions about water use, Reclamation's portion of the WaterSMART program is achieved through administration of grants, scientific studies, technical assistance and scientific expertise.

WaterSMART provides funding, combined with grant recipient cost-share funds that support the following types of grants awarded by the Region in 2013: Water and Energy Efficiency Grants, Cooperative Watershed Management Program Grants, and Title XVI Program Water Reclamation and Reuse Projects. (Title XVI is also known as the Reclamation Wastewater and Groundwater Study and Facilities Act of 1992.)

Grant Awards

In Fiscal Year 2013, the Region awarded 15 water conservation and efficiency grants through WaterSMART and other programs that totaled $6.9 million. Including local cost-share contributions, more than $24.3 million in water management improvement projects will be implemented in the next 24 months. The projects will result in an estimated 24,568 acre-feet annually conserved and 40,000 AF annually better managed. The awards include seven WaterSMART Water and Energy Efficiency Grants, six CALFED Water Use Efficiency Grants, and two Bay-Delta Agricultural Water Conservation and Efficiency Grants.

Grant recipients were diverse, ranging from large water agencies to nonprofit entities, to agricultural districts, to non-federal contractors. Geographically, recipients spanned the Region. Examples of projects awarded grants in 2013 include a tail-water recapture and reuse project, a residential water meter installation project, a residential high efficiency clothes washer incentive program, canal linings, canal automation, and on-farm irrigation efficiency improvements.

In addition, administratively, the Region completed and closed-out 20 grant projects that conserved and better managed an estimated 12,208 acre-feet and 263,170 AF of water per year, respectively.

The following are two examples of these completed projects:

- The San Luis & Delta Mendota Water Authority in Los Banos, Calif. received a $100,000 CALFED Water Use Efficiency Grant for the flow measurement of O'Neill Pump/ Generating Plant, Phase 1 Project. The project involved installation of water flow measurement equipment at the O'Neill Plant to ensure real time information is available to water operators for delivery of water in the San Luis Canal to the San Luis Contractors for storage in the San Luis Reservoir. In addition, the data will provide

the amount of water available for delivery to the lower Delta-Mendota Canal and Mendota Pool Contractors. About one million acre-feet of water is delivered annually off the Delta-Mendota Canal downstream to the O'Neill Pump/ Generating Plant Intake channel. Implementation of this project increased efficiency by reducing losses of 2-5 percent, equating to 20,000 to 50,000 acre-feet of water available for beneficial uses.

- Tulare Irrigation District in Tulare, Calif., received a $300,000 WaterSMART Water and Energy Efficiency Grant for the Plum Basin Project, Phases II and III. With this funding, the district constructed two additional multi-use basins with a storage capacity of 491 acre-feet, thereby expanding upon the Phase 1 basin. The construction of the project conserved up to 4,500 acre-feet annually and increased the groundwater banking and water marketing capabilities by approximately 1,800 acre-feet per year. Additionally, the project could aide in renewable energy production at the existing hydroelectric facility and provide favorable habitat for endangered and other wildlife.

Water Management Plans

The Central Valley Project Improvement Act requires certain contractors to prepare water management plans according to specific criteria and best management practices. In 2013, the Region reviewed and approved 16 five-year water conservation plans. In addition, the Region is working closely with the California Department of Water Resources and Reclamation contractors to ensure contractor compliance with new state water conservation mandates and planning requirements.

Water Reuse

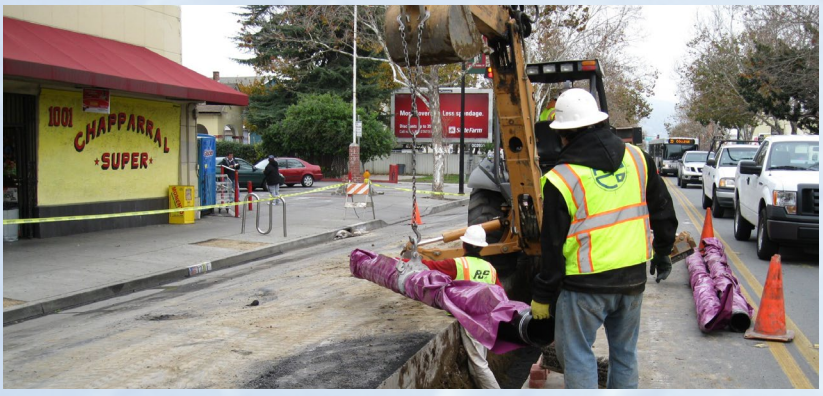
Under the WaterSMART program, the Region modified three existing agreements to provide for the construction of three reuse/reclamation projects. The sponsors will provide at least 75 percent of construction costs. The Region's 2013 projects include locations in the California counties of Marin, Monterey, Napa, Sacramento, Santa Clara and Sonoma.

The agreements were authorized under the Title XVI Program through which projects are constructed and owned by non-federal sponsors, uniting local communities with the federal government to provide change, growth, and a future for clean water and environmental stewardship in a broad range of areas. Primary goals are improved water-use efficiency, creation of additional water supplies, increased drought resistance of existing supplies, and a reduction in the reliance on inter-basin water transfers. The reclaimed water may be used for a variety of purposes, including environmental restoration; fish and wildlife uses; groundwater recharge; and certain municipal, domestic, industrial, agricultural and power generation uses.

Reclamation's role includes coordinating with non-federal project sponsors, providing advice on preparation of necessary reports, and reviewing the reports and submittals to determine whether the project meets the criteria of the Title XVI Program.

The following are examples of the construction projects:

- The Sonoma County Water Agency, as lead agency of the North Bay Water Reuse Authority, in Sonoma, Calif., received a WaterSMART grant of $4 million to continue design and construction of Phase 1 of the North Bay Water Reuse Program. The 5,457 acre-feet per year of recycled Phase 1 water will accomplish multiple objectives, including: Reduce reliance on local and imported surface and groundwater; reduce treated effluent releases to San Pablo Bay; provide recycled water for irrigation of high value crops, municipal irrigation, and restoration of wetlands; and improve in-stream flows for riparian habitat and fisheries recovery.
- San Jose, Calif., received a WaterSMART grant of $12 million to continue design and construction of the South Bay Water Recycling Program, a joint effort between the city, the Santa Clara Valley Water District, and other local water agencies. The program currently delivers an average of 10,000 AFY to more than 630 irrigation and industrial customers.
- The City of Watsonville, Calif., and the Pajaro Valley Water Management Agency were awarded $4 million for the Watsonville Area Water Recycling Project. The project reduces over-drafting of groundwater resources and subsequent seawater intrusion. It recycles 4,000 AFY of effluent from the city's wastewater treatment plant and blends it with higher quality water to reduce salinity; the recycled water is used to irrigate high value food crops. The project is comprised of expanded facilities at the city's wastewater treatment plant, a blending facility, and a distribution system for transporting the blended recycled water to agricultural users.



Top: Workers construct a recycled water reservoir in Sonoma County; *above:* A crane prepares to connect a tank to pipes at the Santa Clara Water District's Recycled Water Treatment Facility; *left:* A crew installs purple pipe to convey recycled water in San Jose, Calif.

AMERICA'S GREAT OUTDOORS ACTIVITIES

Throughout 2013, the Mid-Pacific Region organized events and continued the support of existing programs that better connect the public to the outdoors.

With the launch of the America's Great Outdoors initiative in 2010, federal agencies have continued to develop programs to protect America's natural and cultural resources, and connect people to the outdoors through jobs, education and recreation. Under AGO, the federal government has formed new partnerships with state and local governments, communities and grassroots organizations, to implement the initiative.

AGO focuses on engaging all Americans in healthy and exciting active outdoor recreation. The Obama Administration has further emphasized recreation through initiatives like the First Lady's Let's Move Outside! Initiative. Let's Move Outside, administered by the U.S. Department of the Interior, was created to get kids and families to take advantage of America's great outdoors, which abound in every city, town and community.

The First Lady's initiative is dedicated to solving the challenge of childhood obesity within a generation so that children born today will grow up healthier and able to pursue their dreams. At the launch of the initiative, President Barack Obama signed a presidential memorandum creating the first-ever Task Force on Childhood Obesity, which conducted a review of all programs and policies relating to child nutrition and physical activity, and developed a national action plan to maximize federal resources and set concrete benchmarks toward the First Lady's national goal.

The Region also supports the AGO and Let's Move Outside initiatives through a wide range of interpretive, educational and recreational activities at facilities throughout the Reclamation's field offices at Berryessa, Folsom, New Melones and Shasta lakes.

2013 Highlights

Among the most popular and best known of the events at many of the reservoirs is the Catch a Special Thrill (C.A.S.T.) for Kids Fishing events. Children with disabilities or disadvantages have an opportunity to go fishing on a boat, many for the first time. The events are supported by the Region in a broad partnership with other agencies and community groups.

The 14th annual C.A.S.T. For Kids event was held at Shasta Lake in northern California. The event teamed up community partners, volunteers and anglers with disabled and disadvantaged kids for a morning of fishing. Local bass clubs, state and federal agencies, local businesses and volunteers cooperate to create memories with these special-needs children.

Staff from the Central California Area Office's New Melones Lake held their annual C.A.S.T. for Kids fishing event at the Tuttletown Recreation Area. C.A.S.T. for Kids, teaming up anglers and special-needs children ages 5 to 16 for a day of fishing. Each of the 25 children received a free fishing rod and reel, bait and tackle equipment and instruction.

The Region's Lake Berryessa Field Office, in partnership with the C.A.S.T. for Kids Foundation and Pleasure Cove Marina, hosted 30 children at the fifth annual C.A.S.T. for Kids fishing event at Lake Berryessa. Reclamation's volunteers were assisted by 25 boat captains who donated their boats and expertise to take the kids out fishing and an additional 40 volunteers from a variety of agencies and groups who helped to set up, assist with registration and awards, prepare lunch, staff booths and provide other assistance.

Reclamation park rangers from New Melones Lake and Lake Berryessa participated in the 2nd annual Outdoor Summit for Youth at the U.S. Forest Service

Wildland Fire Training Center at McClellan Park in Sacramento, Calif. The event was hosted by the Bureau of Land Management to highlight and solicit input from young people about their multi-cultural experiences in America's Great Outdoors.

Reclamation park rangers led local Boy Scouts in a restoration event to celebrate National Public Lands Day at Lake Berryessa. Park rangers, scouts and volunteers spent the morning planting acorns, repairing restoration shelters, and removing weeds in the Oak Shores Day Use Area. The workers planted Blue Oak acorns and removed the invasive Yellow Star thistle from the Coyote Beach area of Oak Shores.

Reclamation park rangers offered guided kayaking tours to explore Carson Creek at New Melones Lake. Along the way, paddlers saw first-hand many cultural resources that have been exposed due to the lake's receding waters, as well as relics from the gold-mining days, and learned about ways to keep the lake clean of invasive Zebra and Quagga mussels.

One of the children, who participated in the New Melones Lake's annual C.A.S.T. (Catch a Special Thrill) for Kids fishing event at the Tuttletown Recreation Area, holds up a prize catch.

Students from Pacific Union College in Angwin, Calif., along with their professor, Aimee Wyrick, assisted Reclamation park rangers with oak tree restoration in Lake Berryessa's Oak Shores Day Use Area.

The Region hosted an environmental education program at Lake Berryessa for students from a nearby elementary school. Students, among other things, learned about the essential relationship of water to the entire ecosystem.

Visitors enjoyed a weekend game with New Melones Lake park rangers as they had an opportunity to compete in a lively game of "Wheel of Wealth!" A wide variety of topics were expressed in simple, five-word puzzles. Messages about the water cycle, stewardship and safety were relayed in an entertaining way geared for young and young-at-heart. All of the players were awarded wheel "winner" buttons.

LAKE TAHOE DAM ANNIVERSARY

100th Anniversary Celebration Held for Lake Tahoe Dam

Reclamation, in partnership with the Truckee Meadows Water Authority and the Truckee Carson Irrigation District, celebrated the 100th anniversary of the completion of Lake Tahoe Dam with a ceremony at the dam in August 2013.

The celebration began with welcoming remarks by Kenneth Parr, Reclamation; Cindy Gustafson, Tahoe City Public Utility District; and Herman Fillmore, Washoe Tribe of Nevada and California. A Tribal invocation was given by Washoe Tribal member Melba Rakow.

Speakers included Pablo Arroyave, Reclamation; California Assemblyman Brian Dahle; Lucas Ingvoldstad, representing Nevada Sen. Harry Reid; Rocklund "Rocky" Deal, representing California Congressman Tom McClintock; Steve Davey, representing California State Senator Ted Gaines; Brian Barton, California State Parks; Elwood Lowery, Pyramid Lake Paiute Tribe; Mike Carrigan, Truckee Meadows Water Authority; and Ernest Schank, Truckee Carson Irrigation District. The ceremony concluded with the unveiling of a memorial plaque.

Lake Tahoe Dam, part of Reclamation's Newlands Project, was constructed to control the top six feet of Lake Tahoe, or some 732,000 acre-feet of water. It is a concrete slab and buttress structure standing 18.2 feet high and 109 feet long and has 17 vertical gates that regulate the outflow from Lake Tahoe to the Truckee River. In 1981, the dam was listed on the National Register of Historical Places and is now an integral feature in Tahoe City.

During his comments, Arroyave, deputy regional director for the Region, said, "The Bureau of Reclamation was formed in June 1902 when President Theodore Roosevelt signed the Reclamation Act. One of our very first authorized projects was right here: the Truckee-Carson Project, today known as the Newlands Project. And so, in 1903, just one year after Reclamation was established, we began to build the Truckee-Carson Project, which includes Lake Tahoe Dam."

The dam's 100th anniversary celebration began a four-day community event organized by the North Lake Tahoe Historical Society, Tahoe City and the Tahoe City Public Utility District which were also celebrating Tahoe City's 150th and Tahoe City Public Utility District's 75th anniversaries.

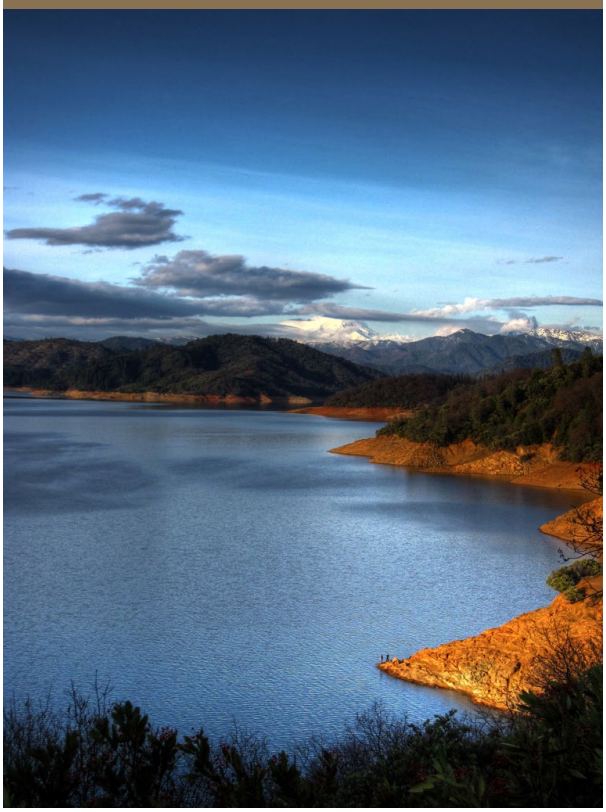
Top: Kenneth Parr and Pablo Arroyave standing by the memorial plaque; *middle*: Melba Rakow, Washoe Tribal Elder, gives invocation; *bottom*: Visitors at the luncheon.

Mid-Pacific Regional Deputy Director Pablo Arroyave addresses crowd gathered to celebrate the 100th anniversary of Lake Tahoe Dam.

A bronze commemorative plaque stands in front of Lake Tahoe Dam for viewing by visitors during the anniversary ceremony.

EMPLOYEE PHOTO CONTEST

PEOPLE'S CHOICE BEST OF SHOW



"Late Afternoon Shore Fishing at Shasta Lake," photograph by Tami Corn, Northern California Area Office.

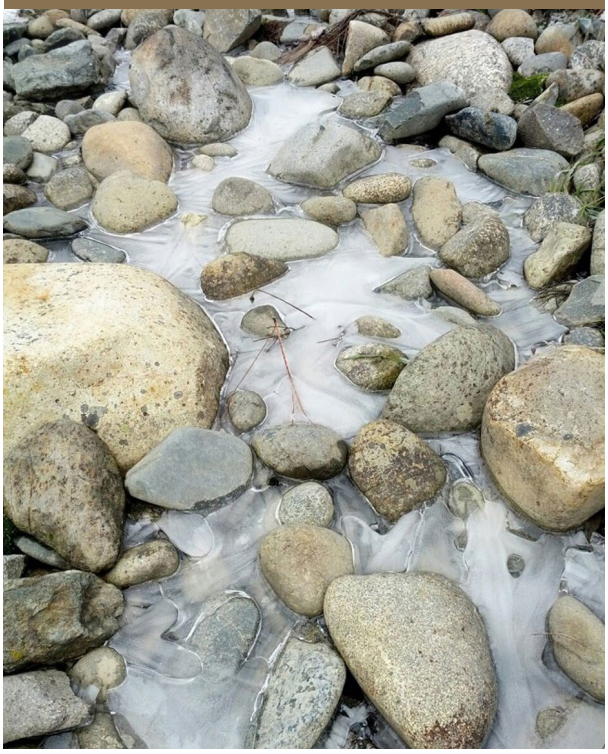
PEOPLE

"Camp Nine Kayak," photograph by Lucas Wicker, Central California Area Office.

JUDGES BEST OF SHOW

"Burrowing Owl," photograph by Ben Lawrence, South-Central California Area Office.

LANDSCAPE



"Frozen," photograph by Laurie D. Larson, Northern California Area Office.

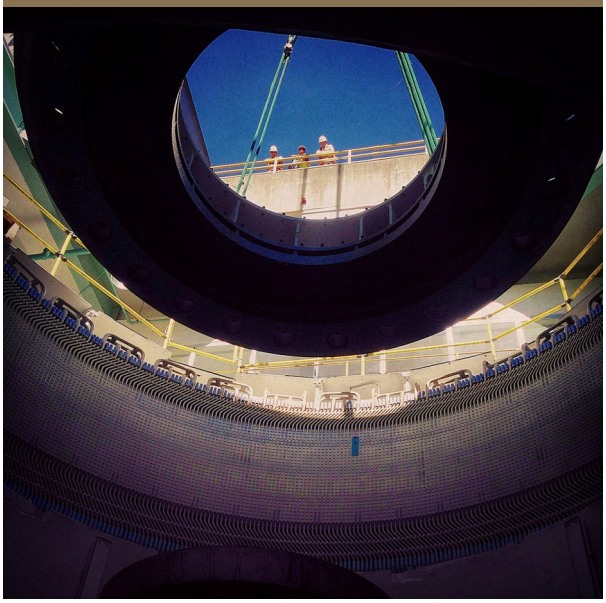
FLORA

“Scotch Broom at Shasta Dam,” photograph by Tami Corn, Northern California Area Office.

WILDLIFE

“Hawk at Glory Hole Recreation Area,” photograph by Alicia Palmer, Central California Area Office.

FACILITIES

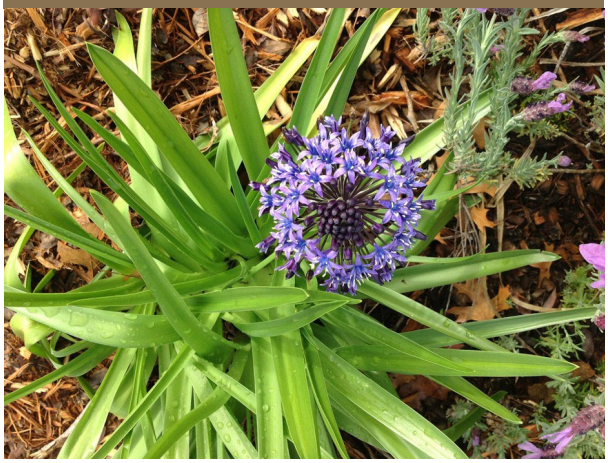


“A Peek into Stator,” photograph by Christopher B. Mitcham, Central California Area Office.

HONORABLE MENTION

“Not Sleet, Snow, or Ice,” photograph by Patrick Shima, Central Valley Office.

HONORABLE MENTION



"Spring Bloom," photograph by Kathy Marlow, Central California Area Office.

HONORABLE MENTION

"Corner of the Powerplant," photograph by Rita Foti.

HONORABLE MENTION

"Summer Guardian of Shasta Dam," photograph by Paul Zedonis, Northern California Area Office.

WEB RESOURCES

- Department of the Interior
  http://www.doi.gov
- Bureau of Reclamation
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- MP Region
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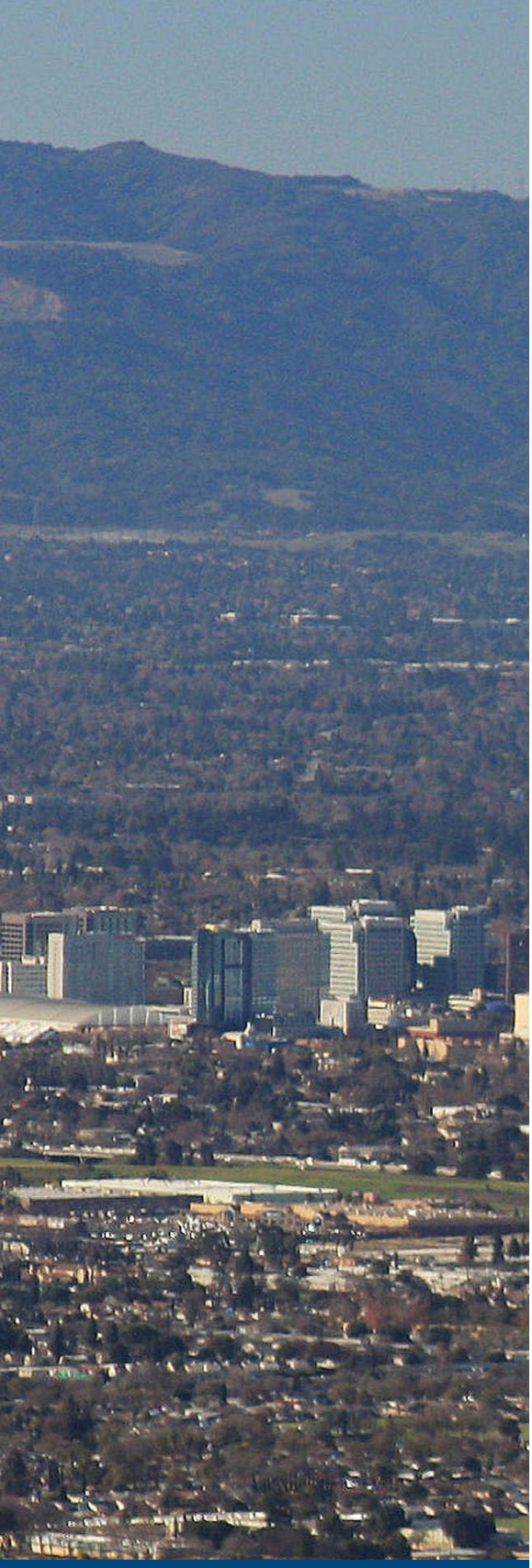

On the front cover: Lake Tahoe Dam during anniversary celebration (see pages 43-44 for story). **On the back cover**: *Left*: View of the southern San Francisco Bay area, served by the Central Valley Project; *right top*: Adult red-shouldered hawk feeding young at a wildlife refuge (employee contest photo by John Bohrman entitled “Lunch time! (Red-shouldered hawk”); *right middle*: Central Valley farm served by the CVP; *right bottom*: Kayaking roll (employee contest photo by Alicia Palmer, entitled “Playboating Camp Nine”).