

# DWR NEWS | *People*

SPRING/SUMMER 2009



## Solving the San Joaquin Valley's Agricultural Drainage Problems

**Left to Right:** Drainage Management Engineer Ken Johnson with Supervising Engineer Jose Faria stand at solar evaporator unit located at Red Rock Ranch in Fresno County.



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Passage of Propositions 84 and 1E resulted in significant new responsibilities for the Department of Water Resources. In addition to other new programs, DWR is now administering a \$5 billion FloodSAFE California program and a \$1 billion Integrated Regional Water Management program. Our department is committed to implementing

these important programs in the most efficient and expedient manner possible, while continuing to meet our existing responsibilities.

Over the past two years, DWR managers have considered changes to our organizational structure that could improve our ability to respond to these new mandates. One part of the Department where significant changes are underway is with the Division of Planning and Local Assistance and the Office of Water Use Efficiency and Transfers. If all goes according to plan, a new organizational structure that better aligns staff in these areas with new bond-funded responsibilities will become effective on July 1, 2009.

The proposed reorganization creates two distinct, closely coordinated water management Divisions: the Division of Statewide Integrated Water Management (DSIWM) and the Division of Integrated Regional Water Management (DIRWM). While the new names will take some getting used to, the purposes of these new Divisions should be familiar to those who have followed recent updates of the California Water Plan.

The mission of the Division of Statewide Integrated Water Management will be to conduct and support water resources and flood management planning and to develop and adapt California's water and flood management systems, while applying the principles and practices of integrated water management. DSIWM will provide expertise, technical assistance, and other essential support activities such as information collection and exchange, economic evaluations, and best practices for over two dozen resource management strategies described in the California Water Plan.

The Division of Integrated Regional Water Management will support the stewardship of California's water resources at the local level through technical and financial assistance, data collection and dissemination, resources evaluation, and coordination. DIRWM will include two branches in

Sacramento and four Regional Offices, formerly known as District Offices. DIRWM will provide linkage between DWR and local water agencies, communities and stakeholders.

DIRWM will support regional planning efforts through financial assistance as well as technical assistance and expertise in surface and groundwater hydrology and water quality, hydrogeology, desalination, reclamation and reuse of water, land and water use, recreation planning, floodplain management, environmental review and compliance, and mapping. DIRWM will administer loan and grant programs designed to make more efficient use of surface and groundwater resources and to promote integrated regional water management.

The renaming of our District Offices to Region Offices (Northern, North Central, South Central, Southern) is more than superficial; this relabeling is representative of DWR's commitment to supporting regional water management efforts as a key initiative in solving California water issues. Local governments, agencies, and stakeholders have the best understanding of their water management challenges. The most creative, efficient solutions are found when these groups work together on a regional basis with support from the State. The new Region Offices will provide regional coordination support for all DWR divisions and offices and use established relationships to enable more direct and efficient communication, cooperation and improve the likelihood of success for all Department programs and projects.

Through preparation of California Water Plan Update 2009, we are laying out the state's blueprint for integrated water management and sustainability, marking a new chapter in the way California manages its water resources — both statewide and regionally. We must adapt and evolve California's water systems more quickly and effectively to keep pace with ever changing conditions. With new urgency, California's regions must develop and implement integrated regional water management plans as regional roadmaps to sustainable water uses and reliable water supplies. We must also continue our efforts at the statewide level to develop and implement plans for a sustainable Delta and to improve our flood management systems. Our new organizational structure is one small step that will help us achieve these goals.

**Mark W. Cowin**, Deputy Director

Arnold Schwarzenegger  
**Governor**

Mike Chrisman  
**Secretary for Natural Resources**

Lester Snow  
**Director, Department of Water Resources**

Margarita Macias  
**Editor**

**Contributing Writers:**

Amy Norris  
Matt Notley  
Don Strickland  
Ted Thomas  
Sean Walsh  
Pete Weisser

**Design:**

Page Design Group

**Photography:**

DWR Photography Unit

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**Please send questions, comments, or story ideas to:**

DWR NEWS/People  
Public Affairs Office  
Department of Water Resources  
1416 Ninth Street, Room 252-21  
Sacramento, CA 95814

**Email:**

dwrpeople@water.ca.gov

**Phone:** (916) 653-8743

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## Solving the San Joaquin Valley's **Agricultural Drainage Problems**

*By Maggie Macias*

With the advent of irrigation from the State Water Project and Central Valley Project, the west side of the San Joaquin Valley has become one of the most productive agricultural regions in the world and a key supplier of food to our State and to the nation. However, because of an average 1.2 million tons of salts imported

through irrigation per year and the nature of the soils which require drainage, the west side of the valley faces growing salinity that threatens to disrupt both the economy and the environment of the region.

Agricultural drainage salts and many of their constituents endanger the quality of groundwater supplies and further degrade surface water supplies of the main stem of the San Joaquin River in the valley and the Sacramento-San Joaquin Delta and decrease the productivity of more than 1.5 million acres of irrigated land.

To reduce these impacts, effective agricultural drainage is essential. To achieve effective drainage water management, a team of 13 San Joaquin District employees has continued to implement the Department of Water Resources' (DWR) San Joaquin Valley Drainage Program.



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*Above: Salts from solar evaporator at Red Rock Ranch.*

*Left to Right: San Joaquin District Chief Paula Landis and Jose Faria discuss salts found at evaporation pond in Michael Andrews Rainbow Ranch.*

“Our mission is a tough balancing act; to prevent the West side of the San Joaquin Valley, one of the most fertile regions in the world, from becoming like the current Mesopotamia, a huge, bare desert made of salty land, while reducing adverse impacts from agricultural drainage water to our water resources and to our environment,” said Supervising Engineer **Jose Faria**, who has spent the last nine years with DWR managing this program.

## History

The San Joaquin Valley Drainage Program began in 1957 as a result of joint legislative committee hearings. With approval of the Burns-Porter Act of 1960, voter support for resolving drainage related issues was gained and DWR was authorized to carry out activities for removal of drainage from the valley. For several years, DWR worked on valley drainage investigations to define the magnitude and size of the problem and focused on out-of-valley solutions including design of a master drain to serve the region from Bakersfield to Antioch.

In 1983, after the discovery of migratory bird deaths and deformities at Kesterson Wildlife Refuge in Western Merced County linked to selenium and drainage issues, DWR increased its drainage program to support interagency and local efforts in resolving drainage issues. In 1984, State and federal agencies joined to form the Interagency San Joaquin Valley Drainage Program. By 1990, the agency produced “A Management Plan for Subsurface Drainage and Related Problems on the Westside San Joaquin Valley” (commonly known as the Rainbow Report). The report dismissed the feasibility of a range of potential out-of-valley drainage solutions, and recommended a variety of other water and salinity management options. In 2001, the report was updated, and DWR continues to work toward achieving established drainage management goals through the program.

The San Joaquin Valley Agricultural Drainage Program consists of several parts, including drainage monitoring and evaluation, treatment of drainage water and its salts, Integrated On-Farm Drainage Management, real-time water quality monitoring, drainage reduction, and environmental services activities. The program collects, evaluates, and reports information and conducts studies and demonstration projects on the valley’s drainage problems. Through the data and information gathered on various agricultural drainage issues, staff members continue to better define the drainage problems which require implementation of management plans.

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*Jose Faria, who has managed the San Joaquin Valley Agricultural Drainage Program for the last nine years, points to Jose Tall Wheatgrass found at Red Rock Ranch. Tall Wheatgrass is salt-tolerant.*

*“Our mission is a tough balancing act; to prevent the West side of the San Joaquin Valley, one of the most fertile regions in the world, from becoming like the current Mesopotamia, a huge, bare desert made of salty land, while reducing adverse impacts from agricultural drainage water to our water resources and to our environment.”*

**Jose Faria**

Supervising Engineer





## Drainage Monitoring and Evaluation

The San Joaquin Valley Drainage Monitoring Program, in cooperation with federal and local agencies, encompasses approximately 1.5 million acres of land along the west side valley.

“We measure, sample, and analyze 25 subsurface and two surface drainage sumps over the areas and collect the shallow groundwater levels on over 1200 observation wells,” added Jose. “This usually takes about three months per year to do with four people involved, with one person working full time to review the data and prepare the reports.”

To show the results of the monitoring program, the data is assembled in the annual San Joaquin Valley Drainage Monitoring Report that provides information on shallow groundwater conditions including analyses from various constituents including sodium, calcium, and selenium. Every five years, researchers prepare an electrical conductivity map showing the salinity and depth to groundwater in the areas affected by shallow groundwater.

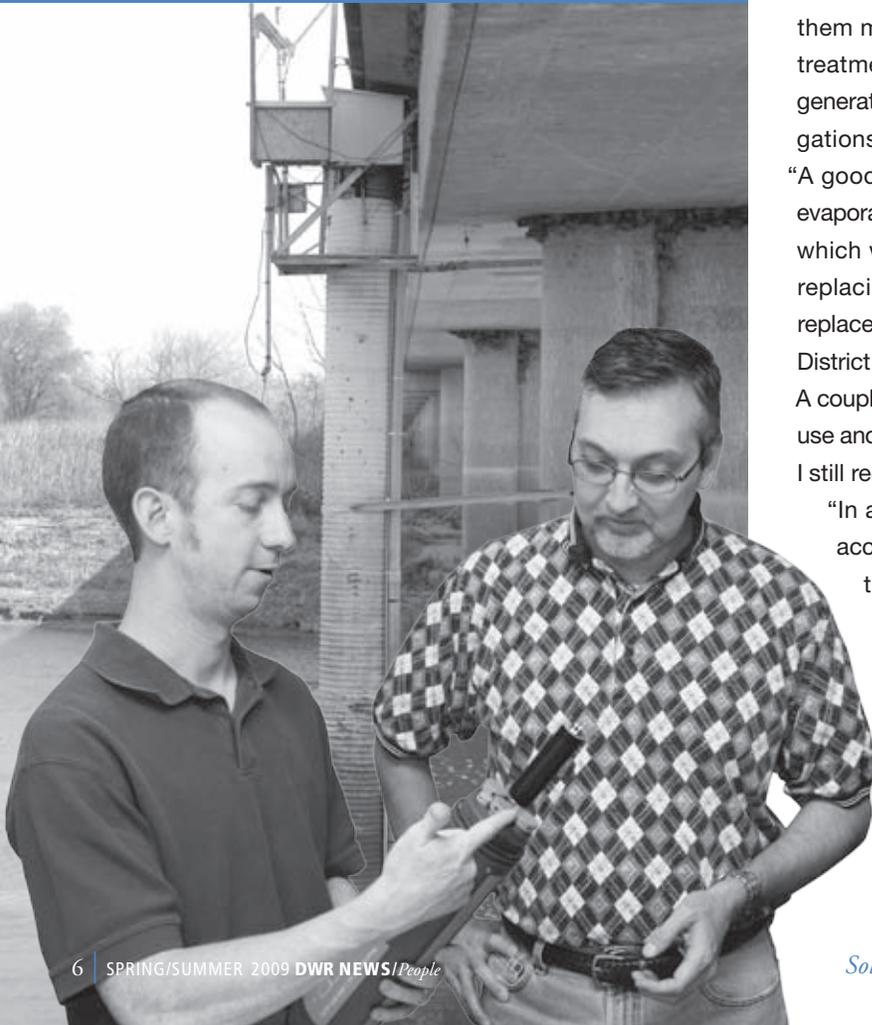
In identifying and monitoring areas of shallow, poor quality groundwater, San Joaquin District staff collects water elevation and quality data from a network of observation wells. Two parameters commonly collected in this work are depth to groundwater and electrical conductivity. Shallow water is known as an area where the water table is within 20 feet of the ground surface at any time during the year.

“We like to provide technical assistance to growers to help them manage their drainage problems, evaluate new water treatment technologies while providing education to a new generation of engineers, and see that the results of our investigations are implemented in the valley,” commented Jose. “A good example is the solar evaporator, a device used to evaporate concentrated drainage water and leave salts behind, which we developed a few years ago with the purpose of replacing evaporation ponds. Today, solar evaporators have replaced two evaporation ponds in the valley. Westlands Water District plans to use them for their drainage service solution. A couple of important environmental organizations endorse its use and a bill was passed by legislation to authorize their use. I still receive inquiries from around the world about them.”

“In addition, we manage the Proposition 204 drainage account which has funded over 30 research projects in the San Joaquin Valley.”

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*Top to Bottom: Senior Engineer Kurt Kovac, who retired in 2009 from the Drainage Water Management Section, worked on the Los Banos Demonstration Desalting Facility. Senior Engineer Iris Yamagata and staff from the Surface and Ground Water Data Section collect and store water resources data within San Joaquin District in various formats, such as maps. Senior Engineer Ernie Taylor and Engineer Geoff Anderson examine multi-sensor water quality probe. These probes are installed at nine monitoring stations located along 210 miles of the San Joaquin River, including this station in Patterson.*





*“Calcium Sulfate or Gypsum is commonly used in agriculture to help water to penetrate soils into crop roots. Over 800,000 tons of gypsum is consumed by agriculture in the valley every year.”*

### **Drainage Water Treatment and Salt Recovery**

This part of the program focuses on researching treatment (desalination) methods of agricultural drainage water and removal of toxic trace elements and separation and re-use of salts from agricultural drainage water.

“Through our contract with the University of California at Davis Agricultural Engineering Department, it was shown that sodium sulfate salts extracted from agricultural drainage water can be used as an agent for dyeing textiles and for glass manufacturing,” said Jose. “In addition, in our own experiments we found that calcium sulfate will precipitate under certain conditions when drainage salts concentration reaches 40,000 milligrams per liter.”

Calcium Sulfate or Gypsum is commonly used in agriculture to help water to penetrate soils into crop roots. Over 800,000 tons of gypsum is consumed by agriculture in the valley every year.

“Recycling of gypsum from agricultural drainage will reduce gypsum imports,” added Jose. “In addition, during the winter, when concentrations reach 50,000 ppm, or above, sodium sulfate will precipitate at temperatures below 45 Fahrenheit.” Other salts such as calcium chloride, sodium chloride, and boron compounds could be mined as well.

In the 1980’s in Los Banos, DWR demonstrated that salts can be utilized to capture energy from the sun using Salinity Gradient Solar Ponds. The low-grade heat can be extracted



for a number of industrial processes including electricity, refrigeration, and commodity drying. Drainage salts can be utilized for this purpose.

Since the late 1980’s, DWR, working with consultants and universities and in partnership with the U.S. Bureau of Reclamation and local drainage districts, has evaluated a number of processes for removal of selenium.

“Since the 1970’s, the Agricultural Drainage Program has been investigating numerous methods for desalination of agricultural drainage water. We have worked with the University of California, Los Angeles (UCLA) and many consultants to find a feasible method of recovering this water,” commented Jose. “So far, this goal has been elusive because of high costs and the high scaling propensity; but we are getting close as better technologies come in.”

Most recently, DWR worked with Reclamation and its consultant General Electric, in two sites, one at Westlands Water District, and the other at Panoche Drainage District. The pilot selenium



**Top:** Drainage Management Engineer Alex Begaliev collects and analyzes data about brine shrimp.

**Middle:** Parabolic solar concentrator used to warm water for a brine shrimp pond.

**Right:** A worker collects shrimp from a brine pond made up with subsurface agricultural drainage water. Salinity concentrations in the pond are twice as high as seawater.



*Ken Johnson shows cactus being studied as salt-tolerant by Fresno University.*

treatment system used a two-step process utilizing water tanks filled with activated carbon, coated with a biofilm in which proprietary bacteria is cultivated. The bacterium in less than eight hours removes nitrates and then reduces selenate to elemental selenium that precipitates at the bottom of the tank. According to Jose, this has been the most successful selenium removal technology that DWR has tested.

"I enjoy working in partnership on drainage issues with universities, Reclamation, Westside Resource Conservation Districts, water and drainage districts, local farmers, and other local, State, and federal entities. We couldn't do our job without them," said Jose.

### **Integrated Drainage Management**

Integrated On-Farm Drainage Management (IFDM), which is a state-of-the-art drainage management system, has transformed marginal farmland into exceptional farmland. A regional form of IFDM used by the Grasslands Area Farmers has cut by more than 50 percent their drainage discharges into the San Joaquin River and further reductions are in the planning. IFDM provides for drainage water reuse to improve crop production and to minimize salt and selenium risks to water quality and the environment.

A typical IFDM application would be growing salt sensitive, high-value crops such as iceberg lettuce or cantaloupes in a field, then using the subsurface drainage water from the this

field to irrigate a buffer zone of salt-tolerant crops, such as alfalfa and tall wheat grass. After each successive ring of vegetation takes up its share of water, it leaves behind a much more concentrated saline effluent which is reused to grow even more salt tolerant plants (halophytes), such as salt grass. As the final step, the remaining water not taken by the plants is delivered to a solar evaporator, which evaporates the water remaining in the concentrated brine, leaving a dry salt residue.

"IFDM, which is one readily available tool to help solve drainage problems, can preserve farmland while protecting the environment," observed Jose. "Farmers who are opting for it out of necessity are realizing its virtues. IFDM has saved farms."

Findings indicate that IFDM systems have less significant environmental impacts than other options (such as evaporation ponds or river discharge) and reduce the volume of drainage water.

"We have completed a series of workshops throughout the San Joaquin Valley and worked with California State University, Fresno, the Westside Resource Conservation District, and the U.S. Department of Agriculture to prepare two how-to manuals for the development of IFDM systems, one for landowners, and the other for professionals," said Jose. "In addition, we are investigating a number of salt tolerant crops that can be used to recover costs of implementing the IFDM system. The crop categories include uses for forages, biofuels, and biomass."

### **Real-Time Water Quality Monitoring Program**

The Real-time Water Quality Monitoring Program provides information on existing water quality conditions and forecasts flow and water quality conditions for San Joaquin River water managers and stakeholders.

"The information provided is a useful tool for improving the management and coordination of reservoir releases and manage agricultural and wetland drainage flows to achieve salinity objectives at San Joaquin River compliance points," said Jose. "And, it will be an essential tool, when the Central Valley Regional Water Quality Control Board (CVRWQCB) will begin to enforce salinity and boron water quality standards at newer compliance points along the San Joaquin River. We are working with Reclamation, the CVRWQCB, and local stakeholders to develop this important tool."

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*Crops grown in the San Joaquin Valley are distributed throughout the world.*

## Covering Additional Drainage Concerns

The Drainage Reduction Program is managed by the Office of Water Use Efficiency (OWUE), and offers technical assistance, information, and other resources to growers and irrigators for applying irrigation water efficiently to reduce both excessive deep percolation and drainage water from the immediate on-farm source, while maintaining salt balance in the root zone. The San Joaquin Valley Agricultural Drainage Program funds a portion of these activities. **Baryohay Davidoff** of OWUE manages them.

The Environmental Section in the San Joaquin District also works with drainage-related issues. It reviews and prepares California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documents for the program and responds to information requests from landowners seeking a better understanding of the CEQA and NEPA public review process so they can more meaningfully comment on State and federal drainage projects. The Section is also working with private ducks club, the California Department of Fish and Game, and the University of California, Merced on a wetlands study to determine methods to manage or reduce salt load discharges into the San Joaquin River.

## Future Projects

“In the near future, reclamation of subsurface drainage water and brackish groundwater could provide a new source of water for the valley,” said Jose. “This year we will be testing an innovative high-efficiency vapor compression desalting unit and a state of the art reverse osmosis desalination system developed by UCLA.”

DWR is working in collaboration with Westlands Water District, which purchased a vapor compression desalting unit, Westside Resource Conservation District, local farmer John Diener, and a company called Forever Water. In addition, renewable energy to power a part of the project will be used. A 140-foot tall and 10 kilowatt wind turbine unit, which was installed last February, is being evaluated on its performance in the valley.

“A feasibility evaluation at Red Rock Ranch of a vapor compression desalting unit seems very promising,” Jose added. “The unit is being constructed in Fresno and uses innovative technologies to maximize the use of energy. It requires minimum drainage water pretreatment, therefore saving costs.”

DWR is also working with UCLA to bring an innovative pilot reverse osmosis unit to various locations on the west side of the valley. This unit, capable of operating by remote control, can determine the most efficient means or protocols for desalting



*“A 140-foot tall and 10 kilowatt wind turbine unit, which was installed last February, is being evaluated on its performance in the valley.”*

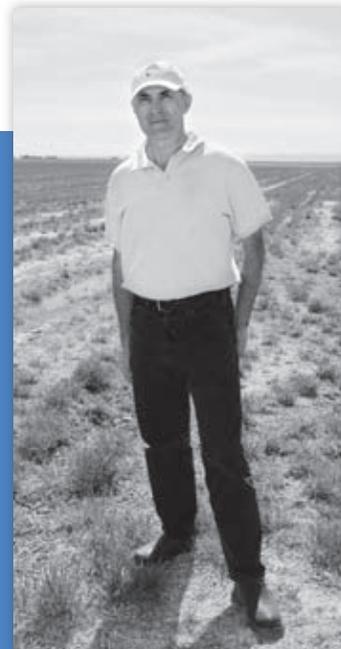
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*This wind turbine unit for renewable energy to power projects is located at Red Rock Ranch. Jose Faria (left) standing with Ken Johnson in front of unit being monitored by DWR.*

agricultural drainage water, given the unique composition of the particular drainage water. It also can detect early scale formation in the membrane and will clean it automatically. The purpose is to provide state-of-the-art information to the local water or drainage district to help it decide whether desalination of agricultural drainage or brackish groundwater is feasible.

“The San Joaquin Valley Agricultural Drainage Program has been vital to the State of California by providing in-valley solutions to manage and ameliorate the many aspects of dealing with subsurface agricultural drainage water problems in the San Joaquin Valley by conducting activities that reduce salinity and levels of boron, nutrients and harmful trace elements in the lower San Joaquin River, by augmenting water supply by promoting viable desalination technologies for reclamation of brackish groundwater and subsurface drainage water, and by promoting re-use of agricultural drainage water on salt tolerant crops that are profitable to growers,” commented Jose.

Special thanks to all of the following DWR employees who have assisted in the success of the San Joaquin Valley Agricultural Drainage Program: Senior Engineer **Kurt Kovac**, Engineer **David Lara**, Water Resources Technician **Tony Lam**, Engineer **Ken Johnson**, Engineer **Alex Begaliev**, Senior Engineer **Jim Cooper**, Senior Engineer **Ernest Taylor**, Engineer **Geoff Anderson**, Staff Environmental Scientist **Charyce Hatler**, Senior Engineer **Iris Yamagata**, Water Resources Technician II **Chris Guevara**, Water Resources Technician II **Brian Paulson**, Water Resources Technician II **Charles Peery**, Water Resources Technician II **Dana White**, Water Resources Technician I **Peter Manukyan**, Senior Land and Water Use Scientist **Dave Scruggs**, Senior Environmental Scientist **Karen Dulik**, Environmental Scientist **Laura Castro**, Environmental Scientist **Christa Verdegaal**, Retired Annuitant Engineer **John Gostanian**, and Senior Land and Water Use Scientist **Baryohay Davidoff**.



## Managing the San Joaquin Valley Drainage Program

For the last nine years, Jose Faria, who has worked 24 years for DWR, has managed the San Joaquin Valley Drainage Program, one of the few programs managed at a regional level.

“I use my expertise in agricultural drainage to help or represent DWR in public policy meetings related to salinity issues in the Delta, the San Joaquin River, and the San Joaquin Valley,” said Jose, who has studied the west side of the San Joaquin Valley for the past 23 years.

Jose has represented DWR during drainage solution settlement negotiations, public hearings related to permits and conditions and Implementation of Southern Delta Salinity Objectives, and board planning for long-term management of salinity in the Central Valley.

“In March of 2009, I was interviewed by a National Geographic writer on technologies for salinity management,” added Jose.

Previously, Jose was a Section chief in the Aqueduct Protection and Flood Management Section, where he began his DWR career as a Junior Civil Engineer in 1985. The section worked in monitoring and performing various studies on streams along the west side of the San Joaquin Valley, where runoff poses serious problems to the integrity of the California Aqueduct.

The section also prepared floodplain models for portions of the San Joaquin River for the Federal Emergency Management Agency and processed claims for reimbursement of right-of-way for two local flood control projects.

Jose’s love for the outdoors does not end at work. He enjoys playing competitive racquetball and farming wine grapes at his farm in Dinuba as a hobby.

“With the grapes, I make a red wine, which my friends say is quite good,” said Jose. “The vines came from cuttings of a unique, local mother-vine that my grandfather planted long ago on the island of Madeira, Portugal. He used to make and sell his wine to the local bars and restaurants in Madeira.”

Jose, who was born in Portugal and raised in Venezuela, studied Chemical Engineering in Venezuela. In 1981, Jose moved to Kansas, where he studied English for six months. He earned his Bachelor of Science in Civil Engineering from California State University, Fresno in 1983. ■



## A Better Understanding about California's Drought

By Amy Norris

California's tendency to drought has been recorded in tree rings, history books and recent DWR records. The long view of the drought we're in now runs the gamut from unremarkable to extraordinary. Compared to the 200 years of dry conditions that occurred during the middle-ages on the western part of the continent, this drought might barely qualify as a dry spell. But within the modern record of the past 100 years when California's population and water demand has increased, the current drought may qualify as the tenth driest.

During June 2008, California's second consecutive dry year, Governor Schwarzenegger proclaimed a statewide drought and a drought-related State of Emergency in nine Central Valley

agricultural counties. At the time, Lake Oroville was 42 percent below normal. Farmers were already fallowing land, and concern was growing about the enormous water supply crisis that would result from another dry year.

It was clear the drought response would require a major and dedicated effort on the part of many different divisions within the Department, and someone was needed to organize the team. On June 17, 2008, DWR Director Lester Snow appointed

*Above:* (Left to Right) Association of California Water Agencies Executive Director Timothy Quinn, DWR Director Lester Snow, and Secretary for Natural Resources Mike Chrisman announced the new statewide "Save Our Water" public education program at a news conference at the State Capitol on April 21.

*Right:* Wendy Martin of DWR, Jennifer Persike of ACWA, and Lisa Lien-Mager of ACWA display a "Save Our Water" logo.





jected that economic impacts of drought could reach nearly \$650 million with up to 23,700 jobs lost. The initial 2009 State Water Project (SWP) allocation was set at 15 percent. At the same time, the federal Central Valley Project (CVP) warned that it might not be able to deliver any project water to its agricultural contractors if conditions stayed dry. (and only 10 percent if normal conditions prevailed after that date).

In early March, rainfall averages crept above 90 percent and snowpack measured 90 percent of normal. Though she is always happy for precipitation, it made Wendy's job more difficult. This short period of above average rainfall gave many Californians a false sense that the drought was ending; however, it was not nearly enough to make up for the previous two dry years.

Regulatory restrictions to protect Delta smelt, newly reclassified from threatened to endangered in March 2009, and the fragile Delta ecosystem would continue to exacerbate water delivery problems. In addition, reservoirs though rising, were still well below normal.

Wendy found past drought updates a great resource for proceeding with drought response and public outreach. Many of the steps taken in 1977, 1988 and 1992 are the same being taken today. Water transfers, conservation measures by local and regional water agencies, state agencies, and the public, and a push for alternate sources are all actions that are underway now.

A passage from "Continuing California Drought-August 1977" sounds very familiar to current drought response:

*Even if 1978 were to bring with it a return to average rain and snow, the water supply deficit leading into 1978 would not be erased. Furthermore, we cannot assume that 1978 will be wet, and that 1977 is the last dry year of this series....*

*Lake Oroville in December 2008.*



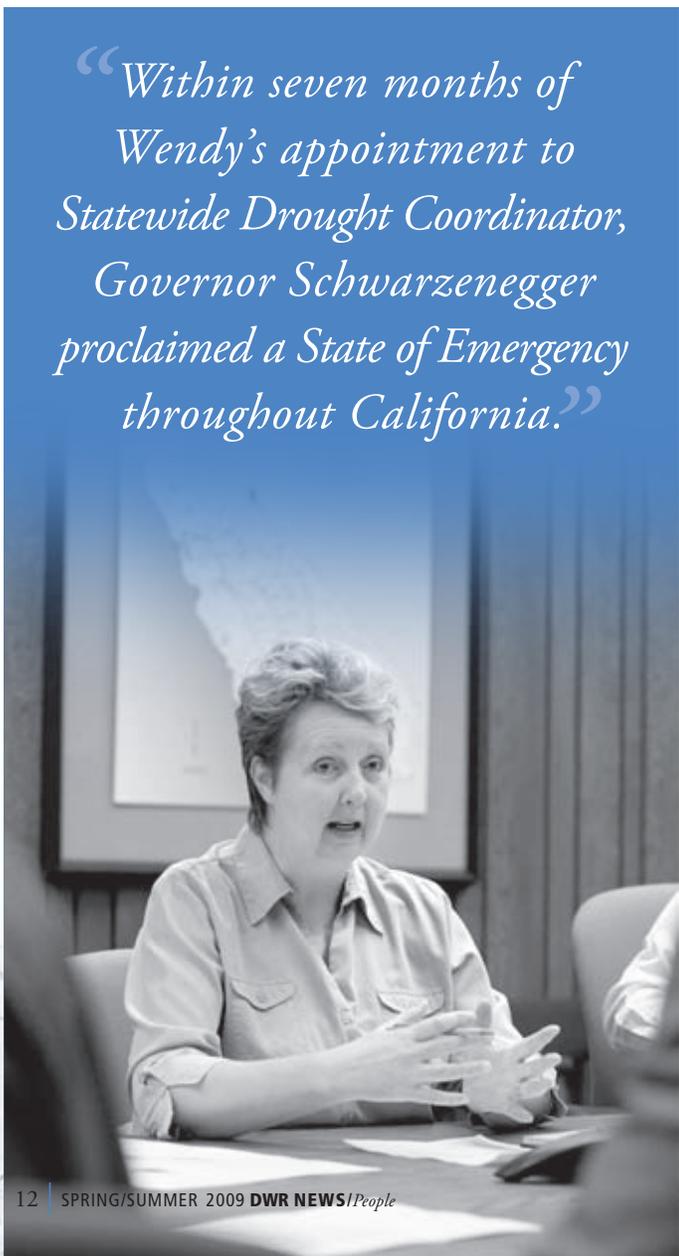
*A Better Understanding about California's Drought*

**Wendy Martin**, a veteran Environmental Specialist, as DWR's Statewide Drought Coordinator. Originally employed with DWR in June 1981, Martin spent 15 years with flood management before becoming CalFED's Chief Deputy Director. In 2008, Martin returned to DWR to work on Delta issues and just a few months later she found herself heading up the drought effort.

Though the emergency response to drought was "brand new" to Wendy, her experience prepared her for her new role. "I lived through several droughts in California, and having an extensive water background, a lot of the issues are transferable. We've been struggling with moving water for decades," said Wendy. "Working on the drought has been a little different twist on a career's worth of water experience. It's been very interesting to learn about that aspect of California's water."

Within seven months of Wendy's appointment, Governor Schwarzenegger proclaimed a State of Emergency throughout California. The rural area of Mendota was suffering 40 percent unemployment and the University of California, Davis pro-

*"Within seven months of Wendy's appointment to Statewide Drought Coordinator, Governor Schwarzenegger proclaimed a State of Emergency throughout California."*



*The critical impact of a third dry year...demands that a drought strategy be developed to ensure meeting critical needs, alleviating general drought conditions as much as possible, and identifying actions to make the best use of very limited resources.*

Ultimately, 1978 ended with runoff classified above normal in the Sacramento River system and wet in the San Joaquin system. Oroville made substantial flood control releases in March of 1978 and essentially filled in early June 1978 at 3.5 million acre-feet. By October 1978, carryover storage in Oroville was 77 percent of capacity which was above average for that time of year. That drought was officially over.

If those same conditions were to occur this year, Wendy would not be comfortable making the same claim, not when economic impacts persist and uncertainty remains for the next water year to come.

Looking to the future Wendy says, "We cannot assume that this is the third year of a three year drought. It could be the third year of a drought that will last much longer. Australia is an example. When we ask them, what they would have done to prepare for their multi-year drought. They say: 'We would have planned for next year being dry, not future years being wet.'... we have to act as if water is going to be scarce indefinitely. We know we'll have to deal with dry conditions in future. Our ability to weather dry periods will depend on better conveyance, storage and conservation."

### **A Broader Perspective**

Wendy describes **Jeanine Jones** as a walking encyclopedia. The Department's Interstate Resources Manager, Jones has been with DWR through the last several droughts. She understands the current drought from a wide perspective, and notes that several things have changed since previous droughts.

"Increased Delta export restrictions make it more difficult to use the drought water bank to mitigate impacts," said Jeanine. "And there is growing recognition of the special needs of small water systems during droughts."

DWR had not historically been involved with small water systems problems, but that changed in response to the 2000 recommendations of the Governor's Advisory Drought Planning Panel. Then, the Department initiated a small system technical assistance outreach effort, to help systems improve their drought preparedness.



*“Increased Delta export restrictions make it more difficult to use the drought water bank to mitigate impacts.”*

**Jeanine Jones**

*Interstate Resources Manager*

Working through the California Rural Water Association (CRWA), the Department funded preparation of a small water system database as well as a small system emergency response/water shortage contingency planning guidebook and website. More than 50 workshops on this subject were then held for small systems, and emergency response plans were completed for more than 50 small systems. In response to dry conditions in 2007, the Department again began working with CRWA to establish a leak detection technical assistance program for small systems, last year awarding CRWA almost \$1 million in grants for helping small systems.

The water reliability problems experienced by small systems in Southern California foothill and mountain areas during the regional Southern California drought of the early 2000s are a typical outcome of drought. Small water systems have historically experienced the bulk of health and safety impacts during droughts, as well as the majority of water shortage emergencies. The majority of small system drought problems stem from dependence on an unreliable water source, commonly groundwater in fractured rock systems or in small coastal terrace groundwater basins. Most small systems are located outside the state's major metropolitan areas, often in lightly populated rural areas where opportunities for interconnections with another system or water transfers are nonexistent. Small water systems typically lack the staffing and financial resources to deal with a major reduction in their supplies, sometimes leading to water haulage for especially hard-hit rural communities.

The small water system user could fully understand Jeanine's definition of what a drought is, and when it starts or ends.

"Drought is a function of impacts. It's like the difference between a recession and a depression," said Jeanine. "If your neighbor loses his job, it's a recession. If you lose your job, it's a depression. Same with water. If your neighbor's supply is threatened, it's a dry year. If your water supply is threatened, it's a drought. We can declare a drought over when impacts are diminished."

## Managing the Drought Water Bank

The Drought Water Bank was established in September 2008 to facilitate water transfers between willing sellers and willing buyers. A water transfer can occur when a water right holder is able to free up water supplies, for example by not growing a crop or growing a crop that uses less water, allowing someone else to use the freed up water supply. The Water Bank helps with water transfers that go through the Delta by providing environmental coverage and use of SWP facilities. **Teresa Geimer** was called upon to lead this effort.

Though the Department hadn't established a water bank since 1994, DWR has been involved in transfers every year since 2001. This has helped with Geimer's responsibilities.

"We're building off of our knowledge of the past eight years. We were fortunate to have the Environmental Water Account EIR/EIS that we were able to amend for the Water Bank," said Geimer.

It is hard to estimate how much water will be offered for transfer through the Water Bank. One of the greatest difficulties is seller uncertainty. Many do not know how much water they will have because they can't count on receiving usual allotments.

One of the advantages of the Water Bank to sellers is a farmer who chooses to do a water transfer instead of growing a crop has an assured income. There is less certainty when growing a crop due to fluctuations in the market and weather. Geimer explained, "The farmer can know for sure the price



*"We're building off of our knowledge of the past eight years. We were fortunate to have the Environmental Water Account EIR/EIS that we were able to amend for the Water Bank."*

**Teresa Geimer**

*Drought Water Bank Coordinator*

received is a guarantee and avoid unexpected losses such as not getting a crop to market. To protect against too great an impact on food production, we won't do cropland idling of more than 20 percent in any county."

Buyers are not only municipal users, but also agricultural interests. Farmers with permanent crops such as orchards and vineyards are motivated to keep them alive because it takes several years before new trees and vines produce.

### Providing a Meteorological Outlook

Surprises are the most challenging part of **Elissa Lynn's** job during drought conditions, but surprises are a natural hazard for any meteorologist.

"Late spring storms can move in unexpectedly. I'm scientific about it. Things can always change," said Elissa.

Droughts are a natural occurrence in California over thousands of years. But modern times have complicated the picture. During the last 100 years, when there has been disparity between where and when rain falls, and where and when it is needed, this drought could rank as the tenth worst according to Elissa. The causes of each of the current dry years have varied said Elissa.

"The first and second dry years had different reasons and setups for being dry. Water year 2006-07 was generally low precipitation throughout. It was steady, just not a lot," said Elissa. "Last year was so different because it was a huge season in January and February and then it stopped. That was La Niña driven. And this year, it was the lack of January, the big high pressure ridge over west coast and Pacific, nothing happened."

Like Wendy, Elissa's frustration lies with helping the public understand that some rainfall does not qualify as an automatic drought buster and that a few rainy days does not guarantee a wet year.

"The hard part for us communicating that to people is that the water supply has been fairly reliable in spite of challenges. People have short memories, and after a couple storms, they forget," said Elissa.



*"Last year was so different because it was a huge season in January and February and then it stopped. That was La Niña driven. And this year, it was the lack of January, the big high pressure ridge over west coast and Pacific, nothing happened."*

**Elissa Lynn**  
Meteorologist



*“The farmer can always move out of the way of the flood, but it’s a livelihood going down the drain with a drought.”*

**Maury Roos**  
Chief Hydrologist

To help the public and the media better understand drought issues and impacts, Elissa helped redesign DWR’s drought Web site at <http://www.water.ca.gov/drought/>

It has been enormously popular for those who like to keep up on the percentages on a daily basis. But daily figures don’t tell the whole story.

“It’s more about potential climate change, with the possibility and likelihood that droughts will be more common and longer lasting. We may not know for 10 more years whether we’re having droughts that are lasting longer,” said Elissa. “This is a sign of what could come more often, including having drought and floods at the same time. It’s conflicting for a non-meteorologist to understand. We may be facing more of this in the future.”

### **Giving a Historical Perspective**

**Maury Roos** has served with the Department through every drought since DWR was established in 1956. That’s the 1959–61 drought, the 1976–77 drought, 1987–92, and the current drought. He recalls the statistics and circumstances of each event and is the best human resource at DWR for a realistic perspective on this drought.

According to Maury, there’s a lot of variety in the way each drought unfolds. “The longest drought we’ve seen in the twentieth century was six years from 1929–34. Sometimes it’s called the seven-year drought because it was a dry spring in 1928 with subnormal snowmelt. Before we had 1976 and 1977, the most severe single year was 1924, when Sacramento River runoff (the four river runoff) dropped to 5.7 Million Acre-Feet (MAF), but single dry years with our reservoir system usually don’t cause too much trouble.” However, when runoff dropped to 5.1 MAF in 1977, the impact was severe because 1976 was also dry.

Maury notes there was more of an element of surprise in 1976 and 1977 when drought conditions became apparent. “Before we had that drought, we were rating project yields on how well they could deliver in the drought of 1929–34. Before the 1977 drought, some folks were saying that the historic critical period yield criteria was too severe,” said Maury. “But then we got the driest year ever in 1977. In one sense, it wasn’t as bad as the early 1930s because it was shorter and you can sometimes weather a shorter drought but a longer one does you in.”

Maury notes some systems, like Lake Berryessa on Putah Creek are built for multi-year drought. That’s true of some southern California reservoirs as well, so they don’t get in bad shape for four or five years, but it depends on how severe the annual runoff deficits are.

Maury’s usual definition of drought has been based on the numbers. He considers a drought as the lowest 10 percent of single water year runoff, or multiple year runoff and reservoir storage 30 percent or more below average. For years 2007 and 2005, the two-year rank for runoff on the Sacramento and San Joaquin group of rivers (the eight river index) drops to eighth percentile. With the third dry year, the runoff threshold moves up. (The February 1 median water year forecast issued by DWR Snow Surveys gave a three year sum rank of fourth; by April 1, the forecast had increased moving up to the tenth rank.)

But defining when a drought is over is somewhat more complicated. “Once it starts recovering, the criteria is higher because we don’t want to bob in and out of drought with every storm,” said Maury. “There’s also a distinction we need to make and we’re not doing it as well as we could. What is a hydrologic drought and what is a water shortage due to inadequate water systems. After the last drought the operating rules were changed

to accommodate more stringent environmental rules. Other demands haven't gone up so much, but the big change has been environmental demands. That's a permanent water supply shortage problem. That won't go away when the hydrologic drought ends."

There is also danger in thinking the drought may stop after three years. According to Roos, during the 1987-92 drought, 1989 was a better year and it seemed the drought was over, but then there were three more years of flows around 50 percent. As of mid March this year, there was not enough precipitation to end the current drought, and there are some similarities between this drought and the 1987-92 drought, so dry conditions could persist.

Also similar to previous droughts, Californians are relying on groundwater as a supplemental supply. Maury warns if droughts happen too often, groundwater will be depleted during future water shortages.

Though water use is reduced when farmers don't plant, agricultural demand is often higher in drought years because the dry winter conditions then require more irrigation to provide adequate soil moisture for spring planting. This also increases demand for groundwater.

"That was something that came out strongly in 1977," said Maury. "There's not too much we can do other than pre season irrigation with leftover water in the fall." The problem with this pre-irrigation approach is it's costly and if it rains, then the water's been wasted. Maury believes better long range weather forecasts would help but so far that's not proven reliable.

Maury admits that for him, managing and studying drought is much less stressful than dealing with floods, because drought is slow moving.

But Maury acknowledges, "The farmer can always move out of the way of the flood, but it's a livelihood going down the drain with a drought."

## DWR Water Awareness Month Events in 2009

During May 2009, the Department of Water Resources (DWR) participated in a series of traditional events in observing Water Awareness Month. Developed in response to California's 1987-1992 drought, Water Awareness Month draws public attention to the vital role water plays in California. Events occurred as follows:

**Sacramento**—Water resource awareness and family fun were themes of the annual "Get Wet" festival held on Saturday, May 16, from 10 a.m. to 4 p.m. at the American River Water Education Center near Folsom Dam. DWR water education staff worked at a DWR booth at the festival. They provided information on water use, conservation and water safety. The event was sponsored by the U.S. Bureau of Reclamation, which operates Folsom Dam. The center is located at 7785 Folsom Auburn Road. For information, call (916) 989-7132.

**Central California**—A traditional Kids Fishing and Fun Day was scheduled on Saturday, May 16, at O'Neill Forebay near San Luis Reservoir, west of Los Banos, from 8 a.m. to noon. This event was designed for young anglers, 15 and under.

**Oroville Celebration**—On Saturday, May 9, DWR employees took part in Oroville's annual Feather Fiesta Days celebration, a nine-day event scheduled this year from May 2 through May 9. A fishing simulator was the key attraction. Events were scheduled from 9 a.m. to 4 p.m. at Parking Lot A, at Montgomery, Meyers and Huntoon Streets in downtown

Oroville. For information on DWR activities, contact John Ford at the Lake Oroville Visitors Center at (530) 534-2306. For information on the entire Feather Fiesta Days celebration, contact the Oroville Area Chamber of Commerce at (530) 538-2542 or access the Chamber's Web site at [www.oroillechamber.net](http://www.oroillechamber.net)

**Southern California**—Employees from DWR's Southern Field Division took part in two special events during May. On May 2, staffers took part in a Fishing and Fun for Kids day at Castaic Lake, from 9 am to 5 pm. On May 9, the Southern Field Division hosted a DWR booth at Castaic Lake Water Agency's annual Open House event, from 9 am to 2 pm.

**DWR Visitor Centers**—May marks the traditional start of vacation and travel season when visitation increases at DWR's three Visitors Centers. Open for public enjoyment free of charge, these visitor centers are: Vista del Lago at Pyramid Lake, near Gorman in northern Los Angeles County, just off Interstate 5; Romero Overlook Visitors Center at San Luis Reservoir just off State Highway 152 in Merced County, west of Los Banos; and Lake Oroville Visitors Center, 917 Kelly Ridge Road, overlooking Lake Oroville in scenic Butte County. Phone numbers for the visitor centers are: Vista del Lago (661) 294-0219; San Luis (209) 827-5353, and Lake Oroville (530) 538-2219. ■

# California's Drought Timeline

2007

## MARCH

- The winter's fourth snow survey shows water content in the snow pack at well below average.

## MAY

- Low snow pack shows a critical need for water conservation.

## JULY

- DWR announces 11 drought workshops for urban water suppliers.

## SEPTEMBER

- Statewide drought workshops for urban water suppliers (also October).
- Governor Schwarzenegger calls a special session for the State Legislature to approve a comprehensive water plan.

## OCTOBER

- DWR and the Water Education Foundation co-sponsored a Climate Change and Water Adaptation Summit.

## NOVEMBER

- DWR hosts a series of water conditions workshops to provide an overview of statewide water conditions and to discuss the water outlook for 2008.
- Small Water Systems Conference to help plan for droughts and emergencies.

2008

## JANUARY

- DWR Director Snow testifies before U.S. House of Representatives Committee on Resources, Subcommittee on Power and Water about the uncertainties facing California water supply reliability.

## FEBRUARY

- DWR limits water exports to Southern California from the Delta, despite Sierra snow pack conditions at 118 percent of normal due to a federal court order.

## MARCH

- Binational Core Group created to address joint cooperative actions for the use of Colorado River waters in Mexico and the United States. The group will explore water conservation, shortage management, augmentation and environmental initiatives.

## MAY

- May snow survey shows 67 percent normal rate of statewide water content.

## JUNE

- Governor Schwarzenegger declares statewide drought and proclaims state of emergency in nine Central Valley counties. DWR Drought team formed.
- Spring 2008 was driest on record for the State.



The Save Our Water Web site, created by DWR and the Associate of California Water Agencies in April 2009, offers drought education, a water savings calculator, rebate finder, kids page and easy tips for saving water in and outside the home. To learn more about saving our water, visit <http://www.saveourh2o.org/>

### Water Conservation Tips

1. Take shorter showers
2. Turn off the faucet when brushing teeth
3. Use washing machine for full loads only
4. Use dishwasher for full loads only
5. Fix leaky faucets and toilets
6. Use a shut-off nozzle on your hose
7. Adjust sprinklers so they don't water driveways and sidewalks
8. Water your lawn early in the morning and only when it needs it
9. Use a broom to clean driveways and sidewalks
10. Plant drought-resistant trees and plants

**JULY**

- Lake Oroville Dam's water levels are at 37 percent of capacity, which is 49 percent of normal for this time of year.

**AUGUST**

- DWR awards \$17 million dollars in Proposition 50 grants to fund water saving programs.

**SEPTEMBER**

- Drought water bank established. Oroville had lowest carryover storage since 1977.
- State, federal and local water authorities gathered at a Statewide Drought Summit to discuss the ongoing droughts and possible efforts to alleviate conditions.

**OCTOBER**

- October 2008 – DWR held three drought preparedness workshops, in Santa Rosa, San Diego, and Ontario.

**NOVEMBER**

- Several agencies Web cast a workshop on the Governor's 20 percent reduction of water per capita by 2020 plan.
- DWR holds its climate change adaptation summit in Long Beach.
- DWR holds winter outlook workshop in San Diego, to provide an experimental long-range water supply forecast for the coming year.

**DECEMBER**

- DWR Director Lester Snow gives a presentation on managing Drought in California at the 2008 ACWA Fall Conference held in Long Beach.
- U.S. Fish and Wildlife service imposed 30 percent restriction on SWP deliveries to protect delta smelt.
- Snow water content 76 percent of normal for date.

**JANUARY**

- Ended as eighth driest January on record. Lake Oroville was only 28 percent of capacity.
- Snow water content 61 percent of normal for the date.

**FEBRUARY**

- Governor Schwarzenegger proclaims state of emergency due to drought.
- DWR and U.S. Bureau of Reclamation (USBR) file petition for temporary urgency change to water code in order to reserve water for later in the season to protect cold water fisheries. Petition ultimately denied because higher flows negated salinity violations, and retroactive changes not permissible.
- DWR and USBR submit letter to SWRCB to request temporary relaxation of outflow requirements and notify SWRCB of intent to file petition.

**MARCH**

- Central Valley projected economic impact for 2009 will amount to nearly \$650 million, including 16,000-23,700 jobs lost.
- Snow survey results reveal snow pack at 80 percent of normal and precipitation is about 90 percent of normal.
- State Water Project allocation increased to 20 percent from 15 percent.

**APRIL**

- "Save Our Water" Public Outreach Campaign launched and a major component of latest drought emergency proclamation. The campaign is a partnership between DWR and the Association of California Water Agencies.
- State Water Project allocation increased to 30 percent.

**MAY**

- State Water Project allocation increase to 40 percent.

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*Background photo: San Luis Reservoir in January of 2009.*



## President Obama Signs Bill for **San Joaquin River Restoration**

*By Pete Weisser*

President Obama on March 30, 2009 signed into law legislation to authorize and fund the San Joaquin River restoration program. California's senior U.S. Senator, Dianne Feinstein, in January 2009 introduced the measure approving San Joaquin River restoration, which requires federal implementing legislation to become fully effective.

River restoration is included in a major public lands bill that extends wilderness protection to more than two million acres in nine states. The omnibus bill won approval by the House on March 25 by a vote of 285 to 140. The Senate previously passed the measure on March 19 by a vote of 77 to 20.

"This new law will make it possible to fully implement the court-approved settlement to restore the San Joaquin River to a living river, while also providing water certainty so that the needs of the agricultural, environmental and farming communities can all be sustained with minimum adverse impacts," commented Senator Feinstein.

"This legislation will authorize and help fund a settlement that restores California's second longest river, while maintaining a stable water supply for the farmers who have made the San Joaquin Valley the richest agricultural area in the world," reported Feinstein.

The San Joaquin restoration effort is based on a settlement of a lengthy lawsuit over how the river's water is used, which was approved in federal court in October 2006.

Settling Parties include the Friant Water Users Authority, irrigators who use water from the federal Friant Dam near Fresno, and a coalition of environmental organizations led by the Natural Resources Defense Council (NRDC).

The NRDC filed the original lawsuit in 1988, contending operation of Friant Dam was responsible for eliminating spring and fall runs of Chinook salmon in the San Joaquin River. In 2004, a federal judge ruled that the Bureau of Reclamation's operation

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*From the Friant Dam (above) to the confluence of the Merced River, the San Joaquin River Restoration project will provide irrigation supplies to Friant Water Users and restore a self-sustaining Chinook salmon fishery in the river.*

*“This legislation will authorize and help fund a settlement that restores California’s second longest river, while maintaining a stable water supply for the farmers who have made the San Joaquin Valley the richest agricultural area in the world.”*

**Senator Feinstein**

of the dam violated California Fish and Game code section 5937, which requires dam operators to release enough water to keep fish populations below the dam in good condition. That decision set the stage for the 2006 settlement agreement.

Third party water districts involved in the settlement include the San Joaquin River Exchange Contractors Water Authority, Westlands Water District and other San Joaquin Valley water agencies on the San Joaquin River and its tributaries.

The San Joaquin River Restoration Program (SJRRP) is a comprehensive long-term effort to restore flows to a 153-mile segment of the San Joaquin River, from Friant Dam to the confluence of the Merced River, ensure irrigation supplies to Friant Water users, and restore a self-sustaining Chinook salmon fishery in the river.

Three federal agencies and two State departments are partners in the program: the Bureau of Reclamation, U.S. Fish and Wildlife Service, National Marine Fisheries Service, State Department of Water Resources and State Department of Fish and Game.

The lead management official in this partnership for DWR is Paula Landis, chief of DWR’s San Joaquin District Office in Fresno.

The program focuses on two goals, restoration and water management.

The restoration goal is to restore and maintain fish populations in good condition in the main stem of the San Joaquin River below Friant Dam, a major federal dam in the Central Valley Project, to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.

The water management goal is to reduce or avoid adverse water supply impacts to all of the Friant long-term contractors that may result from interim flows and restoration flows provided for in the Settlement.

According to officials in the Bureau of Reclamation, the lead Federal agency, milestones ahead for the program are issuance of a draft environmental impact statement/report in June 2009 and final environmental impact statement/report by September 2009. Interim restoration flows are scheduled to begin during 2009, with full restoration flows scheduled for 2014. Salmon reintroduction is scheduled by 2012.

River channel improvements are an important element in the program, which is scheduled to complete all improvements by 2025.

Similar legislation was introduced in 2006 and 2007, each time with broad bipartisan support. Funding challenges posed by Congressional procedural rules required revision of those bills.

Senator Feinstein reported that an agreement reached in November 2008 ensures that the restoration program allocates no more federal funds than it brings in. It also protects the water rights of third parties and enhances implementation of the water management goal to reduce or avoid adverse water supply impacts to Friant’s long-term water contractors.

The legislation restricts Federal spending on settlement implementation to \$88 million during the first 10 years. Together with \$200 million from the State of California and other reliable funding, including pre-existing fees paid by water users, federal officials report there is almost \$400 million available for implementing the settlement over the next 10 years. ■



## Report to Congress Recommends **National Levee Safety Program**

By Pete Weisser

A major new report to Congress recommends creation of a national levee safety program, with a nationwide levee database and uniform levee safety standards.

Top priorities among its 20 recommendations: Set up a national levee safety commission to provide leadership; delegate levee safety programs to states; establish and maintain a national levee database; adopt a hazard potential classification system; devise and adopt national levee safety standards, develop tolerable risk guidelines; and provide grants for improving levee safety.

California flood experts, including several with DWR expertise, helped develop the report. It was prepared pursuant to 2007 Federal legislation, the Water Resources Development Act, specifically Title IX, known as the National Levee Safety Act.

The U.S. Army Corps of Engineers (Corps) played a lead role in implementing the Congressional direction to create a diverse study group of flood management professionals to quickly develop a report making recommendations on improving levee safety nationally.

### Levee Safety Experts

“The report represents current professional views from a diverse group of levee safety experts from around the country, with federal, state, local and private perspectives,” said **Rod Mayer**,

Assistant Deputy Director for FloodSAFE California. “The report’s recommendations do not necessarily reflect the positions of their parent organizations.” It could form the basis for future Federal legislation on levees. The first hearing in Congress occurred on May 19, 2009.

The report was created in late 2008 during an intense three month-period of study and discussion. It was completed January 15 and delivered to the Federal Office of Management and Budget (OMB). OMB is undertaking a federal agency review.

Hurricane Katrina in 2005 was the galvanizing event that shattered national complacency toward levee infrastructure.

“It was the catastrophic loss of life associated with Hurricane Katrina that once again refocused the nation and became the catalyst for the National Levee Safety Act and this report,” states the Executive Summary. “The current levee safety reality for the United States is stark—uncertainty in location, performance and condition of levees and a lack of oversight, technical standards and effective communication of risks.”

### California Participation

Rod Mayer served on the committee, along with two other veteran California flood officials. These were former DWR Deputy Directors: **Steve Verigin**, a dam safety authority; and

**Dr. Leslie Harder**, a flood engineering expert and an architect of major recent California levee legislation. **Ray Hart**, another former DWR Deputy Director, served as a member of the report review team. Hart led DWR flood fighting efforts in the late 1990s, and was chief author of the influential 1997 FEAT (Flood Emergency Action Team) Report that recommended major improvements in California flood activities and levee safety.

**Ben Carter**, President of the Central Valley Flood Protection Board (Board), also served as a member of the report review team.

## California Perspective

“California is in the forefront when it comes to levees,” said Mayer, noting that especially in its Central Valley flood system, with 1,600 miles of Federal project levees, California already has achieved some of the progress being recommended in the national report. “There are few locales that can match California’s funding, capabilities and proactive approach.”

“We are the only state that has a statewide levee database compatible with the national levee database recommended in the report,” stated Rod. “We started developing the California Levee Database in 2005. We have spent about \$3 million on it so far, with about half the funding provided by FEMA (the Federal Emergency Management Agency). We have inventoried nearly 14,000 miles of levees so far.”

Much remains to be done, Rod conceded, noting that outside the Central Valley, “local agencies have been in the lead and the State’s role has been relatively small.”

Rod noted the Congressional guidance appeared to omit levees that impound water continually, such as in California’s Delta. “So the recommendation went back to Congress that these should be included in the definition of levees and standards for them should be included,” said Rod.

Two report recommendations are expected to lack appeal in some circles. One is a proposal that flood insurance be required for all those who live behind levees. FEMA currently does not require flood insurance behind levees certified to have 100-year protection. The other is a recommendation that canal embankments be subject to levee-type regulation, which might apply to a few portions of California’s State Water Project (SWP).

According to **Ralph Torres**, SWP Deputy Director, current thinking is that the State Water Project’s California Aqueduct is already at a higher safety standard than would be recommended

nationally, except for evacuation plans for potentially higher hazard areas, like perhaps Palmdale and Lancaster. Ralph has briefed SWP Contractors on the canal regulation issue.

## Recent Year California Advances

DWR learned many flood management and levee safety lessons in the major floods of 1986, 1997 and 1998. The FEAT report in 1997 spelled out many recommendations for safety, a decade before the National Levee Safety Committee was convened. A 2002 interim comprehensive report by the Board and the Corps provided a great deal of expert review and levee data on both the Sacramento and San Joaquin river flood control systems that has proven useful.

Since DWR published a flood policy white paper on the critical condition of California’s flood system in January 2005, there has been an increased focus on flood risk management.

As part of California’s new flood initiatives, DWR has taken a lead role in seeking to improve major levee systems. In November 2006, California voters passed two bond measures, Propositions 1E and 84, which together provide nearly \$4.9 billion for flood risk reduction measures, most of them in the Central Valley.

California has developed an ambitious program, known as FloodSAFE California, a strategic initiative using those bonds funds to improve flood management statewide. Nearly two-thirds of FloodSAFE’s bond funds, \$3.25 billion, are targeted to repair and improve Central Valley levees and flood management systems, including in the Delta. Another \$680 million is intended for federal flood control projects located mostly in the Bay Area and Southern California, with about \$935 million earmarked for statewide investment, funding flood plain mapping, nonstructural projects, stormwater grants and other flood-related improvements.

## National Levee Safety Stimulus

Mayer predicts that the new levee safety report will provide Congress with a solid basis for developing Federal levee legislation in the coming years. He sees it as a useful report to begin a national dialogue on levee safety, update strategic thinking on levee systems across the nation, and influence national actions to improve levee safety in the decades ahead.

## Information

To view a draft version of the Report to Congress on Recommendations for a National Levee Safety Program, visit <http://www.iwr.usace.army.mil/ncls/> ■





# California's Invasive Mussel Foes

## Kept Busy Pace During Cold Months

*By Pete Weisser, Photos by Jeff Janik*

The cold weather months were biologically slow for invasive mussels, but action-packed for their human foes in California.

During December and January, strategic planning, water agency coordination, public outreach and education hit a brisk pace, preparing for the 2009 warm weather recreational season. Their aim: To educate the public and galvanize Western states' resources agencies to combat invasive mussels that can harm lake ecosystems, degrade recreational fisheries and pose an expensive challenge to water agencies.



Providing outreach to water agencies, DWR took part in an invasive mussel informational panel on December 3 at the Association of California Water Agencies (ACWA) Fall conference.

**Russell Stein**, Advisor to the State Water Project Director, engaged in this educational discussion, along with **Susan Ellis**, Invasive Species Coordinator for the Department of Fish and Game (DFG) and the chair of the interstate effort to respond to invasive mussels in California, **Ric De Leon**, Quagga Mussel Control Program manager for the Metropolitan Water District of Southern California (MWD), and **Russ Baggerly**, Director, Casitas Municipal Water District.

2008 marked the second consecutive year DWR organized and participated in invasive mussel educational panels for ACWA. The association represents more than 450 public water agencies that account for 90 percent of the water delivered in California. A similar panel was given at the 2007 ACWA Fall conference.

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*Zebra mussel infestation found at San Justo Reservoir near Hollister.*

## Hydropower Workshop

On December 9, DWR partnered with the Sacramento Municipal Utility District (SMUD) to present the first invasive mussel workshop for hydropower agency representatives, drawing more than 40 attendees to a day-long conference in Sacramento.

Russell Stein of DWR was instrumental in organizing this event, which viewed the mussel challenge from a water agency and hydropower perspective.

Experts including MWD's De Leon and DFG's Ellis reported on the many efforts now underway to combat the spread of invasive mussels in California since their initial discovery in Lake Mead and at water system intakes along the lower Colorado River in January 2007. De Leon reported that MWD uses a combination of chlorine dosages and dryout of water-delivery infrastructure to combat invasive mollusks.

Despite such efforts, quagga mussels are now widespread in Southern California water systems that use Colorado River water, and are present in other Western states, including Arizona, Nevada, Utah and Colorado.

**Jeff Janik**, a DWR staff environmental scientist, reported on mussel surveillance along the State Water Project, while **Tanya Veldhuizen**, also a DWR environmental scientist, described the zebra mussel infestation at San Justo Reservoir near Hollister, the only known colony of this species to date in California.

While quagga mussels are by far the more numerous invasive mollusks in California, DWR scientists are closely studying the zebra mussel population at San Justo, discovered in January 2008. San Justo receives water from the SWP, so research is focused on understanding mussel biology and growth in SWP water. Cold winter months are a time of low activity among zebra mussels, reported DWR's Veldhuizen.

Attendees at the December workshops represented several California hydropower agencies, and the Salt River Project in Arizona.

## Outreach to Recreationists

In January, DFG representatives took their mussel outreach efforts to the International Sportsmen's Exposition in San Mateo and the International Sportsmen's Exposition at Cal Expo. A key element in limiting invasive mussel spread is a strong partnership with boaters to clean and dry their trailered boats, thus preventing movement of invasive mussels from contaminated waterways.

## DWR Strategic Plans

During these winter months, DWR developed strategic plans to mobilize against the threat mussels pose to the SWP. A vector management plan was developed to prevent mussels from entering the SWP by addressing sources of mussels such as

contaminated boats. A rapid response plan was drafted to guide DWR's response efforts at containing and controlling a mussel invasion in the SWP. These plans build on DWR's existing program of monitoring the SWP for mussels and working closely with other agencies on quagga control efforts.

## Colorado Council Meeting

Ellis and other DFG mussel program leaders took part in a special "summit" meeting on January 8 of the Colorado River Fish and Wildlife Council. The Council is composed of the fish and wildlife program leaders in states along the Colorado River—Colorado, Utah, Wyoming, New Mexico, Arizona, Nevada and California. Council members fear the scope of quagga invasion may overwhelm their agencies' fiscal resources.

"Fish and wildlife agencies seem likely to bear the burden for prevention, control and management because of their inherent expertise," noted the Council. "Yet, the societal impacts of widespread infestation promise to have impacts well beyond natural resources and could easily outstrip wildlife agencies' budgets"

The council developed analyses on four major subject areas of the anti-mussel effort: Administration, regulations and funding; biological and monitoring needs; education and outreach; and boating. The council then requested that the Western Association of Fish and Wildlife Agencies (WAFWA), which met in San Francisco in early January, organize to address the mussel challenge, assist in soliciting federal budget support and help highlight the issue among state and federal officials.

"The Council unanimously agreed that there is an urgent need to craft a coordinated effort involving state and federal partners," said the Council in a January 9 letter to WAFWA President **Don Koch**, who is Director of California's Department of Fish and Game. The council believes a WAFWA standing committee on invasive mussels could "lead a West-wide initiative to address the burgeoning quagga/zebra mussel infestation in the West." ■



# Dudley Ridge Water District

By Don Strickland

California's current drought and court-ordered Delta pumping cutbacks are having the most serious impact on State Water Project customers that rely entirely on surface water.

A prime example is one of the oldest SWP Contractors, Dudley Ridge Water District in southern Kings County, on the western edge of the San Joaquin Valley. Formed in 1962, Dudley Ridge has been receiving State water since 1968 and relies completely on the Project, along with some banking/exchange programs, to serve about half of its 37,600 acres of District lands. Local groundwater is not available.

With a maximum SWP Table A amount of 57,343 acre feet per year, Dudley Ridge has a current annual demand for about 45,000 acre feet from the District's farmers, who primarily grow tree fruit, nuts, and grapes. At the current SWP allotment of 40 percent, the District can count on less than 22,937 acre feet from the California Aqueduct.

The only time Dudley Ridge received less SWP water was during the most recent previous extended statewide drought (1987-1992). In 1991, the District received no water at all from the SWP. Since that time, the District has operated without any employees with field operations handled primarily by Provost & Pritchard Consulting Group, various farmers, and private contractors retained by the District (primarily for weed control and facility maintenance).

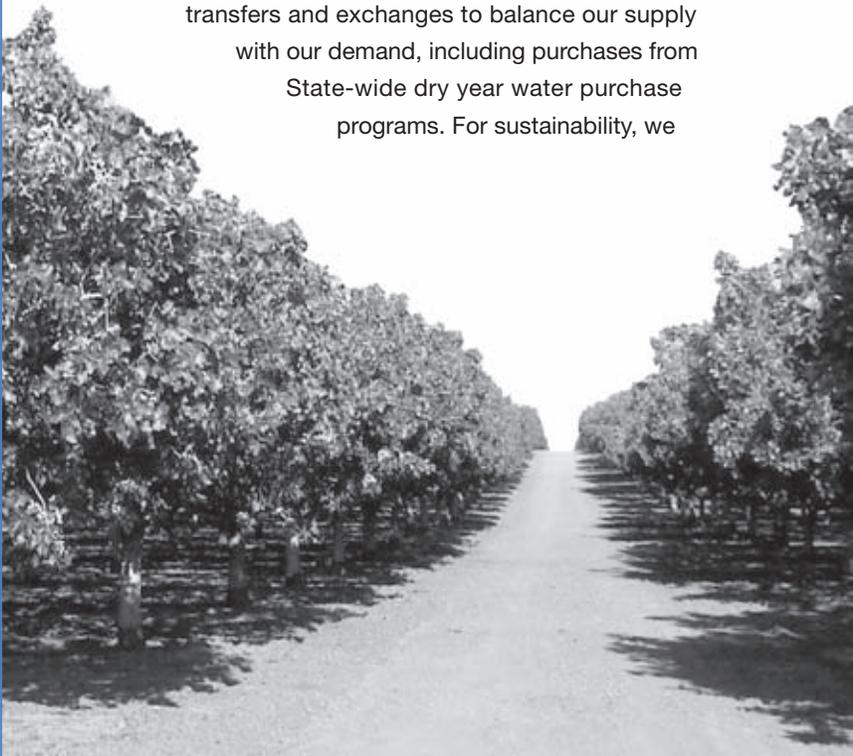
*Dale Melville, who's been associated with the District since 1984, became Manager-Engineer in 1995. He talked about the District's challenges in this interview with DWR NEWS/People:*

"Since the total cutoff of SWP water in 1991, we realized that we needed more diversity in our water resources...especially with no usable groundwater in the District and no local water supplies. In 1995, we became a participant in the Kern Water Bank and developed a 25-year exchange program with San Gabriel Valley Municipal Water District, which is kind of unusual since that agency is located south of the Tehachapis. Since then, we have developed (1) a conjunctive use program with Cawelo Water District and (2) an exchange agreement with Semitropic Water Storage District. As some of our growers also farm in Kern County, we're currently finalizing a long-term transfer and exchange program with the Kern County Water Agency. Additionally, on an annual basis the District relies on transfers and exchanges to balance our supply with our demand, including purchases from State-wide dry year water purchase programs. For sustainability, we



*"Since the total cutoff of SWP water in 1991, we realized that we needed more diversity in our water resources."*

**Dale Melville**  
 Manager-Engineer  
 Dudley Ridge Water District



*“We need to continue developing new partnerships that will provide us with a reliable water supply to meet approximately what our demands are now. We need partnerships with other districts that we haven’t associated with before.”*

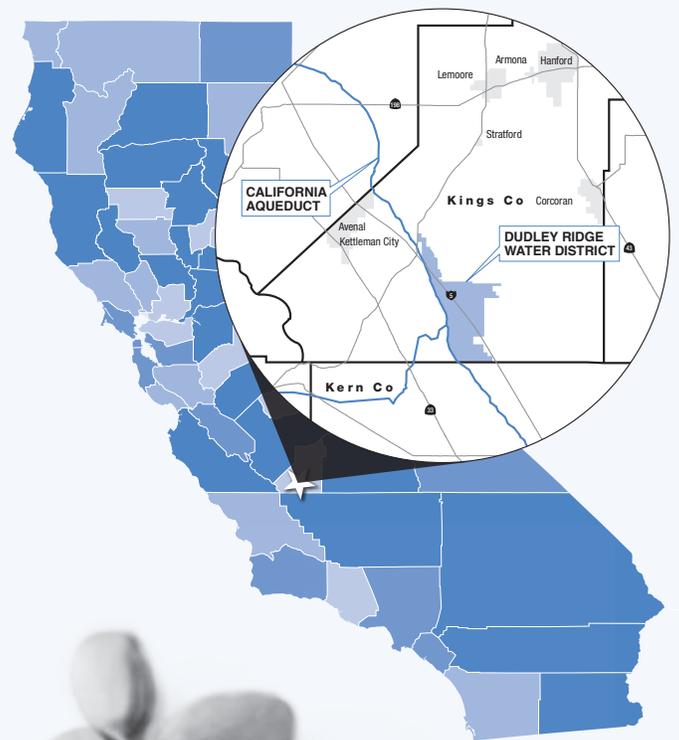
**Dale Melville**  
Manager-Engineer  
Dudley Ridge Water District



need more flexibility to move water quickly and supplemental water in wetter years that we can recover in the drier periods. The availability to secure water in the wetter years is critical to us; the recent biological and court decisions have virtually shut down the Article 21 Program, which is devastating to our water banking and exchange programs.”

**Would you say that maintaining an adequate water supply is your District’s biggest challenge...?**

“Absolutely! The Delta pumping restrictions have translated into a SWP supply that is much less than our historical water demand. Prior to the court decisions and biological opinions, we had a pretty good portfolio of water management programs in place that allowed us the flexibility to keep supply and demands in balance over the long term and maintain current plantings. We’re a permanent crop district (pistachios, almonds, pomegranates, grapes and stone fruit). Through this past March, our farmers were in the unenviable position of trying to predict how much water will be available this year and deciding either (1) how much to deficit irrigate, which could impact yields and long-term tree health, or (2) which orchards to abandon. These are tough decisions... like deciding whether to cut off your arm or your leg.”



*Above: (Left to Right) Dale Melville and Rick Besecker operate as a team in managing and operating DRWD.*



## Are we at a point in time when California could lose the distinction of being the breadbasket to the nation...?

“The current trend is discouraging...and it’s insane to imagine that the most productive agricultural valley in the nation is becoming less utilized for agriculture. The impact is that America will have to rely more on imported food supplies. The consequences will be far-reaching, not just in higher supermarket prices, but in the environmental (e.g., carbon footprint and greenhouse gases) costs as well.”

## As you look ahead over the next decade, where do you see the Dudley Ridge Water District focusing its attention...?

“We need to continue developing new partnerships that will provide us with a reliable water supply to meet approximately what our demands are now. We need partnerships with other districts that we haven’t associated with before. That probably means some sources outside the State Water Project, possibly northern California districts or San Joaquin River entities that may have supplemental water in certain years. The key, however, is having the ability to move water across the Delta because most of the areas that may have additional water in some years are located upstream of the Delta. When the State Water Project is above about 50 percent, there’s not capacity to bring additional

water through the Delta pumps. Restoring Article 21 deliveries is vital to the sustainability of the groundwater banking facilities and programs developed not just by Dudley Ridge, but by many SWP contractors over the past decade. Something has to be done to get water through or around the Delta without the restrictions we are now experiencing; it’s a choking point for California’s economy. A change in the Delta bottleneck is key to our survival...assuming we can afford the cost of the solution!”

Dudley Ridge Water District sends SWP water from the California Aqueduct through five delivery structures called “turnouts.” From each turnout, water is transferred to landowners through District owned concrete-lined canals and/or underground pipelines to metered farm turnouts.

The District owns approximately 22 miles of distribution canals and pipelines and a terminal reservoir to capture operational spills for subsequent deliveries. All permanent crops in the District are irrigated with drip or low-volume microsprinkler systems.

While there are more than 65 landowners in the District, most are absentee owners with small landholdings. Through a combination of direct ownership and farming leases, eight farming entities have active farming operations in the District. ■

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*Photos on this page: Concrete lined canals and pipelines convey water from the California Aqueduct to low volume irrigation systems serving fruit and nut crops throughout the District.*



## California World Class Delta Exhibit Awarded

“California World Class Delta” exhibit, which was created by staff from Public Affairs Office and the State Fair and featured at the California State Fair in 2008, won First Place for Green Programming and Best of Division for Agricultural from the International Association for Fair Expositions, First Place from the Western Fair Association and Second Place from the National Association of Government Communicators.

“It was very exciting to learn that the exhibit had won these awards. This was a true collaborative effort between DWR’s State Fair Committee, State Fair staff and our numerous sponsors and partners,” stated Project Manager, **Dorothy Benjamin** of the Public Affairs Office.

Many Californians are aware that the Sacramento-San Joaquin Delta is important and controversial, but not sure exactly why. DWR chose this topic for its 2008 exhibit California’s World Class Delta, to educate fairgoers of all ages about the importance of the Sacramento-San Joaquin Delta. The display posed three questions: Where is it? Why should I visit? and Why is it important to me?

Every aspect of the display was designed to reinforce the message that the Sacramento-San Joaquin Delta is truly a world class treasure that must be preserved. Through a combination of text and visuals, hands-on activities, and live performances, visitors learned that the Delta is critical to California’s water supply, a key tourist and recreation destination, and a priceless ecosystem.

Murals, ponds, plants, live animals and engaging activities brought the Sacramento-San Joaquin Delta to life in a 6,000 square foot exhibit housed in the California Building, the busiest building at the State Fair. Every brochure, prize and center stage performance was selected specifically to coordinate with the theme of the Delta, and reinforce a fact or detail elaborated in the exhibit.

The display was considered so well done by the Discover the Delta Foundation, the organization requested many components for the future “Discover the Delta” Information Center that will be completed in Rio Vista within two years. As a result, much of DWR’s state fair display will be housed in the permanent collection of this museum. Its important message will continue to educate the public for years to come.

“The California World Class Delta display was the best display I have seen at this years fair. Thanks so much for your efforts and hard work,” stated State Fair visitor Patricia Collins

### Future Exhibit on Save Our Water

The California Department of Water Resource’s 2009 California State Fair Exhibit will build on and be an extension of its existing statewide water conservation campaign, “SAVE OUR WATER.”

This exhibit is aimed at all Californians, both private and public, because we are all impacted by California’s issues of water shortages. The exhibit’s goal that Californian’s permanently modify their water usage lifestyles in simple and easy ways to result in personal water savings of 20 percent or more.

For more information about DWR’s 2009 State Fair Exhibit, email Dorothy Benjamin at [benjamin@water.ca.gov](mailto:benjamin@water.ca.gov) or visit the state fair volunteer Web site at <http://aquanet.water.ca.gov/statefair/> ■

*Dorothy Benjamin of the Public Affairs Office holding the 2008 International Association of Fair Expositions Award for First Place for Green Programming and Best of Division for Agricultural. View of entrance to California World Class Delta Exhibit.*



## DWR Participates in Tsunami Drill

Approximately 30 Department of Water Resources personnel traveled to the North Coast for a regional tsunami response exercise on May 13 designed to test emergency plans, policies and procedures.

Sponsored by the California Emergency Management Agency (CalEMA) and the Federal Emergency Management Agency (FEMA), the exercise began at 8:30 a.m. with report of a major (8.8 magnitude) Aleutian Islands earthquake triggering four severe tsunami surges bearing down on the Washington, Oregon and California coastlines.

Exercise locations included the Humboldt, Del Norte and Mendocino County Emergency Operations Centers, the Yurok Tribe Administration Office, DWR's Eureka Flood Center and the State/Federal Flood Center in Sacramento.

Among communities that took part in the drill were Eureka, Arcata, Crescent City, Trinidad, Petrolia, Orick, Loleta, Ferndale, Willits, Ukiah, Shelter Cove, Fort Bragg and Point Arena.

Humboldt, Del Norte, and Mendocino County resources were involved as well as numerous federal and State agencies, the American Red Cross, American Telephone & Telegraph Company, and Pacific Gas & Electric.



The tsunami threat to Northern California is very real. Since 1812, the California coast has had 14 tsunamis with wave heights higher than three feet and six of them were destructive. The worst tsunami to date resulted from the 1964 magnitude 9.2 Alaska earthquake. Waves towering more than 20 feet smashed into Crescent City in the early morning hours of March 28, killing a dozen people. Fishing vessels were capsized, 289 homes and businesses were damaged, and dollar loss estimates ranged from \$17 million to \$32 million.

DWR will use the May 13 exercise to assess its overall preparedness to respond to North Coast emergencies. The drill also provided emergency response training and exposure to DWR staff. DWR staff from the Flood Centers in Sacramento and Eureka and the Northern District Office participated in this important exercise. ■

*Clockwise: At DWR's Eureka Flood Center, Michael Serna (vest) of Northern District updates tsunami drill information for Nancy Snodgrass of Northern District, Victor Garcia of Sacramento's LAN & Telecommunication Branch, and Mark Rivera of Northern District. The Emergency Command Vehicle in the background is one of three DWR deployed for the exercise. With others in Sacramento and Red Bluff, the first time all three vehicles had been used simultaneously.*

*DWR Tsunami Response Team Director Sherry Constancio from Eureka Flood Center and Deputy Response Team Director Bill Mendenhall of Red Bluff during the first-ever North Coast Tsunami Functional Exercise.*



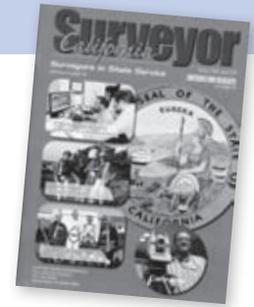
## A Focus on Sustainability at DWR *By Lester Snow, DWR Director*

*Editor's note: This is the first in a new series about sustainability practices and issues at DWR and beyond. Look for this regularly occurring column to find updates on DWR's activities and related news.*

In response to the threats posed by climate change and in recognition of the Department of Water Resources' (DWR) commitment to protecting and enhancing natural and human environments, DWR must resolve to carry out its mission in a sustainable manner. This can be done by minimizing the impact

of our programs and our operations on the environment and by reducing greenhouse gas (GHG) emissions. DWR is already responding to the Governor's Climate Change Initiative (Executive Order S-03-05), Green Building Initiative (Executive Order S-20-04), the Global Warming Solutions Act (AB 32), and State Agency Recycling and Waste Diversion (AB 75) requirements by making changes to the Department's business operations and the State Water Project. We must now build upon these existing efforts to become a sustainability leader within State government and the California water community. These changes will not only

*(continued on page 31)*



## DWR Engineer Edits Award-Winning Trade Publication

“I really can’t take credit for how nice the magazine looks...that accolade goes to The California Land Surveyors Association Central Office in Santa Rosa. My job, as editor, is to provide content for the magazine.”

That’s how DWR Water Resources Engineer **John Wilusz** describes his sideline job as editor of a very slick and colorful quarterly magazine called *California Surveyor*. Published by the Association as a service to the state’s licensed land surveyors, it has a circulation of about 5,000.

Originally from the northwestern Connecticut community of Torrington, Wilusz earned an engineering degree from Central Connecticut State University in New Britain before moving to California in 1989 to build houses with his contractor brother. The house-building stint turned out to be a short one and Wilusz was soon back in the engineering field. After many years as a land surveyor and civil engineer, John joined DWR in January, 2008.

Initially, Wilusz edited a newsletter for the Sacramento chapter of the Association and submitted articles to *California Surveyor*. Then, about two and a half years ago, he was asked to become editor of the magazine.

While it’s an unpaid position, John says editing the magazine takes a tremendous amount of time. That’s because of his approach. “I could lift articles from other magazines and recycle them,” he says, “but I prefer not to do that. I try to select relevant topics and themes and then find people in California who are knowledgeable about those things and ask them to write for us. Our spring 2008 issue featured an excellent article about contributions made by surveyors here at DWR and it was written by **Scott Martin**, Chief of the Geodetic Branch of the Division of Engineering. The forthcoming issue will feature articles about the Delta and

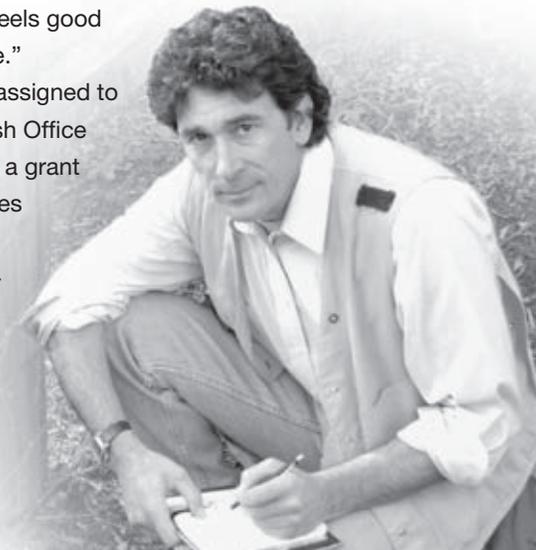
flood management and several will be written by DWR personnel.”

Wilusz says his theory is simple: by providing quality articles by talented writers the magazine will attract more of the same. The plan must be working because the magazine has won “excellence in journalism” honors from the National Society of Professional Surveyors two years in a row. In late February, John went to the society’s national convention in Salt Lake City to accept the latest award.

“I have a personal interest in making this as good as it can be because I see it as an opportunity to give back to my profession. Additionally, I like to write, I see this as a challenge, and I’m honored that I was chosen to do this. My goal for the magazine is to provide service by making it a useful publication for California’s surveying community. So, we want articles that people will enjoy...stories that offer some benefit. When that happens, everybody feels good about it, especially me.”

At DWR, Wilusz is assigned to the Delta-Suisun Marsh Office working primarily with a grant program that distributes levee rehabilitation money to Sacramento-San Joaquin Delta reclamation districts.

John lives in Citrus Heights with his wife, Jaana, a first grade teacher. ■



### *A Focus on Sustainability at DWR (continued)*

make us better stewards of the environment, but should also yield long-term cost savings to State taxpayers through reduced operations and maintenance costs, as well as provide healthier and more productive work environments for staff and visitors.

In my April 22nd letter describing the launch of DWR’s new Sustainability Policy, I announced the appointment of **John Engstrom** and **Dale Hoffman-Floerke** as co-chairs of a Sustainability Work Group. This Work Group will help guide the Department in becoming a sustainability leader for the State.



I encourage each of you to engage in this process and support the Work Group as it develops guidelines to implement this new policy. Collaboration will make this effort a success.

This “Sustainable DWR” article will appear in future DWR People and News publications and will describe efforts and accomplishments by DWR staff.

I strongly encourage you to be part of the sustainable efforts ongoing at DWR, and to show others that our state government recognizes the importance of sustainability and will lead by example. ■

## DWR Chief Economist Ray Hoagland Honored

**Ray Hoagland**, Chief of the Economic Analysis Section with 34 years of experience at DWR, was presented the Career Achievement Award at the California Water and Environmental Modeling Forum's (CWEMF) Annual Meeting held in February in Asilomar.

"I am very glad to see Ray receiving recognition by the California Water and Environmental Modeling Forum for the work he and his staff do to promote sound economic principles in the Department's water planning efforts," said **Rich Jurcich**, Acting Chief of the Statewide Water Planning Branch. "Ray developed the Least Cost Planning Simulation Model (LCPSIM), which has been used in many important studies by the Department; most recently in the North of Delta Surface Storage Investigation."

The CWEMF Career Achievement Award is given to individuals for significant and sustained contributions during their career in developing, using or promoting computer modeling to analyze California's water related problems. Past DWR award recipients include Maury Roos in 2005.

Ray, who received a Bachelor of Arts degree with a double major in Economics and Mathematics from California State University, San Bernardino in 1972, served as an Administrative Specialist in the U.S. Army from 1966 to 1969, mostly in Addis Ababa, Ethiopia. His academic career also included three years of undergraduate work with a major in Physics at University of California, Riverside prior to entering the Army.

His State career began with the California Highway Patrol as a Statistical Methods Analyst in 1973. After joining DWR as an

Economist in 1975, he became Chief of Central District's Economic Analysis Section in the Planning and Technical Services Branch in 1979. His responsibilities included economic and financial analyses of Delta levee restoration programs, the economics of Delta agriculture, and overseeing a 1982 benefit-cost analysis of the then proposed Peripheral Canal project.

As Chief of the Economic Analysis Section since 1985, Ray oversaw or was directly involved in the development and application of economic models including LCPSIM, a water system reliability benefits model for urban areas that Ray started developing in 1985, and the Net Crop Revenue Model (NCRM) and the Central Valley Production Model (CVPM), agricultural economics models developed by his staff. These models have provided key information in support of numerous studies, including the California Water Plan and the CALFED Surface Storage Program. LCPSIM and CVPM, components of the Surface Storage Program Common Model Package, were also recently used by consultants to the State Water Contractors to evaluate the long-term economic impacts of reduced Delta exports due to the Wanger decision. Ray's staff has also produced DWR's "Economic Analysis Guidebook" for project managers. ■



## Dave Kearney Appointed Chief of DWR Procurement and Contracting



**Dave Kearney** brings three decades of supervisory and management experience to his new post as Chief of DWR's Procurement and Contracting Office (PCO). In an era of budget constraint, he sees professionalism and discipline as keys to effective business management in DWR's future.

"In today's fiscal atmosphere, we advise managers to closely examine all costs, regardless of funding source, to squeeze maximum value out of every dollar," counsels Kearney. "These are difficult financial times and we must manage accordingly."

Kearney was appointed as Chief of the PCO in the Division of Management Services on May 18.

"Dave has extensive knowledge of procurement and contracting practices within DWR," said **Kim Oliphint**, Chief of the Division of Management Services. "And broad experience working with SAP software to help automate purchasing, contracting and receiving functions department-wide."

Since 1999, Kearney has been Chief of the Purchasing Services Office. He provided leadership in acquisition of commodities and fleet equipment, managing a \$46 million statewide purchasing program. He also played a significant role in special projects including the California Performance Review, the California Strategic Sourcing Initiative and SAP implementations and upgrades.

Dave's expertise on procurement and contracting escalated during his 1998-1999 stint as Chief of Contracts and Business Services. His activities included direction of contracting efforts

*(continued on page 33)*

## Gary Bardini Appointed as Chief of Flood Management



**Gary Bardini**, Chief of the Hydrology and Flood Operations Office the last five years, was appointed Chief of the Division of Flood Management in June of 2009.

“California today is on the cutting edge of flood policy progress,” reported Bardini, citing recent year critical levee repairs and the acceler-

ated planning of FloodSAFE California to advance flood safety, especially in the Central Valleys.

He noted that California flood experts, including several with DWR affiliations, were active in the National Levee Safety Committee research study that recommended major improvements and national standards for flood safety.

“Our Flood Management Division today has a budget of about \$500 million and a staff of 350, having grown in just four years from a staff of 135 and a budget of \$13.5 million,” stated Bardini. “My intent is that we continue to provide California the very best possible protection of life and property against flooding. We have a lot of talented, dedicated people in Flood Management who are committed to that goal.”

With 22 years of State service, Gary spent four years as Chief of the Hydrology Branch responsible for statewide flood and water supply forecasting. The programs that he has overseen for the last five years are the State’s flood forecasting and water supply forecasting program, California Data Exchange Center (CDEC), the State’s Flood Operations Center and emergency response activities, the Sacramento/San Joaquin Flood Control Project inspections and project integrity programs, and statewide floodplain management programs, including detailed floodplain mapping.

During the wet winter of 2005-2006, Bardini acted as DWR’s chief flood event spokesperson in daily news briefings at the

State-Federal Flood Operations Center. A series of three major Northern California rainstorms in December and January caused high flows in both the Sacramento and San Joaquin rivers.

In 2006, Bardini led a DWR research evaluation of an academic concept to restore Hetch Hetchy Valley in the Southern Sierra to its natural state by removing a historic dam that serves as a major water supply source for San Francisco.

Gary began his career with DWR in 1987 conducting surface and ground water resource modeling studies and planning several water supply developments for DWR, including Kern Water Bank. In 1996, he joined Metropolitan Water District of Southern California to provide water resource modeling supply to State Water Project (SWP) and Central Valley Project (CVP) operations, Bay-Delta issues and Central Valley water right negotiations. In 1997, Gary was promoted to manager of Storage and Conveyance Facilities Unit of CALFED’s Technical Services Branch CALFED Bay-Delta Program and in 1999 assumed the responsibility of Chief of the Technical Services Branch associated with the water supply reliability element.

His broad water and natural resource policy experience resume also includes stints with the Department of Boating and Waterways, and Department of Forestry and Fire Protection.

Bardini earned his Bachelor of Science degree in Civil Engineering, with an emphasis in water resources and structures, from California Polytechnic State University at San Luis Obispo.

“I look forward to working cooperatively on FloodSAFE and other flood safety initiatives and programs in California with our Federal, regional and local partners,” pledged Bardini. “These partners include the U.S. Army Corps of Engineers, the Central Valley Flood Protection Board, Sacramento Area Flood Control Agency, reclamation districts, affinity groups and local officials. We’ll work with them on improving flood safety in California, and with the public and news media to keep our people informed on flood policy developments.” ■

### *Dave Kearney (continued)*

which executed about 500 contracts annually totaling \$70 million and a purchasing function of about \$50 million per year.

A DWR manager since 1990, Kearney whetted his management skills in both the private sector and public service, starting with Brown & Root, Inc., a big Texas construction firm in 1977. Dave joined BP Exploration (Alaska) Inc. in 1980, working first as a supervisor in program development. In 1984, he moved up to Manager of Media Services, planning and directing major business communications projects in support of BP’s oil exploration and production operations throughout Alaska.

Kearney is well-known to many DWR staffers and contractors from his work in a series of DWR management positions, starting in 1990 as Chief of the Department’s award-winning Graphic Services Branch.

During his years at the Graphics helm, Dave helped introduce new digital imaging, computer animation and data base services, streamlined contract processing and served as a user representative on the SAP initiation team.

Dave earned a Bachelor of Science degree in Psychology at the University of Houston. ■

## Dale Hoffman-Floerke Appointed Chief of the Division of Environmental Services



With 32 years of DWR expertise in fishery and water quality studies including 20 years of management experience, **Dale Hoffman-Floerke** brings a wealth of knowledge to her new appointment as Chief of the Division of Environmental Services.

“As DES Chief, my primary goal is to maintain the current high degree

of recognition that DES staff have in the scientific community in and outside of DWR for their dedication, work ethic and commitment to producing work of the highest scientific caliber,” said Dale, who was appointed DES Chief on July 1, 2009. “This applies to all aspects of work that DES staff are engaged in, including fishery research, water quality investigations, environmental documentation, permit applications, monitoring activities and archeological investigations, to name a few.”

Dale’s new assignment will include managing a staff of 150 environmental scientists with expertise in fisheries, water quality, botany, wildlife biology, recreation and wetlands; engineers and modelers; archeologists; technical field staff; chemists and lab technicians, and administrative professionals. With a \$60 million budget, the diversity of work that the DES Chief oversees ranges from ecological field studies and surveys, environmental documentation preparation, permitting application preparation, monitoring and mitigation plan development to overseeing the Department’s Bryte Laboratory. The Chief also serves as DWR’s Cultural Resources Officer.

In her previous assignment as Chief of the Colorado River and Salton Sea (CRSS) Office, Dale managed the completion of a Programmatic Environmental Impact Report for the Salton Sea Ecosystem Restoration Program. This assignment included preparation of a Draft EIR, participation in many public meetings throughout the State, and responding to over 33,000 letters with the help of CRSS staff and consultants.

Dale’s DWR career began in 1977 as a student assistant in the Water Quality Section of the Division of Operations and Maintenance. She assisted in digitizing electrical conductivity strip charts from all of the SWP Field Division water quality monitoring locations. She also helped Field Division staff with protocols for field monitoring for water quality constituents, including pH, water hardness and dissolved oxygen.

“During one of my assignments, I remember spending three weeks in a 12-foot aluminum boat in the California Aqueduct, motoring the entire length of the San Joaquin Field Division, while operating a fathometer to measure the volume of silt that had blown into the aqueduct during the severe windstorm in spring of 1978.”

After graduating from Humboldt State University with a Bachelor of Science degree in Fisheries Biology in 1978, Dale was hired as an Environmental Specialist in San Joaquin District.

“I was hired to develop a biological treatment process to remove sediment and silica from inflow to the Los Banos Demonstration Desalting Facility,” said Dale. “The work required constructing a number of flow-thru ponds that we planted with tules and cattails to act as natural filters.”

In her 11 years in the District, she held a variety of assignments including preparing some of the very first CEQA documents for DWR activities, including the Mitigated Negative Declaration for the repair of San Luis Dam in 1982. In the late 1980s, she worked with former Chief Deputy Director Bob Potter to set up the San Joaquin River Management program.

In 1991, Dale transferred as an Environmental Specialist IV with the Division of Planning and Local Assistance in Sacramento. Her assignment included working on a grant program created for ecosystem restoration. In 1993, she became the Recreation and Wildlife Resources Advisor of the Environmental Services Office. Her assignment included working on a variety of issues, such as DWR’s Oroville Interim Recreation Plan.

After becoming Environmental Program Manager I in 1997, she was appointed to the Chief of the Environmental Compliance and Evaluation Branch of the Division of Environmental Services, supervising a technically diverse staff of 21, including the Department’s Wetlands Coordinator. She managed a variety of environmental compliance activities including cultural resources, terrestrial and botanical resources, hazardous materials investigations and was heavily involved in the Oroville Facilities FERC relicensing activity.

Dale, who was born and raised near San Francisco, enjoys hiking, traveling, and fishing in her spare time. Dale resides in Davis with her husband Rob, who recently retired from the Department of Fish and Game. They have two sons. ■

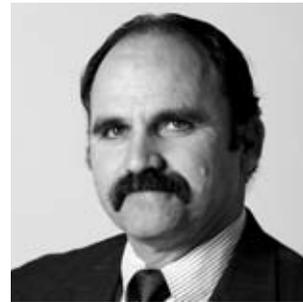
## Twenty-Five Years of Service



**Kathy Aldana**  
Operations and Maintenance  
Staff Services Manager II, April 2009



**Lori Buford**  
Flood Management  
Associate Governmental  
Program Analyst, April 2009



**Larry Carmo**  
Operations and Maintenance  
(San Luis Field Division)  
Hydroelectric Plant Maintenance  
Superintendent, March 2009



**John Carter**  
Public Affairs Office  
Graphic Services Supervisor  
April 2009



**John Crouch**  
Operations and Maintenance  
(Delta Field Division)  
Utility Craft Supervisor, June 2009



**Gary Hester**  
Executive  
Flood Management Planning  
Portfolio Manager, February 2009



**Sherry Holtzclaw**  
Management Services  
Office Assistant, May 2009



**Linda Inouye**  
Southern District  
Secretary, April 2009



**Ramona Malinowski**  
Executive  
Executive Secretary, April 2009



**Paul Martina**  
Management Services  
Office Assistant, June 2009



**Lori Mathis**  
Operations and Maintenance  
Senior Hydroelectric Power Utility  
Engineer (Supv.), March 2009



**Lucas Munoz**  
State Water Project Analysis Office  
Senior Engineer, June 2009



**Viviane Maxwell**  
Flood Management  
Office Technician, August 2008



**Aspet Ordoubigian**  
Safety of Dams  
Senior Engineer, March 2009



**Katherine Spanos**  
Executive  
Senior Staff Counsel, April 2009



**Pamela Tom**  
State Water Project Analysis Office  
Water Resources  
Engineering Associate, April 2009



## Training Office Awards for 2008

By Sean Walsh

DWR's Governance Board devoted part of its April 6, 2009 meeting to acknowledge 33 DWR employees for their contribution to the Department's Training Program.

**Jim Libonati**, Deputy Director for Business Operations and Governance Board Chair, presented the Trainer of the Year Award to 18 of the 23 volunteer trainers who generously gave their time and effort to meet the increased load on the Supervisory Training Program. They assisted in conducting a winter session, as well as double sessions in both spring and fall. In these five sessions, a total of 45 classes were held and 120 new supervisors trained.

**Above:** Left to Right (Front) Myra Galvez, Craig Trombly, Joanna Gonzales, Karina Kugel, Debra Sprinkel (Middle) Chuck Borelli, Amanda Jack, Angie Mejia, Jennifer Dong, Susie Cano-Guzman, Kathie Kishaba (Back) Jeanne Lee, Jim Pearson, Andy Pollak, Bob Highhill, Bill Fackenthall, Rudy Portis, Tom Beiler, Albert Romero, Jim Libonati (Not in Photo: Steve Cowdin, Karen Joelson, Andrea Riley, Fariba Shahmirzadi, Ron Wright)

**Right:** Left to Right: Chief of Operations and Maintenance Carl Torgersen, Frank Crump, Fred Light, Michael Duggan. (Not in photo: Tony Alves, Michael Coogan, George Hren, Sara Lucas, Krista Mason, Randy Scott, Stephen Wong)

**Carl Torgersen**, Chief of the Division of Operations and Maintenance and Governance Board Vice-Chair, presented the award for Training Unit of the Year to three of the ten staff of the DWR Reproduction Unit.

Due to an increase of over 100 training classes in 2008, the reprographic needs increased as well. With a total of 78 training related reprographic jobs of over 167,000 pages reproduced, a deadline was never missed. ■



## 2008 Volunteer Trainers

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The Training Office would like to acknowledge the many volunteer trainers who supported DWR's training program over the past year. Because they served as class instructors in addition to their regular responsibilities, we are truly fortunate to have such dedicated individuals who are willing to put in the extra time and effort to share their knowledge and expertise. We thank them for their commitment to employee training and development.

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Vince Alvidrez	Bill Fackenthall	Curtis Johnston	Scott Morgan	Jerry Snow
Dave Anderson	Gary Fifield	Tariq Kadir	Michelle Morrow	Erick Soderlund
Don Anderson	Nancy Finch	Spencer Kenner	Don Munis	Ted Soderstrom
Mary Ann Archuleta	Mike Floyd	Laurence Kerckhoff	Marge Nagel	Glenn Solberg
Tom Beiler	Kerri Fong	Kathie Kishaba	Jason Newton	Mark Soto
Mike Bingaman	Larry Fox	Jeoff Klugow	Bob Niblack	Mark Souverville
Chris Bonds	Laura Franco	Karina Kugel	Brian Niski	Harry Spanglet
Karen Buckner	Myra Galvez	Alan Ladwig	Janis Offerman	Debra Sprinkel
Rick Burnett	Gary Garcia	Richard Le	Dave Ortega	James Stephenson
Vicki Camp	Victor Garcia	Jeanne Lee	Jim Pearson	Joe Strain
Amber Candela-Cooney	Cheryl Garrett	Marilyn Lee	Tracy Pettit	Donald Strickland
Susie Cano-Guzman	Stacy Garrett	Carrol Leong	Herman Phillips	Clay Thomas
Michael Cardoza	Kim Gazzaniga	Brandon Littlejohn	Troy Phillips	Allen Thompson
Lisa Carter	Diana Gillis	Derick Louie	Raquelana Pina	Craig Trombly
Helen Chau	Laurence Giuntoli	Bill Mahon	Andy Pollak	Ron Van Ness
Binta Coleman	Joanna Gonzales	Isacc Manuel	Rudy Portis	Reymunda Vences
Steve Cowdin	Joe Gonzalez	Scott Martin	Rob Riedlinger	Darby Vickery
Barbara Cross	Robert Grauberger	Louis Mastella, Jr.	Andrea Riley	Curtis Wada
Cathy Crothers	Elissa Gruner	Daniel McConnell	Al Romero	Jack Warner
Sharmane Daniels	Curt Hand	Doug McElvain	Maury Roos	Pat Whitlock
Allan Davis	Gary Hankins	Angie Mejia	Gina Rouse	Deanna Wilkes
Harley Davis	Carl Hauge	Allison Melani	Greg Rowsey	Fred Williams
Tello Diaz	Herb Hereth	Stephanie Mendiola	Phillip Sanchez	Richard Willoughby
Jennifer Dong	Bob Highhill	Ed Mentz	David Sandino	John Wilson
Bob Duffey	Michelle Hill	Michael Mierzwa	Vera Sandronsky	Twylla Winslow
Alyssa Eisner	Norm Hill	Maury Miller	Mary Scruggs	Jean Witzman
Ed Elliott	Tracy Hinojosa	Michael Miller	Eric Senter	Ron Wright
Don Elmore	Bill Holland	John Moe	Deanna Sesso	Derek Yagi
Dan Erreca	Amanda Jack	Paul Mofield	Fariba Shahmirzadi	
Ted Esau	Karen Joelson	Sheryl Moore	Brian Smith	

## Retirements

### Gary Gravier



For Principal Hydroelectric Power Utility Engineer **Gary Gravier**, 1969 was not only the year that man first set foot on the moon. It became the beginning of his dream to become an Engineer.

“When the site for the O&M Center at Oroville was being prepared around 1964, I remember sitting on

the roof of a friend’s house, which was on the uphill side of Quincy Road, watching the dynamite blasting used to clear the olive trees,” said Gary, who lived one mile from the Operations and Maintenance (O&M) Center in Oroville from 1959 to 1975.

“I also remember going on a 7th-grade field trip that same year to look at the dam’s core block from the lower overlook and being very impressed at how high up the hill the top of the dam would end up a few years later.”

After graduating from high school in 1969, Gary began working as a Youth Aid at Oroville Field Division. His first DWR assignment was removing logs and debris along the shoreline of Lake Oroville. Starting in the summer of

1972, he transferred to working as a Student Assistant with the Control Systems Technicians, maintaining supervisory control and data acquisition systems until obtaining his Bachelor of Science in Engineering Technology – Electronics Option from California Polytechnic State University, San Luis Obispo in 1975.

“I wanted to be an engineer from a young age,” said Gary. “I was always fascinated by electrical equipment, wanting to understand what devices were in the PG&E substation in East Nicolaus that my family drove by often when traveling to and from my grandparents house in Sacramento. As a 10 year old, I also enjoyed being in charge of determining which tubes in our family TV set needed replacing when the picture went bad.”

Gary began establishing his dream when he accepted his first full-time position as a Junior Electrical Engineer at Oroville Field Division in August 1975. In addition to learning the control and protective relaying schematics, he assisted in organizing the engineering documentation after construction of Hyatt and Thermalito Powerplants.

With his desire to be involved in designing and constructing of power plants, Gary transferred in 1977 to the Division of Engineering in Sacramento. For more than 15 years, he worked on the construction and commercial operation of Warne and Alamo Powerplants. He also assisted in the expansion of two additional units for Devil Canyon Powerplant and the initial design of Los Banos Grandes, a proposed offstream reservoir.

“Alamo was very important to me because I worked on it from the start, when the site was just flat, bare dirt, to the completed, operational power plant,” added Gary. “Startup at Warne in 1981 was also very exciting because I was just 30 years old, and it was my first opportunity to be in charge of all of the electrical control and protection issues for the units there, which have a unique electrical starting method.”

In 1993, Gary was promoted to Chief of the Engineering and Test Branch in the Division of Operations and Maintenance. After six years, he transferred as Chief of Plant Operations and Maintenance Branch. From 2000 until his retirement in June, he was Chief of the Water and Plant Engineering Office. Gary was a leader in benchmarking the operational and maintenance costs at six State Water Project (SWP) plants against those

of others utilities with similar-sized plants to identify cost-saving opportunities. With help from staff in the Plant O&M Branch, he developed and implemented an equipment condition-assessment program used to objectively develop one-year and five-year maintenance plans for Hyatt, Thermalito, and the 13 main California Aqueduct plants.

“I have traveled to all of the SWP pumping and generating plants, except the Coastal Branch and East Branch Extension plants,” said Gary. “The best part of my job was learning something new every day about the business of the State Water Project, technical or otherwise, and hopefully helping others be successful in their job assignments.”

To begin his next chapter of his life as a retiree, Gary plans to volunteer with Channel 3 Problem Solvers, continue playing euphonium in two community concert bands, work on his home remodel, occasionally fly his radio-controlled airplane, take few weekend trips on his motorcycle each year, and travel the world with his wife, Debby. ■

*“The best part of my job was learning something new every day about the business of the State Water Project.”*

# Retirements

## Diane Sanchez

**Diane Sanchez**, who was among the first women engineers hired at DWR's Southern District, dedicated 48 years of DWR service to helping improve water quality and groundwater supply for Southern California.

Diane, who lived her first 18 years of her life on a farm in Nebraska, graduated from Schuyler High School in 1957. Due to concerns for her mother's health, Diane's family left the harsh, cold weather of Nebraska and moved to California in July of 1957.

After passing the Engineering Student Trainee exam, Diane began working as an Engineering Student Trainee in the Water Quality Section in the Southern District office in March of 1960.

While working part-time during the school year, Diane attended the University of Southern California, where she earned a Bachelor of Science in Chemical Engineering.

"After my graduation in 1962, I discovered private industry reluctant to hire women as engineers," said Diane. "No one in private industry would even interview me."

Having worked during college as an engineering student, Diane instead became a civil engineer. In 1962, DWR hired Diane as a Junior Civil Engineer for the Water Quality Section in downtown Los Angeles. She was promoted to Assistant Engineer in 1964.

Diane's assignments included working with the Regional Water Quality Control Boards, performing investigations of groundwater basins and landfill and waste disposal sites, and assisting with the preliminary water quality control plans for the Southern District regions and the water quality control plans for the Los Angeles, South Lahontan, East Colorado River and West Colorado River, and San Diego regions. She also reviewed reports on waste of water in the Imperial Valley.

Diane was promoted to Water Resources Engineering Associate in 1980. She also worked on groundwater and surface water data programs, well log processing, and Watermaster services. Her other special projects included compiling data and information for the Century Freeway investigation, assisting with DWR's project in destroying leaking wells in the Oxnard plain in Ventura County, and studying of conjunctive use of surface water with storage of water in the groundwater basins in Kern County and in San Bernardino County.

"I enjoyed all the different projects on which I have worked, and I enjoyed meeting interesting people, including many from different countries on different continents," added Diane.

Diane, who retired in December of 2008 as a Water Resources Engineering Associate for the Watermaster Service Section, plans to work as a Retired Annuitant and spend more time reading. ■

## Richard Bostick



Southern Field Division Mobile Equipment Superintendent **Richard Bostick** transitioned into retirement on December 29, 2008, after 21 years and seven months with DWR.

A native of southern California, Richard graduated from Artesia High School and served four years as a mechanic in the U.S. Marine Corps,

including a Vietnam tour in the mid-60s.

Richard joined DWR in June of 1987 as a heavy equipment mechanic and spent his entire state career based at Southern Division headquarters in Pearblossom.

"Southern Field Division covers a big area and I've been from one end to the other," commented Richard. "When Diamond Valley Lake was being constructed, I spent a lot of time working on heavy equipment used to create the reservoir and dam."

With more personal time on his hands, Richard says he will turn his mechanical skills to restoring a couple of vintage Ford Mustang cars and a pair of Harley Davidson motorcycles.

Very heavily involved with the Veterans of Foreign Wars, Richard plans to do volunteer work at the Veterans Hospital in Loma Linda and also join an honor team for burial detail at Riverside National Cemetery.

"A lot of veterans get laid to rest at Riverside who don't have any family at all," says Richard. "They deserve to be honored for their military service and I would feel proud to offer my respect as they begin their final journey."

Richard and his wife, Debbie, live in the Riverside area but anticipate doing some traveling, particularly to visit daughters in Colorado and Texas.

"I know I'm going to miss the friends I made at DWR," says Richard, "But some are already retired and I'm sure I'll see a few of them from time to time." ■

## Retirements

### Barbara McDonnell



As Chief of the Division of Environmental Services for the last nine years, **Barbara McDonnell** pioneered efforts in environmental water management while protecting, restoring, and enhancing natural and human environments.

“While my assignments at DWR have varied, I feel there is a great

continuity of learning about the role water plays in California’s economy, lifestyle, environment, law and politics,” said Barbara, who retired after 18 years of DWR service. “Additionally, I have worked in all my assignments to incorporate science and good government into our world of water management. Water really connects everything in California, and managing to maximize all beneficial uses is quite the challenge for all of DWR.”

As the third generation born in Fresno, Barbara, a proud “Bulldog,” graduated from Fresno State with a Bachelor of Arts degree in 1972 and Master of Arts degree in 1975. Both degrees were in Biology. She also attended the University of California, Davis as a graduate student in the Institute of Ecology studying under Dr. Charles Goldman.

During her 32 years of State Service, she worked 14 years with the Department of Transportation as a Senior and Supervising Environmental Planner in the Division of Environmental Analysis.

Barbara’s desire for a position that was more scientific led her to rejoining DWR. Her assignments have included being Interagency Ecological Program Coordinator, as well as working with many other interagency groups, to being detailed to Governor Schwarzenegger’s California Performance Review.

Among Barbara’s most memorable assignments were leading an interagency team in 1980 to incorporate 1300 miles of California rivers into the National Wild and Scenic Rivers System, and playing key roles in the Oroville Facilities Relicensing Settlement Agreement, the Caltrans/Federal Highway Administration/ U.S. Environmental Protection Agency Mare Island Accord for enhanced environmental planning, the California Performance Review, and the Bay-Delta Oversight Council where she was the Deputy Executive Officer (this effort led directly to the Calfed process).

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*“I will be open to other opportunities and new challenges but will go with my ‘heart’ on how I choose to spend my time. I am going to miss my State employee family, both from DWR and Caltrans. It is the people that make the jobs great, and I have been very lucky to have great peers, staff and managers over these 32 years.”*

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“DWR has changed a lot over the years. Mostly, there is just way more work to do, and the challenges get greater and greater,” Barbara said. “I also feel that the water business has gotten just way too litigious, which actually gets in the way of good water management and good water planning.”

Barbara is planning to relocate from Sacramento to her permanent home in Walnut Creek, where her family resides.

“I hope to continue my rowing passion and spend time enjoying my home and family,” said Barbara. “I will be open to other opportunities and new challenges but will go with my ‘heart’ on how I choose to spend my time. I am going to miss my State employee family, both from DWR and Caltrans. It is the people that make the jobs great, and I have been very lucky to have great peers, staff and managers over these 32 years.”

# Retirements

## George Qualley



After nearly 40 years in State service, 33 of them with DWR, Division of Flood Management Chief **George Qualley** retired in early June.

Originally from North Dakota, Qualley was raised on a farm about 15 miles southeast of Fargo. He graduated from West Fargo High

School before enrolling at North Dakota State University, where he received a Bachelor of Science degree in Civil Engineering in November 1969.

By December, George had landed a Junior Civil Engineer position with the Division of Highways (forerunner of Caltrans) where he worked on designing freeways and bridges.

Briefly sidetracked by statewide layoffs that hit Caltrans in 1975, Qualley began his long career at DWR in December of that year,

starting in the Operations and Maintenance Division's Program Evaluation and Control Office.

More than three decades later, George has served two separate terms as Flood Management Division Chief, been with the State Water Project Power and Risk Office, the State Water Project Analysis Office, the aforementioned Division of Operations and Maintenance, and the State Water Resources Control Board.

Before assuming responsibility for a staff of more than 300 at DFM, Qualley's DWR assignments included annual inspections of State Water Project civil works facilities; water rights analysis; SWP water contract administration; long-range SWP operations studies; and SWP power portfolio development and electrical transmission alternatives analysis.

Retirement offers George the opportunity to spend more time pursuing other interests. Most DWR colleagues know of his passion for motorcycles. In 2003 he joined hundreds of thousands of Harley-Davidson enthusiasts in "riding home" to

factory headquarters in Milwaukee, Wisconsin, for a four-day celebration of HD's 100th Anniversary. Between August 15 and September 9, George covered 6,536 miles through 15 states, including more than 2,500 miles on the fabled "Route 66" from Los Angeles to Chicago.

Wife Sharon "tolerates" motorcycles, he says. "She rides along on short trips...but stays home when I go long distance. Now that I'm retired, I'll probably schedule one long ride every year, as long as I can do it. I've been to the Sturgis (South Dakota) Motorcycle Rally and I'd like to make it to Daytona (Florida) Bike Week one year soon." Sharon has, however, enjoyed some

of the "cool cars" they have had over the years, particularly the 1968 Plymouth GTX Convertible that they took on their honeymoon in 1972.

Qualley has more on his radar screen than motorcycles: "It's absolutely impossible for me to be bored," says the former Flood Division Chief, "because I have so many interests. We'll spend more time enjoying our seven grandkids,

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*"One of the things on my bucket list is to drive 150 miles an hour on the Autobahn. So, when we visit Germany, I'll rent a car that's capable of doing that."*

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and will travel both in the USA and overseas...and one of the things on my bucket list is to drive 150 miles an hour on the Autobahn. So, when we visit Germany, I'll rent a car that's capable of doing that."

Looking back on his DWR years, Qualley remarks "it's the people you remember. The work was interesting and very rewarding but it's the personal relationships that really stand out. I've been very fortunate to work under and beside some really great people. Lester Snow has been 'the right director at the right time in DWR's history', and I have appreciated his vision for the FloodSAFE California initiative. I particularly treasure the time I spent under former director David Kennedy's inspiring leadership."

Qualley says he plans to do some additional work for DWR as a retired annuitant but looks forward to certain aspects of being retired. "One thing I'm really going to appreciate," he says, "is being able to wake up without the insistence of an alarm clock."

## Retirements

### Kurt Kovac



From the studies at the Los Banos Demonstration Desalting Facility to flood fighting in the Delta, Senior Engineer **Kurt Kovac** handled a variety of assignments for DWR's San Joaquin District during the last 28 years.

"I am very fortunate that I was given the opportunity to be involved

in agricultural drainage water management," said Kurt.

"My involvement started with the project at the Los Banos Demonstration Desalting Facility. The project was a culmination of studies and activities by the U.S. Bureau of Reclamation, University of California, Los Angeles, University of California, Berkeley and the Department for the management of agricultural drainage water, salt. To this day the process involving clarification, filtration, ion-exchange for calcium removal, and desalting by reverse osmosis remains the most technically feasible and lowest cost management treatment scenario."

Kurt, who born and raised in inner-city Cleveland, Ohio, graduated from St. Ignatius High School in 1972.

"As a child, I always enjoyed working with hand tools, fixing my bicycle and building and creating things from discarded and absconded junk," said Kurt. "My parents and others saw this aptitude and encouraged me to go into engineering. I did not know what an engineer did, but that seed was planted and I somehow managed to follow that path."

After graduating from Ohio State University with a Bachelor of Science in Civil Engineering in 1977, Kurt began working for Havens and Emerson, a consulting environmental engineering firm, in Cleveland, Ohio. As Design Engineer, Kurt worked on upgrading primary wastewater treatment plants to advanced wastewater treatment. He was transferred to St. Louis, Missouri in spring 1980 to supervise a field crew for a Clean Water Grant Inflow-Infiltration study for the county where he learned "the ins and the outs" of a combined sewer system, experienced many tornadoes and observed a multitude of schools of brown trout.

In 1981, Kurt began his DWR career as a Junior Civil Engineer for San Joaquin District's Agencies Section of the Project and Evaluation Branch. In January of 1982, he was on flood duty for Santa Cruz County.

Kurt joined the Water Reclamation Section in the District's Planning Branch in February 1982. The Los Banos Demonstration Desalting Facility (LBDDF) project was in the initial construction phase. He worked on the ion exchange treatment plant, vertical-tube foamy evaporator, and solar pond.

Kurt presented the technical paper describing results of Vertical-Tube Foamy Evaporator (VTFE) at the 1990 National Water Supply Improvement Association's Biennial Conference at Orlando, Florida.

Among many reports written by Kurt are "Brine Concentration Utilizing Solar Pond Heat with a VTFE," "Ion-exchange System at the Los Banos Demonstration Desalting Facility (LBDDF)," and "Selenium Removal at Adams Avenue Agricultural Research Center."

As LBDDF was being decommissioned, the Adams Avenue Agricultural Drainage Research Center in western Fresno County was established as a joint effort among the DWR, the Engineering Research Institute of California University, Fresno, Westlands Water District, and the U.S. Bureau of Reclamation to further develop selenium reduction and removal processes.

In February 1998, Kurt was assigned to assist in the monitoring of Delta levees. Kurt was among the crew of four awarded the California Medal of Valor in 1998 by Governor Wilson for rescuing a young mother and her two children from the swollen Sacramento River.

Kurt later worked on the pilot-scale desalting project for the Buena Vista Water District in Kern County from 1999 to 2002, supervising monitoring activities at Red Rock Ranch, preparing sampling plans and supervising sampling activities for pilot-scale desalting projects at Red Rock Ranch and Panoche Drainage District, and supervising sampling activities at Tulare Lake Drainage District's Flow-Through Wetlands Project.

Since the early 1990's, he was involved in work with the University of California, Los Angeles, which researched and determined the fundamentals and mechanisms of salt crystallization in agricultural drainage water, developed protocols and methodology to determine limits of concentration, determined the effectiveness of scale inhibitors, and is in the process of testing a scale monitoring and control system for membrane desalting.

"Retirement offers many opportunities that could not be pursued to the fullest due to employment responsibilities," said Kurt. "First, my priority is to see to the well being of my mother." With that managed, I plan to ride my bicycle on as many Rails-to-Trails Conservancy trails as I can, to attend a baseball game at every major league park, to enjoy family and friends and to eventually volunteer time to some, yet-undetermined, public cause. Now, I can close one book and start another. Hopefully my health will let me participate. Retirement, let's get started. Where is the nearest micro-brewery?"

# Retirements

## Jerry Scoles



To Senior Hydroelectric Plant Operator **Jerry Scoles**, his 35 years with DWR were filled with many great memories.

“Working in the Planning and Scheduling Office was one of my most memorable assignments,” said Jerry, who retired in May. “I got to meet people from Sacramento and

Metropolitan Water District of Southern California that I normally would not have met.”

A native of Red Bluff, Jerry, who attended Shasta Junior College in Redding, learned about the apprentice program while visiting his father, Lee Scoles, who worked for Northern District. Jerry, who enjoyed working on cars and boats at his family shop, has always been interested in how things operate.

Jerry trained as an Apprentice at Edmonston, Wheeler Ridge and Buena Vista Pumping Plants.

“I am very thankful to Don Creel, who took me under his wing when I started work at Edmonston, and Jess Witt, who was my Senior Operator at Wind Gap,” said Jerry. “They both had a big influence on my life at DWR.”

As the second apprentice class to graduate from DWR’s Operations and Maintenance Apprentice Program, Jerry became a Hydroelectric Plant Operator in 1977. Then, he was assigned to San Joaquin Field Division at Chrisman Pumping Plant.

“My primary function as an operator was preparing design switching procedures to make sure safe for maintenance to be done, then bringing back equipment to operation,” said Jerry. “Operators are the first and the last to do work during a repair or any maintenance. We make sure the unit is safe for any electrical or mechanical maintenance or repair.”

Due to Jerry’s promotion to Senior Hydroelectric Plant Operator for San Luis Field Division in 1982, Jerry was able to move within 50 miles of his parent’s home in Modesto. Jerry’s first assignment at San Luis was at Los Banos Demonstration Desalting Facility until it was closed. Then, he began working at the Area Control Center.

“The desalter was a unique assignment because I worked with people from all over the world in helping set up the evaporating unit,” said Jerry.

From 2003 to 2004, he worked in the Planning and Scheduling Office, where he assisted with maintenance plans for San Luis facilities.

During his 27 years at San Luis Field Division, he assisted with the operations of San Luis Reservoir, O’Neill Forebay, Gianelli Pumping-Generating Plant, Dos Amigos Pumping Plant, and several check structures along the California Aqueduct.

As for his life after DWR, Jerry plans include more time for golfing, restoring his sports car and working with his wife, who operates her own travel agency. ■

# Retirements

**James Brantley**  
Engineering  
Supervising Engineer

**I-Ming Cheng**  
Flood Management  
Senior Engineer

**Lonnie Cox**  
San Joaquin Field Division  
HEP\* Operator

**Vilma Demafelis**  
Southern Field Division  
Business Service Officer I

**Afshin Gousheh**  
Technology Services  
Senior Program Analyst

**Robert Highhill**  
Management Services  
Labor Relations Manager I

**Ben Igawa**  
San Joaquin District  
Senior Engineer

**Alfonso Lopez**  
Southern Field Division  
Utility Craftworker

**Clarice Moody**  
Engineering  
Construction Management  
Supervisor

**Do Nguyen**  
State Water Project Analysis Office  
Associate HEP\*\* Utility Engineer

**Gary Petlow**  
Fiscal Services  
Staff Administrative Analyst (AS)

**Tony Reis**  
Management Services  
Staff Services Analyst

**Ronald Rushing**  
San Luis Field Division  
Water Resources Technician II

**Gerald Snow**  
Flood Management  
Water Resources Technician II

\* Hydroelectric Plant

\*\* Hydroelectric Power

## Retirements

### Edward Schmit



DWR's Delta-Suisun Marsh Office lost nine-year employee **Edward Schmit** to retirement at the end of April.

Originally, from North Dakota, Schmit earned an Agricultural Engineering degree from North Dakota State University in 1964 and a Masters in Agricultural

Engineering from the University of Missouri in 1965.

Then, the call of adventure took him to Iran for two years as a Peace Corps Volunteer. Upon returning, he moved to California and worked as a Hydraulic Engineer at the U.S. Department of Agriculture's Natural Resources Conservation Service for 30 years.

With the advent of the new millennium, Ed accepted a DWR position in the Environmental Compliance and Ecosystem Enhancement Branch.

"I got involved in Delta habitat issues," says Ed. "It was challenging, very interesting, and I really enjoyed it. It was the

kind of work where you take a project from the concept stage all the way to putting infrastructure on the ground."

Ed points with pride to his last project: "It entailed integrating a habitat feature into a levee stability project on Sherman Island," he says. "We built 6000 linear feet of new levee adjacent to the old one and will excavate the original structure down to near mean sea level. About one-third of the waterside work was completed last year. In the process, we'll create 3.7 acres of functioning inter-tidal channel margin habitat that will benefit native aquatic species."

A Davis resident since 1972, Ed figures he'll keep busy in his retirement years with home projects and family interaction. "I'm sure I'll be spending a lot of time with my grandkids," he says, "and I may do some consulting work because I thoroughly enjoy habitat projects."

Some traveling is on the horizon, as well. "I'm sure my wife and I will be making a few trips," added Ed. "Most of our visits will be with relatives in Canada and the Midwest."

## New Hires

### Melissa Aldana

Executive  
Office Technician (Typing)

### Kari Bianchini

Engineering  
Engineer

### Debabrata Biswas

Executive  
Engineer

### Angeles Caliso

Executive  
Engineer

### Arthur Carlton

Engineering  
Engineer

### Michelle Chen

Fiscal Services  
Accountant Trainee

### Stephanie Chun

Flood Management  
Staff Environmental Scientist

### Sean Dunbar

Flood Management  
Engineering Geologist

### Anthony Elliott

Southern Field Division  
Materials & Stores Specialist

### Feliza Escoto

Fiscal Services  
Office Technician (Typing)

### Jesus Esparza

Flood Management  
Engineer

### Kelly Fucciolo

Flood Management  
Engineer

### Thomas Garcia

Technology Services  
Staff Information Systems Analyst

### Michael Gardner

Environmental Services  
Senior Information Systems Analyst

### John Gibson

San Joaquin Field Division  
HEP\* Operator

### Bryant Giorgi

Operations & Maintenance  
Engineer

### Marcos Guerrero

Environmental Services  
Associate Environmental Planner  
(Archeology)

### Guobiao Huang

Bay-Delta Office  
Engineer

### Elizabeth Hubert

Flood Management  
Staff Environmental Scientist

### Juli Hughes

Central District  
Engineer

### Alan Jackson

Delta Field Division  
Heavy Equipment Mechanic

### Marill Jacobson

Flood Management  
Research Analyst II (Geo-Info-Sys)

### Trevor Joseph

Central District  
Engineering Geologist

### Pasha Kashkooli

Central District  
Junior Engineering Technician

### Katharine Killeen

Executive  
Staff Counsel III

### Roy Kroll

Flood Management  
Engineering Geologist

### Annabel Kuo

Fiscal Services  
Accountant Trainee

## New Hires (continued)

**Abinet Kutie**

Flood Management  
Engineer

**Curtis Lee**

Flood Management  
Engineering Geologist

**Sungho Lee**

Executive  
Engineer

**Michael Lemos**

Southern Field Division  
HEP\* Operator

**Kaho Leung**

Technology Services  
Senior Programmer Analyst

**Gary Lippner**

Central District  
Senior Engineer

**Cayle Little**

Planning & Local Assistance  
Land & Water Use Scientist

**Armando Lopez-Bedolla**

Engineering  
Engineer

**Heydar Massoudi**

Flood Management  
Engineer

**Michelle McGowan**

Engineering  
Office Technician (Typing)

**Jon Mckean**

Flood Management  
Engineer

**Danika Melcer**

Planning & Local Assistance  
Environmental Scientist

**Anthony Meyers**

Engineering  
Supervising Construction Engineer

**Keith Millard**

Flood Management  
Engineering Geologist

**Margaret Monreal**

San Joaquin District  
Office Technician (Typing)

**Nancy Moricz**

Executive  
Engineer

**Asm Golam Mostafa**

Operations & Maintenance  
Electrical Engineer

**Janice Mueller**

Engineering  
Office Technician (Typing)

**Gary Munoz**

Environmental Services  
Chemist

**Erik Murphy**

Central District  
Associate Information  
Systems Analyst

**Paul Murray**

Engineering  
Engineer

**Thomas O'Neil**

Engineering  
Right of Way Agent

**Kelley Paxton**

Environmental Services  
Environmental Scientist

**David Perry**

Engineering  
Engineering Geologist

**Charles Rabamad**

Flood Management  
Engineer

**Manas Ray**

Operations & Maintenance  
Water & Power Dispatcher

**Gary Reynolds**

Engineering  
Engineer

**Itzia Rivera**

Flood Management  
Associate Governmental  
Program Analyst

**Frank Ruiz**

San Luis Field Division  
Utility Craftsworker

**Megan Rump**

Management Services  
Staff Services Analyst

**Robert Scarborough**

Flood Management  
Engineer

**Marcia Scavone-Tansey**

Environmental Services  
Environmental Scientist

**Benjamin Scheeline**

Engineering  
Mechanical Engineer

**Adair Schwarz**

Management Services  
Staff Services Analyst

**Selvaratnam Selvamohan**

Flood Management  
Engineer

**Mark Shaltes**

Management Services  
Office Assistant

**Arasan Singanayaham**

Flood Management  
Engineer

**Scott Sochar**

Engineering  
Engineering Geologist

**Mark Steenburg**

Engineering  
Construction Management  
Supervisor

**Anna Stewart**

Engineering  
Right of Way Agent

**Curt Taras**

Engineering  
Engineer

**William Templin**

Environmental Services  
Environmental Scientist

**Xinyan Tian**

Fiscal Services  
Accountant Trainee

**Jon Tice**

Executive  
Engineer

**Michael Ton**

Engineering  
Engineer

**Gopalan Vishnan**

Flood Management  
Engineer

**Christina Wabinga**

Management Services  
Staff Services Analyst

**Christopher Williams**

Flood Management  
Engineer

**Joo Chai Wong**

Executive  
Engineer

**Gordon Wright**

Engineering  
Engineer

**Christopher Wu**

Engineering  
Right of Way Agent

**Xihua Xu**

Environmental Services  
Senior Programmer Analyst

**Pirathapan Yogeswaran**

Flood Management  
Engineer

**Sterling York**

Flood Management  
Engineer

**Chunmei Zhang**

Engineering  
Photogrammetrist I

**Ke Zhong**

Flood Management  
Engineer

\* *Hydroelectric plant*

## Promotions

### Linda Adams

Southern Field Division  
Business Services Assistant

### Katayoun Aflatouni

Operations & Maintenance  
Associate HEP\*\* Utility Engineer

### Ariyaputhirar Balakrishnan

Engineering  
Supervising Engineer

### Michael Barentson

Fiscal Services  
Accounting Administrator I (Supv.)

### Denise Barnes

Southern Field Division  
Associate Governmental Program Analyst

### Cheryl Barros-Keeton

Fiscal Services  
Staff Services Manager I

### Michelle Beachley

Environmental Services  
Staff Environmental Scientist

### Banafsheh Behnam

Engineering  
Supervising Engineer

### Stacey Berringer

Management Services  
Associate Governmental Program Analyst

### Aaron Bonner

Southern Field Division  
HEP\* Mechanic I

### William Brackney

Operations & Maintenance  
Associate HEP\*\* Utility Engineer

### Vincent Brown

Engineering  
Electrical Construction Supervisor II

### Deane Burk

Executive  
Associate HEP\*\* Utility Engineer

### Fabricio Cordero

Technology Services  
Senior Information Systems Analyst

### Stephen Cowdin

Planning & Local Assistance  
Research Program Specialist III  
(Econ/Ops)

### Eddie Cressy

Southern Field Division  
HEP\* Mechanic I

### Carolyn Dabney

Engineering  
Senior Land Agent

### Sam DeSarno

Engineering  
Senior Electrical Engineer

### Laurie Del Gallego

Flood Management  
Associate Governmental Program Analyst

### Brian Depuy

Engineering  
Construction Supervisor III

### Jaspreet Dhanota

Executive  
Associate HEP\*\* Utility Engineer

### Kelly Doan

Environmental Services  
Staff Information Systems Analyst

### Perry Dunton

Southern Field Division  
Mobile Equipment Superintendent I

### Leroy Ellinghouse Jr.

Operations & Maintenance  
Senior Land Agent (Supv.)

### Avery Estrada

Flood Management  
Engineer

### Joel Ferrera

Oroville Field Division  
HEP\* Mechanic II

### Scott Flory

Central District  
Research Analyst II (Geo-Info-Sys)

### Agnes Forshey

Technology Services  
Systems Software Specialist II

### Olivia Garcia

Engineering  
Associate Land Agent

### Seth Gargano

San Luis Field Division  
HEP\* Operator

### Stacy Garrett

Management Services  
Office Technician (Typing)

### Jorge Gomez

Operations & Maintenance  
Precision Electronics Specialist

### Damon Grimes

Engineering  
Associate Electrical Engineer

### Catalina Guillen

Environmental Services  
Systems Software Specialist II

### Candace Hayashida

Management Services  
Personnel Specialist

### James Herota

Flood Management  
Staff Environmental Scientist

### Nicholas Hightower

Engineering  
Engineering Geologist

### Michael Hopkins

Oroville Field Division  
Utility Craftworker

### Randolph Hszieh

Executive  
Associate HEP\*\* Utility Engineer

### Sharon Ingle

Engineering  
Associate Governmental Program Analyst

### Oscar Jimenez

Southern Field Division  
HEP\* Mechanic II

### Jaime Jimenez

San Joaquin Field Division  
HEP\* Mechanic I

### Gareth Johnson

Management Services  
Training Officer I

### Douglas Jordan

Engineering  
Associate Governmental Program Analyst

### Abdul Khan

Planning & Local Assistance  
Senior Engineer

### Michelle King-Byrd

Technology Services  
Senior Information Systems Analyst

### Karina Kugel

Management Services  
Staff Services Manager I

### Mark Lambert

Public Affairs Office  
Director, TV Communications Center

### Cynthia Ledoux-Bloom

Environmental Services  
Staff Environmental Scientist

### Shannon Lee

Executive  
Administrative Officer II, Resources Agency

### Brandon Littlejohn

Management Services  
Associate Personnel Analyst

### Alfred Macias

Engineering  
Associate Electrical Engineer

### Bahadur Mann

Engineering  
Associate Land Agent

### Peter Manukyan

San Joaquin District  
Water Resources Technician I

### Estela Marasigan

Fiscal Services  
Senior Accounting Officer

### Dane Mathis

San Joaquin District  
Senior Engineering Geologist

\* *Hydroelectric plant*

\*\* *Hydroelectric Power*

## Promotions (continued)

**Robert Moeller**

Fiscal Services  
Accounting Administrator II

**Trevor Morgan**

Northern District  
Engineer

**Danna Mosley**

Fiscal Services  
Senior Accounting Officer

**Asm Golam Mostafa**

Operations & Maintenance  
Associate HEP\*\* Utility Engineer

**Frances Myers**

State Water Project Analysis Office  
Senior Engineer

**Parviz Nadertehrani**

Bay-Delta Office  
Supervising Engineer

**Brian Niski**

Technology Services  
Staff Programmer Analyst

**Armando Ortiz**

Operations & Maintenance  
Associate HEP\*\* Utility Engineer

**William Osuch**

Oroville Field Division  
HEP\* Electrician I

**Laura Patterson**

Environmental Services  
Staff Environmental Scientist

**Jessica Pearson**

Executive  
C.E.A.

**Shaun Philippart**

Central District  
Senior Environmental Scientist

**Troy Phillips**

Technology Services  
Associate Information Systems  
Analyst

**Simon Pickett, Jr.**

Management Services  
Business Service Officer I (Supv.)

**Shanmugam Pirabarooban**

Engineering  
Senior Engineer

**Vicki Price**

Management Services  
Staff Services Manager II (Supv.)

**Ruben Ramirez**

Flood Management  
Service Assistant

**Mark Reimer**

San Joaquin Field Division  
Utility Craftworker Supv.

**Felipe Renteria-Lizardi**

Technology Services  
Senior Information Systems Analyst

**Justin Robinson**

Oroville Field Division  
HEP\* Electrician II

**Angel Rodriguez**

Management Services  
Associate Governmental Program  
Analyst

**Anthony Rucker**

Management Services  
Materials & Stores Specialist

**Raul Salcedo**

Delta Field Division  
Utility Craftworker

**Rita Sanko**

Fiscal Services  
Deputy Comptroller DWR

**Jon Seehafer**

Executive  
Associate HEP\*\* Utility Engineer

**Peter Setzchen**

Oroville Field Division  
HEP\* Operator

**Ravi Sharma**

Operations & Maintenance  
Associate HEP\*\* Utility Engineer

**Azam Yar Siddiqui**

Engineering  
Associate Electrical Engineer

**Ran Singh**

Flood Management  
Senior Engineer

**Ronny Siu**

Southern District  
Staff Services Analyst

**Rick Smith**

Management Services  
Associate Business Management  
Analyst

**Timothy Smith**

Environmental Services  
Staff Environmental Scientist

**Kathy Stanley**

Fiscal Services  
Senior Accounting Officer (Supv.)

**Mark Storz**

Operations & Maintenance  
Mobile Equipment Superintendent I

**Curt Taras**

Executive  
Senior Engineer

**Debbie Terzoli**

Operations & Maintenance  
Associate Governmental Program  
Analyst

**Alfredo Toy, Jr.**

San Joaquin Field Division  
HEP\* Electrician I

**Xuanan Tran**

Fiscal Services  
Accounting Officer

**Wendy Underhill**

Technology Services  
Senior Information Systems Analyst

**Jeanet Uy**

Fiscal Services  
Accounting Officer

**Daniel Vasquez**

Engineering  
Right of Way Agent

**Laurie Walker**

Engineering  
Associate Land Agent

**M. Elizabeth Ware**

Management Services  
Associate Governmental Program  
Analyst

**David Williams**

Executive  
Senior Engineer

**Nikki Willson**

Management Services  
Associate Governmental  
Program Analyst

**Susan Wilson-Broadus**

Engineering  
Senior Engineer

**Kip Young**

Flood Management  
Staff Environmental Scientist

\* *Hydroelectric Plant*

\*\* *Hydroelectric Power*

## Professional Engineer Electrical Engineering Exam Graduate

**Ted Soderstrom**

Associate Hydroelectric  
Power Utility Engineer  
Oroville Field Division  
October 2008

## Birth Announcements

### *Congratulations to DWR Parents!*

**Laura Flourney**, an Environmental Scientist with the Division of Environmental Services' Mitigation and Restoration Branch, has a daughter named Morgan Elizabeth, who was born on February 12, 2009 weighing 9 pounds and measuring 21.25 inches long.

**Katherine Marquez**, an Environmental Scientist with the Division of Environmental Services' Environmental Compliance and Evaluation Branch, has a daughter named Madelyn Frances, who was born on March 11, 2009 weighing 6 pounds, 14 ounces and measuring 21 inches long.

**Leah McNearney**, an Environmental Scientist with the Division of Environmental Services' Environmental Compliance and Evaluation Branch, has a daughter named Evelyn Ruth, who was born on August 8, 2008 weighing 7 pounds, 2 ounces and measuring 20 inches long.

**Nickolas Perez**, Associate Programmer Analyst of Flood Management's California Data Exchange Center, has a daughter named Olivia, who was born on March 27, 2009 weighing 7 pounds, 14 ounces and measuring 21 inches long.

**Tiffany Schmid**, an Associate Environmental Planner with the Division of Environmental Services' Environmental Compliance and Evaluation Branch, has a daughter named Azylyn Kate, who was born on September 5, 2008 weighing 8 pounds, 3 ounces and measuring 19½ inches long.

**Qiang (Jon) Shu**, an Engineer with the Bay-Delta Office, has a son named Chunyee, who was born on March 14, 2009 weighing 6 pounds, 3 ounces and measuring 19 inches long.

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## Obituaries

### Paul Pedone

DWR retired Structural Design Technician III **Paul Pedone** passed away at the age of 86 on January 3.

A graduate of C.K. McClatchy High School, Paul proudly served in the U.S. Army Air Corps. Paul was a member of Sacramento Elks Lodge #6 and the Dante Club.

Paul, who retired from the Civil Design Branch in October of 1981, worked 33 years for DWR. He helped celebrate the Division of Water Resources becoming a Department in 1956.

He joined the Division of Water Resources in 1948 as an Engineering Aid. He became Senior Engineering Aid by 1950 and Delineator by 1952.

"I remember Paul as a very friendly person who everyone enjoyed being around," said Ralph Torres, Deputy Director at DWR.

Paul was a structural drafting technician and known for his expertise in many areas of water supply and land use activities. His assignments included studies on the initial development of the Suisun Marsh, Los Vaqueros Dam and Reservoir, the Glen Project, the Thomes-Newville Project, and contract drawings for the California Aqueduct.

He is survived by his wife of 56 years, Pearl, his four daughters, 10 grandchildren, 18 great-grandchildren, and 1 great-great-grandchild. ■

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### Glenn Peterson

**Glenn Peterson**, former DWR civil engineer, passed away at the age of 84 on April 4.

Glenn, formerly of Michigan, was a U.S. Navy Veteran of World War II. After his move to California in 1948, he worked for the Southern Pacific Company.

He began his DWR career working for the Delta Studies Section until he became a Water Master in 1955. In 1958, he moved to the Division of Planning's Hydrology and Basic Data

Branch, where he stayed until he joined the Water Resources Control Board's Water Rights Section in the late 1960s. He retired from the Board at the age of 55.

After his retirement, Mr. Peterson worked as a contractor at McClellan Air Force Base. At the age of 65 to 82, Glenn became an award-winning ballroom dancer.

He is survived by his two daughters, a son, five grandchildren, and two great grandchildren. ■

# Obituaries

## Alfonso De Pina



**Alfonso De Pina**, a retired Printing Trades Specialist III, passed away at the age of 71 on May 27, 2008.

During his 38 years with DWR, Al began his service with the Department of Water Resources in 1960 as a Blueprinter in the Design Branch. When the Resources Building opened in 1964, Al was moved from the Design Branch located at 24th and R Streets to the new office in the Resources Building. From 1974 to 1984, Al earned several promotions from Printing Trades Production Coordinator to Printing Trades Specialist III.

Al was instrumental in making blueprints and diazo printing of engineering drawings for several SWP facilities under stringent time frames and did an outstanding job. In 1986, he received his 25 year award. Al retired in January of 1998.

“Al loved what he did on the job and left many friends missing him at printing production,” said Stephen Wong of Printing Production.

He was preceded in death by his wife Diane. He is survived by his 4 daughters, 13 grandchildren and 7 great-grandchildren.

“Al was a family loving man and a hard working man. He would help in any way he could to better production and make the task easier,” said Joe Freitas, DWR retiree. “Al was a true friend and is surely missed by his friends and the people in Printing Production. Al was part of the original ‘CAN DO GANG!’” ■

## John Payne



**John Payne**, retired Senior Engineer of Flood Management, passed away at the age of 76 on February 8 in Sacramento.

A U.S. Army veteran, John was born in Ashland, Oregon. His 30 years with DWR began as a Junior Civil Engineer for the Reclamation Board in 1961. In 1976, he joined DWR’s Division of Planning Program Control Office as a Staff Engineer responsible for monitoring the Blue Book, a bimonthly progress report. John also worked on Delta negotiations and the Suisun March Control Gates structure move from Montezuma Slough to Rio Vista.

“I enjoyed working with John in the early 1980s. He was friendly and had a wonderful laugh that I will never forget,” said

Carol Birch of DWR. “He made going to work each day a joy. I also loved to see him driving off in that old classic Chevy at the end of the day.”

As Chief of the Flood Project Analysis Section, John supervised the environmental work for such projects as the Sacramento Urban Levee Renewal and the American River-Auburn Dam Studies, and gave air tours of the San Joaquin Valley to show staff SWP repairs requiring funds. John retired in August of 1991, but worked as a Retired Annuitant until 1999.

“As my supervisor in Flood Management in the early 1990s, I really enjoyed working for John. He was always smiling, and you could always hear him laughing,” said Robert Cooke of DWR. “John was a good engineer, a straight shooter, and an all around great guy.”

John is survived by his wife, Effie, of 55 years, two daughters, and four grandchildren. ■

## Judy Ribolin



**Judy Ribolin**, a retired Programmer II, passed away on May 11, 2009.

Her 21 years of State service began with the Employment Development Department as an Account Clerk. In 1987, she joined DWR as an Office Assistant II in Management Services. Judy

became Data Processing Technician for the Computer Systems Office in 1980 and Information Systems Technician Specialist I for the Information Systems and Services Office in 1993.

In the Division of Technology Services, she worked as a Programmer II for the User Application Development Section of the End User Applications Support Services Branch. She retired in December of 2008. ■

## Obituaries

### Sally Nyman

**Sally Nyman**, who worked for 17 years at DWR, passed away on January 3 in Sacramento.

Sally's more than 31 years of State service began as a Youth Aid for the Department of Water Resources. During her 17 years with DWR, she worked as a Student Assistant, Office Assistant, Office Technician, Management Services Technician, Staff Services Analyst, and Associate Governmental Program Analyst.

In 1978, DWR's Director presented Sally a unit citation for her outstanding contribution to the establishment of the Drought Information Center. In 1992, while working for the Division of Planning's Program Control Office, she received a unit citation in recognition and appreciation of her efforts in maintaining outstanding administrative, fiscal, and business and management services, as well as accomplishing extra work required to complete the Division of Planning's reorganization. She assisted in developing and implementing more than 42 monitoring,

tracking, informational, and procedural systems to assist Division staff in meeting their administrative and fiscal responsibilities.

Sally worked for the Resources Agency from 1994 to 2004, then she transferred to the Department of Justice in 2005. In 2006, she joined the State Water Resources Control Board's Division of Water Rights as an Associate Governmental Program Analyst and was promoted to Staff Services Manager I in June of 2008.

"Sally was a joyful, hardworking person. She brought humor, friendship and an unselfish spirit of rolling up her sleeves to get the public's work done," said Maureen F. Gorsen, Director of the Department of Toxic Substances Control. "I loved working with Sally and am very saddened that she will no longer be working beside us to protect the environment."

Sally is survived by her husband Mike Gardner, who works in DWR's Division of Environmental Services, daughter Brooke Dayton, and stepson Grant Gardner. ■

### Joachim (Jakim) Harry Tonn



**Joachim Tonn**, a retired DWR Associate Hydroelectric Power Utility Engineer, passed away at the age of 75 on December 27.

Joachim joined DWR in 1961. He worked on the Plant Maintenance Plan for all of the State Water Project's power and pumping plants. Joachim also received a letter of

commendation on the establishment of a Power Standards Lab.

During his last years as an electrical engineer for DWR, Joachim worked for the Power Cost Allocations Section of the State Water Project Analysis Office. He monitored statements for power bought and sold, and also advised Accounting on the technical aspects of power purchases. In addition to preparing the Plant Maintenance Plan for all of the power and pumping plants on the SWP, he received a commendation from Aerojet General Corporation on a proposal that he created for the establishment of a Power Standards Lab. Joachim was also the German interpreter for DWR.

"I had the honor and privilege of working with Mr. Tonn at DWR during the late 1970's into the 1980s. He was a man of exceptional integrity and ethics and was a wealth of knowledge," said Sonny Fong of DWR Executive Office. "He served as an inspiration to me in my early career with DWR and I have many fond memories of him and the group of 'old engineering geeks' that took me under their wings. It was because of him and these others that I decided to stay in state public service and carry on with the tradition of helping and mentoring others with integrity, honesty and ethics."

Joachim, who was born in Germany, also lived in Canada and California. He loved studying the Bible. Physics and exploring alternate energy sources were his hobbies.

After his DWR retirement in 2003, he moved to Roseburg, Oregon with his wife Mary.

He is survived by his wife, two daughters, a son, and 10 grandchildren. ■

# Obituaries

## Fran Letcher



**Fran Letcher**, retired Office Services Supervisor II, passed away at the age of 69 on May 3, 2009.

During Fran's 30 years of State service, she worked for the Departments of Motor Vehicles and Transportation. Her 21 years with DWR began in DWR's Executive Office's Word Processing Unit as a

Senior Word Processing Technician and later Office Services Supervisor II.

"I started working with Fran in 1990 and she was a delight to be around, was a wonderful supervisor, a great resource of information, and always had a smile on her face," said Ramona Malinowski of Executive. "I will always have pleasant memories of her while working in DCU and DWR."

She later joined Management Services as a Business Services Officer I until her retirement in 2001. Her assignments included refurbishing of the Seventh Floor of the Resources Building and transitioning from Fox Pro to AIS.

"Fran was a hard working dedicated employee," said Susan Lemmon of Facilities Management. "She was responsible for the Department's Property Inventory for many years and she ran the movers too! She and her staff would go out to all the sites and do physical inventories of the Departments property and this was not an easy job. It was a very tiring and physical job and she was right there with her staff."

Fran, who was born in Roxbury, Massachusetts and resided in Newcastle since 1973, was a member of the ladies auxiliary of the Knights of Columbus and the Red Hat Society. She loved bowling.

Fran is survived by her husband of 46 years, Jim, three sons, and five grandchildren, and one great grandchild.

"When I was new and totally green at facilities, she was always extremely generous with her knowledge and to share her experience," said Penny Wells, former Facilities Management employee. "As both a coworker and, later, an employee, I found her to be a dedicated worker and a devoted family woman. I'll miss exchanging yearly Christmas greetings with her."

## Vi Banda



**Vi Banda**, a DWR retired Associate Governmental Program Analyst, passed away at the age of 76 on February 1, 2009 in Sacramento.

Vi's 28 years of State service began as an Intermediate Typist Clerk for the Department of Education. A year later, she joined DWR as Secretary for Design and

Construction's Equipment and Materials Section. Her next assignments were for the Drought Center and the Floodplain

Management Branch. Before her retirement in 1995, Vi coordinated the Division of Local Assistance's program control and budget.

"I worked with Via when she was employed in the Division of Local Assistance as a Associate Governmental Analyst. She worked on the Division's budget. She had strong work ethics and did excellent work. She was a very caring and thoughtful person," said Dorothy Benjamin of DWR's Public Affairs Office.

Vi also volunteered for the UCSEC campaigns and smoking cessation training classes.

Vi is survived by four children, nine grandchildren, six great-grandchildren. ■

DWR NEWS/People  
Public Affairs Office  
1416 Ninth Street, Room 252-21  
Sacramento, CA 94236-0001

STATE OF CALIFORNIA • DEPARTMENT OF WATER RESOURCES

# **DWR Mission** | *Statement*

To manage the water resources of California  
in cooperation with other agencies, to benefit  
the State's people, and to protect, restore, and  
enhance the natural and human environments.