

## INTRODUCTION

The Water Conservation Field Services Program (WCFSP) has become an integral part of the Mid-Pacific Region's (Region) water conservation efforts. The Region has placed a strong emphasis on water conservation as a result of mandates detailed in the Central Valley Project Improvement Act (CVPIA). The evolution of Reclamation's mission to include resource management as a prime objective also supports programs such as the WCFSP. The WCFSP has provided an incentive-based vehicle for the Region to assist contractors and others in meeting their water conservation planning obligations and implementing effective measures to optimize the use of our limited water resources.

The WCFSP also compliments another Region program which employs the expertise of California Polytechnic State University at San Luis Obispo's Irrigation Training and Research Center (ITRC). This successful program provides direct technical assistance to Reclamation contractors and has helped identify areas where WCFSP resources should be directed.

It is anticipated that a large portion of the WCFSP targeted for California's Central Valley and coastal areas will be integrated with the CALFED Bay-Delta Program (CALFED Program). The CALFED Program, initiated in 1995, is a consensus-based, cooperative effort involving 15 State and Federal agencies with management and regulatory responsibilities in the Bay-Delta. It is a collaborative effort with Stakeholders: urban and agricultural water users, fishing interests, environmental organizations, businesses, and others contributing to the problem-solving/decision making process.

After several years of scoping and completion of environmental documentation, the CALFED Program is ready to enter the implementation phase. A key component of this program is Water Use Efficiency which includes agricultural, urban, and environmental water conservation/demand management activities. The program calls for water conservation planning and will rely on incentive based assistance to accelerate the implementation of Best Management Practices (BMP) identified in the Water Management Plans (Plans). The WCFSP serves as a model for this type of assistance and the expansion of this program can be a key element of the federal portion of the implementation package.

Other water use efficiency efforts in the Region focus on other environmentally sensitive areas. In the Klamath Basin Area Office (KBAO), water conservation efforts are geared toward reducing water quality impacts and increasing in-stream flows for fisheries along the Klamath River. In the Lahanton Basin Area Office, water conservation efforts focus on reducing diversions from local rivers to allow for improved fisheries and wetlands habitat.

Water conservation and demand management will continue to be a priority in the Region. Even if additional storage and conveyance facilities are built in the future, water conservation measures will be a necessary complementary effort to meet our increasing environmental, agricultural and urban water demands.

## **WATER CONSERVATION FIELD SERVICES PROGRAM**

Reclamation has concluded the third year of its locally based WCFSP. The program is designed to provide direct technical assistance and funding to water districts and other water users to encourage water conservation; assist water agencies to develop and implement effective water management and conservation plans; coordinate with state and local conservation program efforts; and generally foster improved water management on a regional, statewide, and watershed basis.

Approximately \$1.7 million was spent region wide on the WCFSP for grants and cooperative agreements. Participating agencies invested \$3 million in these projects, with the total funding for all of the activities under this program at approximately \$4.6 million. In other words, for each dollar of WCFSP expenditures, two dollars were spent by other sources to implement water conservation activities.

### **AREAS OF EMPHASIS IN THE WCFSP INCLUDE:**

- \_ Water Management Planning
- \_ Conservation Education
- \_ Demonstration of Innovative Technologies
- \_ Implementation of Conservation Measures

#### ***Water Management Planning***

Water Management Planning is required of most water service contractors under Section 210(b) of the Reclamation Reform Act of 1982 (RRA). Only a handful of districts in the Region have not fulfilled this requirement. The Area Office water conservation coordinators contacted each of those districts that did not meet the requirement in Fiscal Year 1999 (FY) to offer technical assistance in completing their plans. In several cases, financial assistance was also provided to the contractors to assist them in this effort. It is anticipated that all Plans will be complete by the end of FY 2001.

Meanwhile, Reclamation staff revised the criteria for evaluating water management plans to meet CVPIA requirements. During 1999, ten contractors will be revising their water management

plans (as is required every 5 years). In 2000, another 30 contractors will be involved in this activity. Reclamation staff are providing assistance for this process.

### ***Conservation Education***

Conservation Education was spotlighted in FY 1999. The American River Education Center at Folsom Dam was opened in May 1999 which offers information and interactive displays on water conservation. Other centers (the Sacramento Discovery Center, Six Flags-Marine World, and the Friant Visitor Center) have received support during the year.

Funding was provided to the California Department of Water Resources to update and expand their California Irrigation Management Information System (CIMIS) weather network which has served as a valuable resource for agricultural and landscape irrigation scheduling.

### ***Demonstrations of Innovative Technologies***

Demonstrations of Innovative Technologies concentrated on providing technical assistance and funding for pilot studies to demonstrate and evaluate programs for implementing urban BMPs. Other demonstrations included hot water on demand systems, water and landscape measurement, and hand held data loggers for tracking water deliveries and assisting with customer billing.

### ***Implementation of Water Conservation Measures***

Implementation of Conservation Measures continues to increase. As Plans are finalized, more practices are identified for implementation. Two main areas of focus in 1999 were on assisting on-farm irrigation system evaluation programs and water district canal monitoring and automation. Several variable frequency drive units were funded to allow greater flexibility in pumping water. Other areas of assistance were directed toward the implementation of canal lining, water measurement devices, and Supervisory Control and Data Acquisition (SCADA) systems.

## **PARTNERSHIPS-BRIDGING THE HEADGATE**

A key to the long term success of the WCFSP is the establishment of partnerships. This locally based program was never intended to function in a vacuum. From its inception, the WCFSP stressed cooperative programs that included working with other groups while obtaining "Buy-in" by Reclamation contractors through joint efforts and cost share agreements. Over the last 3 years, partnerships in the Region have continued to flourish. Water Conservation centers have been established in Folsom, Red Bluff, and Shasta through cooperative efforts between State and Federal agencies, local water districts, universities, and stakeholders.

The CALFED program should increase the number of partnerships in the near future. Also, last years Memorandum of Understandings (MOU) between the NRCS and Reclamation and the NACD and Reclamation has institutionalized the cooperative nature of the WCFSP. As a result of the MOU's, Reclamation staff has increased their interaction with water management counterparts in the other agencies and have discovered areas of common interest. The result has been greater leveraging of resources and skills.

## **CENTRAL CALIFORNIA AREA OFFICE**

### **Local Program Description**

The water service area of the Central California Area Office (CCAO) consists of the Solano Project and four distinct and separate parts of the Central Valley Project (CVP): the Folsom Unit, the Sly Park Unit, the Auburn-Folsom South Unit of the American River Division; and the New Melones Unit of the East Side Division. The CVP service area contains about 9,000 acres currently receiving irrigation water, while the Solano Project has 62,000 acres in irrigation. Current annual deliveries average about 14,600 acre-feet (AF) of irrigation water and 45,700 AF of municipal and industrial (M&I) water by the Central Valley Project features and 168,000 AF of irrigation water and 9,000 AF of M&I water for the Solano Project. Within the CCAO, approximately 25 water service contracts are administered.

Stretching from the foothills of the Sierra Nevada mountains west to the Pacific Ocean, the CCAO has an enormous diversity in types of soils, climates, crops, wildlife, recreation, and size of towns and cities. Some of the fastest growing areas in the nation are located within the boundaries of the CCAO. This population growth and natural diversity increases the pressure on the supply of both surface and ground water. The passage in 1992 of Public Law 102-575, Title 34, the Central Valley Project Improvement Act, required that 800,000 acre-feet of CVP yield be diverted from traditional uses and dedicated to environmental restoration purposes. This even

further depletes already limited water supplies in the American River and the East Side Divisions.

Because of the competing water interests described above and the uncertainty of any future construction of large water projects, there is a need to manage and stretch the available existing water supplies to meet M&I, agricultural, recreational, and environmental needs. Education, flexibility, and demonstration of new technologies will be the keys to meeting all the water needs. It is our goal through the Field Service Program to lead the way in meeting these needs and to work as partners with all the different water interests.

### Goals

The primary goal of CCAO's Program continues to be improving urban and agricultural water management thereby maximizing the benefits of the limited water resources in the area. With a rapidly growing urban population and environmental concerns about further water development in the area, it is critical that current resources are well managed.

The CCAO has a greater percentage of urban agencies in its service area than any other area office in the Mid-Pacific Region. The range of water conservation experience includes districts which are national leaders in the field to districts that have not yet undertaken the most basic water conservation measure (i.e., metering and volumetric pricing). The CCAO has a unique opportunity to cooperate with the pioneers in the urban water conservation field in further developing and refining water conservation programs, while helping less experienced districts develop their programs.

### **Objectives**

The WCFSP comprises the following objectives designed to achieve the goal of improved water management.

- *Planning Assistance* which provides technical assistance and financing to districts and groups preparing water management plans.
- *Public outreach* which provides education and training to district personnel and customers.
- *Demonstrations of Best Management Practices* which are tailored for implementation in the area.
- *Implementation of conservation measures* through financial assistance and partnerships to accelerate the adoption of Best Management Practices.

## **Activities**

### *Planning Assistance*

Some districts in the area require assistance in completing their water management plans. The Program will provide funds and technical assistance through Reclamation staff and/or consultants to these districts to assist in plan development. In addition, some districts are in the process of updating their plans under the 5 year update requirement and assistance will be provided to these districts to update and continue to implement their water management plans.

### *Public Outreach*

The large population base in the area provides a significant opportunity to educate the public on water conservation. Education and training efforts will target schools, districts and communities. Included in this activity will be funding for the CCAO public outreach specialist to expand the program of outreach to community organizations and schools. Funding will include public education and outreach materials. In addition, the American River Water Education Center at Folsom Dam was dedicated on May 26, 1999 and is rapidly becoming a focal point for the area. Visitorship is expected to grow from 13,000 visitors/year to 50,000 visitors/year within 2 years. A water conservation display in conjunction with the existing archeological, wildlife and natural history displays was completed at New Melones Dam's visitor center. Work this year will focus on xericapes, water efficient irrigation methods, and development of an outreach program.

### *Conservation Demonstrations*

The area office will continue to work with local water districts and school districts in the design and implementation of a water auditing program. A curriculum is being developed for second and third grade students which will allow students to audit all aspects of water in their lives including the amount they use, the quality of the water, where it comes from and how to use it wisely. Materials will be developed which prepare the students to perform a water audit of the school facilities. The program will also include a module in which students audit the uses of water at home. The curriculum will incorporate science and math skills which are part of the students overall curriculum. This demonstration program will provide the students and their parents with a greater appreciation of how they use water and the actions they can take at home to use water more efficiently. Similar programs have been implemented in other areas outside the Mid-Pacific Region. Materials from these programs may be altered to tailor a program to meet the needs of the local school district. The program will provide an example which can then be shared with other school districts in the region. The development of the American River Water Education Center at Folsom Dam will allow for further development of this program.

### *Conservation Measure Implementation*

Cost sharing will be provided to assist districts in implementing BMPs identified in their water conservation plans. The WCFSP will provide urban districts with financing (rebates) for landscaping modifications, interior and exterior audits, and other similar BMPs. Program funding may be used for restoration and development of an integrated wetlands/native landscape at a cleaned up shooting range. The project will be included as public outreach for visitors at the new American River Water Education Center at Folsom Dam.

## **KLAMATH BASIN AREA OFFICE**

### **Local Program Description**

#### ***Water Management Problems***

The Klamath Project provides water to over 240,000 acres of farmland, 2 national wildlife refuges, endangered species and meets Native American Trust Assets both in California and Oregon. In an average water year the project supply will not be able to meet all water needs.

#### ***Issues and Opportunities***

The Klamath Basin is in the process of a general stream adjudication. During the interim, Reclamation is developing a long term operation plan which will provide for more certainty in water supplies.

The Klamath Basin Area Office hired a full-time Water Conservation Specialist the first of the year. With the new person on board we expect the program to gain momentum in the promotion of water conservation with Reclamation Contractors and others interested in the program.

### **Goals**

- Increase water supplies
- Encourage Irrigation Districts in the development and implementation of water management plans
- Encourage more efficient use of water
- Improve water supply reliability
- Conserve water for other uses

### **Activities**

The Klamath Basin Area Office is working with irrigation districts through grants from the Water Conservation Field Service Program (WCFSP) or through direct technical assistance to encourage the development of water management plans and implementation Best Management Practices (BMP).

On October 31, 1998, Reclamation completed the purchase of Agency Lake Ranch. The Ranch enhances the storage capacity of Upper Klamath Lake by allowing for the delivery of approximately 7,000 Acre/Feet of water. The feasibility of increasing storage at Agency Lake Ranch is being studied, as well as increasing storage at other facilities on the project.

Through a cooperative agreement with the Oregon Department of Water Resources and the US Geological Survey, a groundwater study is being conducted in the basin. The study will help determine availability of alternate source of water during water short years.

In cooperation with the Irrigation Training and Research Center, technical assistance for design of management practices have been provided to the districts and on site training is planned for the future.

The Klamath County School District and the Klamath Falls City School District have been contacted and material provided to promote water conservation in the schools.

### ***Conservation Planning***

Ten Irrigation Districts totaling 148,358 acres are required to have a water conservation plans. All districts have been contacted either individually or through a public meeting to discuss development of water management plans. Two districts have received on site assistance in the development of plans and 4 have received grants under the Water Conservation Field Service Program to hire a consultant to develop management plans.

### ***Conservation Education***

Klamath County School District and Klamath Falls City Schools District have been contacted and Water Conservation Calenders published by the International Office for Water Education have been provided in attempt to stimulate interest for a poster contest. Also, Reclamations home page, "AWatershare" was provided which has teacher lesson plans for water conservation.

In cooperation with the Klamath Soil and Water Conservation District and the Fish & Wildlife Service, funding was provided develop a comprehensive directory of natural resource agencies and organizations in the Klamath River watershed.

### ***Demonstration of Innovative Conservation Technologies***

In cooperation with the Habitat for Humanity and Center for Irrigation Technology a grant was provided to develop water efficient landscaping for 4 homes as a demonstration project of innovative conservation technologies and measures.

In cooperation with the Oregon Cooperative Extension Service, the first AgriMet station was installed in the basin and training provided. The station will provide local farmers with Evapotranspiration (ET) data which they can use to improve irrigation scheduling to meet crop irrigation needs. Additional sites are being investigated.

### ***Implementation of Conservation Measures***

In cooperation with Horsefly Irrigation District, Cloverleaf Watershed Council, Klamath Soil & Water Conservation District and the City of Bonanza a grant under the WCFSP was provided to pipe approximately 2,640 feet of open canal. The estimated losses are 20-30% on this section of canal or 651 to 977 acre-foot losses.

In cooperation with Langell Valley Irrigation District, Irrigation Training and Research Center, a grant under the WCFSP was provided to install a Replogle flume to improve water management.

With technical assistance from the Provo Office, one gate was automated and 5 real-time measurement devices were installed on the rivers and reservoirs to improve operations.

In cooperation with the Natural Resources Conservation Service and the US Forest Service, 2 Snow Telemetry (SNOTEL) sites were installed to improve operations at Gerber and Clear Lakes reservoirs. Additional sites will be investigated to improve operations at Reclamation facilities.

### **Program Outlook**

With continued funding of the WCFSP we hope to expand our program as we gain trust with Reclamation Contractors and others interested in water conservation. We will continue to work with districts in the development and implementation of water conservation\management plans. We hope the districts will share any information gained from participation in the Program. We anticipate completion of all water conservation/management plans by 2002. All resources will be dedicated to achieving this goal and we anticipate funding to continue at present levels.

### **LAHONTAN BASIN AREA OFFICE**

### **Local Program Description**

The Lahontan Basin Area Office (LBAO) covers most of Northern Nevada and portions of California and encompasses an area of 80,000 square miles. Areas of emphasized interest include the Lake Tahoe Basin, Truckee River Basin, Carson River Basin, Humboldt River Basin, and the Walker River Basin. Reclamation projects exist in the first four listed basins.

Nevada has been described as the driest state in the nation in terms of rainfall. The basins described above reside entirely in the Great Basin and terminate in desert lakes or wetlands. There are no drainage to the ocean. In their natural state, the rivers are ephemeral with short periods of high runoff and long periods of little or no flow and are subject to frequent and prolonged drought. The water supply is dependant on mountain snow pack and storage facilities.

The combination of rapid population growth, agricultural uses, threatened and endangered species, and Native American uses of water has produced a contentious and litigious atmosphere concerning the use of water. These issues make a water conservation program of prime interest and importance in Northern Nevada and present unique and challenging opportunities in the implementation of a water conservation program.

In 1988, the United States developed Operating Criteria and Procedures (OCAP) for the Truckee-Carson Irrigation District (TCID), operators of the Newlands Project. That same year, because of the development and implementation of the OCAP, Reclamation established a field office in Fallon, Nevada, on the Newlands Project. The purpose of the Fallon Field Office was, "Afor the sole purpose of providing technical and professional guidance to the Truckee-Carson Irrigation District in all matters pertaining to water management in the Newlands Project." When the WCFSP was established in 1996, it was only natural that the responsibility for the program in the LBAO would be in the Fallon Field Office.

The LBAO has responsibilities for four Reclamation projects; Truckee Storage, Washoe, Newlands, and Humboldt Projects. The Washoe Project is a single purpose project operated for the benefit of the endangered Cui-ui fish by regulating Truckee River flows. As such, there is little opportunity for water conservation activities on this project and is, therefore, not included in the LBAO WCFSP. Opportunities for improved water management within the LBAO area of responsibility are being emphasized in the following projects.

### ***Truckee Storage Project***

This Project consists of Boca Dam and Reservoir, which are operated by the Washoe County Water Conservation District (WCWCD). Water is distributed through a number of ditch companies to water-right holders. These ditch companies are not under the administration of the District, making it particularly difficult to develop a meaningful water conservation plan. The District's sole responsibility is the operation and maintenance of Boca Dam and Reservoir. The District has shown a willingness to examine water conservation opportunities on a limited basis for the ditch companies but are wary of taking on responsibility for the ditch companies. The following issues are some that Reclamation hopes to be able to address in the WCFSP:

- Quantifying water volumes
- Infrastructure issues associated with an old water delivery system
- WCWCD's water management process
- Conversion of agricultural water use to M & I water use
- Uncoordinated operation of several ditch companies

### ***Humboldt Project***

This Project consists of Rye Patch Dam and Reservoir, Battle Mountain Pasture, Pitt-Taylor reservoirs, and the distribution system, which are operated by the Pershing County Water Conservation District (PCWCD). Water conservation issues to be addressed are:

- Water measurement
- Water control
- Water conservation education for the PCWCD and the public
- Any inefficiencies with respect to water management

### ***Newlands Project***

The Newlands Project conserves water from the Carson and Truckee Rivers for irrigation in the Lahontan Valley. Because of inter-basin diversions of water, there are several competing interests for the limited water resource including Native Americans, project farmers, and urban interests. The Truckee River terminates in Pyramid Lake which is wholly within the Pyramid Lake Indian Reservation. Pyramid Lake is the home of the threatened Lahontan cutthroat trout and the endangered Cui-ui fish. These species figure closely into the culture of the Pyramid Lake Paiute Tribe. The Carson River terminates in the Stillwater Wetlands which are downstream of the Newlands Project. These wetlands are a part of the Pacific Flyway and are of international importance.

As a result of the competing demands, the various stakeholders and interested parties have not been able to reach agreement on how to best manage their water resources. Government intervention has resulted in a highly regulated project. The Adjusted Operating Criteria and Procedures (developed and implemented by the United States) require target efficiency levels be achieved in the delivery of the irrigation water. This efficiency imposition was implemented to reduce water diversions from the Truckee River, thereby making more water available for threatened and endangered species.

Because of the government-imposed regulations and the implications of the Endangered Species Act, the WCFSP is used extensively to assist the Newlands Project in water conservation and management issues. Many of the issues and solutions to be addressed by the WCFSP for the Newlands Project will likely be applicable in the other projects in the LBAO and the MP Region. Some of the issues to address include:

- Developing a water conservation plan pursuant to the O&M Contract and the MP Criteria.
- Developing a pricing structure for the delivery of water that is in accordance with the O&M Contract.
- Implementing a program for measurement of water delivered at headgates.
- Offering educational programs for both the public and the district.
- Improve control of water.
- Provide incentives for water conservation.

### ***Public Education***

One of the biggest institutional barriers to achieving water conservation goals in the LBAO is the dissemination of information on water conservation and management and its benefits to water users and the general public. As a result, education is also emphasized in the LBAO WCFSP.

## **Goals**

Goals that cut across all districts include continuing partnerships with the Natural Resources Conservation Service, Resource Conservation Districts, and with educational partners such as the State of Nevada, Water Education Foundation, and The Water Course at Montana State University. Goals for each of the districts follow.

***Washoe County Water Conservation District***

- Conclude assessment studies by Cal Poly ITRC.

***Pershing County Water Conservation District***

- Assist PCWCD in implementing an improved water measurement program.
- Explore water control strategies.
- Implement recommendations of Cal Poly ITRC assessment.
- Provide educational programs.

***Truckee-Carson Irrigation District***

- Complete water conservation plan and assist in implementation.
- Complete charging structure study and assist in implementation.
- Implement water measurement program.

**Activities**

Specific activities which allow us to meet our goals follow.

***Education***

- Work with partners to continue education activities.

***Washoe County Water Conservation District***

- Contact and work with WCWCD to have Cal Poly ITRC evaluate specific items as outlined in their May 9, 1998 report. The actions include requesting an agenda item on the Board of Directors meeting, presenting the findings of the last evaluation, outlining the proposed actions, and implementing the study measures.

***Pershing County Water Conservation District***

- Complete 5-year update of water conservation plan.
- Continue to work with district personnel to train them in the design of water measurement devices, instruct in water measurement techniques, facilitate technology transfer, and make field trips to evaluate specific water management issues. The Fallon Field Office works with district staff in teaching data gathering techniques for measurement stations; installing and teaching the use of computer design programs for broad crested weir designs; and providing information on educational opportunities.
- Work with district personnel to identify measurement points and develop plans for the installation of measurement devices.
- Work with district personnel to identify locations to evaluate water control problems and install equipment to gather data for evaluation.

### ***Truckee-Carson Irrigation District***

- Work with district personnel to complete and implement water conservation plan.
- Work with district personnel to complete and implement the charging structure.
- Work with district personnel to implement water measurement study completed by Cal Poly ITRC.
- Work with district personnel to implement demonstration and water conservation measures.

All districts were informed of their water conservation planning status and requirements through letters, telephone conversations, and visits by Reclamation personnel. Assistance has been offered through a variety of means including explanations of requirements, review and comments on plans, and explanations of guidance and requirements. Every district was visited, requirements of the RRA was explained, and opportunities available through the WCFSP were presented.

Progress is slow in encouraging districts to develop water conservation plans. There has been general resistance to the requirements and guidance offered. Some progress has been made through contractual requirements with TCID and through small steps and communication with the PCWCD.

The TCID is currently developing a water conservation plan pursuant to the requirements of the O&M Contract between the district and Reclamation. Although progress has been made, there are still some items related to the water conservation budget and water measurement implementation that need to be addressed.

This office has worked extensively with TCID to implement several measures. These include:

#### ***Education***

- Implement Internet web page.
- Water measurement device design training.
- On-site ditch rider training.

#### ***Implementation***

- Telemetry at the L-Line Headworks
- Telemetry at the S-C6

#### ***Planning***

- Investigate improvements to Carson River Measurement
- LBAO has met with TCID at least 13 times during FY99 to discuss and work on a charging structure and water conservation plan.

Work with the PCWCD has included the following.

#### ***Education***

- Water conservation education.

#### ***Implementation***

- Construct two water measurement devices.

- Purchase computer and associated software.
- Construct gated structure at the ABig 5" diversion point.

***Planning***

- LBAO has met several times with PCWCD to plan work.

Other cost-shares that are not district-specific but address water conservation in the area include:

- Water Education Foundation to update documentary on the Truckee River.
- Lahontan Conservation District and the NRCS for a mobile laboratory.
- University of Nevada, Reno for developing a model to analyze charging structures.
- The Water Course at Montana State University for a special issue of Wild Outdoor Magazine.
- The State of Nevada for a Water Education Calendar, Nevada Water Resources Map, and Project WET.

## **NORTHERN CALIFORNIA AREA OFFICE**

### **Local Program Description**

The Northern California Area Office's (NCAO) Program is focused around the Sacramento River System and tributaries from Shasta Dam to the West Sacramento area. Water management concerns associated with this area relate most directly to water management efficiency, planning, training, education, data development, technical development, reporting, implementation and motivation.

Northern California has historically had an abundant water supply. Both the Central Valley Project (CVP) and the State Water Project have constructed flood control storage facilities in the NCAO region which allow for diversion of water to water-deficient areas of the State. Prior to the early 1980's there appeared to be surplus supplies available. However, with the increased mandates of the CVPIA and the Bay-Delta Outflow requirements, coupled with decreased diversions from the Trinity River, and the consequences of the Endangered Species Act the Sacramento River is, at times, hard pressed to meet all of the competing demands for water.

Northern California is a large geographic bowl with an outlet at the San Francisco Bay-Delta. Subsurface water is of good quality in most locations. Consumptive use is predominantly various forms of Evapotranspiration. Because of the high degree of connectivity between the surface and subsurface water systems many water managers contend that agricultural water conservation in Northern California can only be accomplished by reduced consumptive use. Opportunities exist to improve river and canal management. The water management problems facing the Northern California area are issues of identifying real water conservation as compared to paper water conservation. To do this we must improve monitoring, water management, and water use efficiencies.

The area water contractors are divided into two categories. The first is comprised of contractors with CVP water service contracts and, secondly, Sacramento River Settlement Contractors (Settlement Contractors) who have contracts with combined base supply and project water supplies. Base supply is a contracted quantity that accounts for each Settlement Contractor's senior water right. Project supply, on the other hand, represents supply developed by the CVP.

The water service contractors are actively working with water conservation staff on planning activities, demonstration projects, training, and public education programs. Contractors are showing increasing interest and willingness to work cooperatively, as we continue to offer assistance through the WCFSP and Efficiency Incentive Program (EIP) to fund planning and technical assistance programs.

The Settlement Contractors make up a large portion of the NCAO contractors. Among this group, there has been concern about the applicability of the CVP water conservation planning criteria for the development of their management plans. As a result of negotiations and the signing of an MOU, the requirement to develop and implement plans has been postponed until the year 2000. Nine of the Settlement Contractors are working together in cooperation with Reclamation to complete the regional planning process and provide water management plans.

### **Goals**

The NCAO objectives for the WCFSP program are to encourage water contractors to establish plans and to implement water efficient management practices. This will be done by introducing water contractors to new techniques of efficient water management through demonstrations, education, and financial assistance. The WCFSP will support on water efficiency education through partnerships with organizations such as Sacramento River Discovery Center, Resource Conservation Districts (RCD), Natural Resource Conservation Services (NRCS), local school organizations, and other resources as available. The WCFSP are also working internally to encourage and educate Reclamation staff on the importance of water conservation and water use efficiency.

### **Activities**

Reclamation offers plan preparation and technical assistance to water contractors and holds meetings to discuss programs and progress. Specific activities include the following.

- Work with educational groups such as the Sacramento River Discovery Center to provide teacher training on project Water Education for Teachers, and offer water conservation teaching programs for the classes of students that visit the Discovery Center.
- Work with California Polytechnic State University at San Luis Obispo, Cal Poly ITRC, to provide professional training and assistance on canal management, hand held data recorders, SCADA equipment, and software recommendations.
- Offer cost-share grants to introduce, demonstrate, or implement measurement and monitoring equipment, new technologies, or technologies that are new or improved water management techniques to the water contractor.
- Work with the NRCS and RCD offices to partner in conservation activities
- Work with Reclamation staff on facility fixture upgrades that provide water conservation and are observed by the public (prioritized by conservation effectiveness).

### ***Planning Assistance***

Under NCAO's jurisdiction, 14 water contractors are required to provide water conservation plans, and 14 plans are in place and being implemented (See summary table 1 and 2).

Reclamation staff have met with district managers and provided presentations for available technical assistance in the annual planning process. Most existing plans will be due for the 5-year update during the year 2000. NCAO has contracted with a water conservation planning specialist to assist water contractors in revising their plans, upon request.

In September 1998 and again in March 1999, after many meetings with the district manager, the NCAO Water Conservation Coordinator was invited to, and made a presentations to the Orland Unit Water Users Association (OUWUA) board of directors. OUWUA is the only contractor in the NCAO service area which does not fall under CVPIA requirements. The board has voted and decided to prepare a Plan per CVPIA guidelines and initiate implementation upon completion. Discussions with the OUWUA manager indicate the success of this program will be a result of

available technical and financial assistance in the planning and implementation phases. Planning assistance has been scheduled and plan completion is anticipated during FY 2000 year. OUWUA is one of the oldest reclamation water projects which dates back to from the early 1900's.

The Shasta County Water Agency applied for and received funding assistance to complete their Shasta County Water Resource Master Plan. Funding will be used to model the basin and develop alternate sources of supply for the land uses therein.

### ***Public Outreach/Partnerships***

Last year, a cost-share grant was provided to Corning Water District, Thomes Creek Water District, and Proberta Water District to develop a comprehensive area water management plan for the utilization of surface and ground-water resources to insure long-term economic viability of irrigated agriculture within their service areas. This included facility, service area and water resources inventories, alternative resources management strategies, preferred management plan and implementation strategies. A draft Plan has been developed and is under consideration for final acceptance.

As a result of the MOU, Settlement Contractors continue working on their planning efforts. These contractors have been informed by letter and through personal conversations of the WCFSP assistance available and that assistance is prioritized based on the development of an acceptable water management plan. The NCAO Area Manager has been working directly with the contractors to facilitate the production of the regional plan. Once implemented, the regional plan should result in a significant area along the Sacramento River being joined into the planning effort during FY 2000.

### ***Conservation Education***

Reclamation staff has worked extensively with the Discovery Center staff in Red Bluff, where approximately 5,500 students and 2,500 adults have been presented with water education lessons, materials, and presentations. Thirty teachers were given a 2-day curriculum of watershed training, including the Project WET program which they can include in their school programs.

Staff members worked with TSC presentation's group this year to develop an educational game called Water Force 2020. The game is in its final development stages and a Beta version is under review. The game was conceived to challenge young people to consider how to conserve water and prevent water shortages in urban settings. The game concept is based on time travel from the year 2020 back to the present to help resolve future water shortages. Water Commando's get ready...the game is designed to be offered to schools on CD for mass distribution. Initial settings are for California, but can be adapted to other states.

The NCAO staff have worked with several districts to provide educational materials and training to their water users. Bella Vista Water District and the City of Redding received grants this year to provide water conservation materials, presentations, and training to their water users. Bella Vista Water District has developed a Water Conserving Garden and Landscape demonstration for the education of the public on low water use plants in the Redding area.

Celebrate Water >99 - The first annual "Celebrate Water" festival was held at the Shasta Mall, sponsored by the City of Redding Public Works, during the second week of May. Thousands of Redding area residents benefited from the demonstrations, leak detection kits, low flow shower heads, and other information, expertise and useful gifts that were shared with the public. Participants included the City of Redding, Clear Creek Community Services District, Bella Vista Water District, Shasta Community Services District, and The City of Shasta Lake, Reclamation, California Department of Fish and Game, National Fish and Wildlife Service, and other water users. The groups banded together and "took over the mall" for a week of water education and information sharing.

Cal Poly ITRC staff, under contract with Reclamation, has provided water management training and assistance services to Glenn Colusa Irrigation District, the Tehama Colusa Canal Authority, Reclamation Districts 108 and 1004, Kanawha and Glide Water Districts, Maxwell Irrigation District, Orland Artois Water District, Westside Water District, Reclamation staff at the Red Bluff Diversion Dam, Princeton-Cordora-Glenn Irrigation District, Provident Irrigation District, and Anderson-Cottonwood Irrigation District. Training sessions provided district staff with information on water management techniques, water measurement devices, canal management, SCADA equipment, information collection equipment (hand held recording devices for measuring equipment), and software development options for effective data management.

### ***Conservation Demonstrations***

Demonstration SCADA projects have been implemented at Reclamation District 108, M&T Ranch, Provident Irrigation District, Princeton-Cordora-Glenn Irrigation District, Reclamation district 1004, Westside Water District, Orland Artois Water District, and at the Reclamation facilities at the Red Bluff Diversion Dam. These sites have provided demonstrations of real-time monitoring, data acquisition and system automation that are available at reasonable prices and with systems that are non-proprietary. As a result of the demonstration, Reclamation District 108 is moving into Phase III of its project and putting monitoring equipment on its canals and automating its pumps and gates. As a result of these demonstrations, additional districts are considering installation of the SCADA programs and equipment.

New demonstration projects are underway at Kanawha, Glide, Westside, Orland Artois, Corning, and Colusa County Water Districts. These projects involve hand held data recorders for district

ditch tenders (meter readers). With the requirement to measure water to customers, comes the burden of data management. The first applications of (scanner) hand held data recorders in this area has been initiated; results are coming in, and the reports are good. As these recorders meet expectations, the data is being gathered and transferred electronically providing greater accuracy in records, and expanded data gathering and transfer capabilities. A part of the hand held recorder project at Kanawha and Westside Water Districts was the development of a district software program for managing measurement data and integrating it with crop information to provide water use efficiency reports. This program is up and running although still being improved and is available through the vendor that worked with the districts to develop it. It was developed in a cooperative effort between Cal Poly, Kanawha Water District, Westside Water District, and Reclamation as a result of the efforts from this program.

Open House - Cal Poly ITRC, Reclamation, Westside Water District, and Reclamation District 108 sponsored an open house that was held onsite at Reclamation District 108 and Westside Water District on June 24, 1999, to show-off the progress of the SCADA and hand held recorder programs. Originally 20 invitations were sent out to local districts to encourage interest. By June 23, 1999, over 70 RSVP's had been received from all over the western states. At the open house, 24 water districts were represented from California, Arizona, Texas, and Oklahoma. Sixty-Five people (not counting the sponsors) were in attendance and spent the day through presentations and hand-on demonstrations learning about the technology improvements.

## **SOUTH-CENTRAL CALIFORNIA AREA OFFICE**

### **Local Program Descriptions**

The South-Central California Area Office (SCCAO) includes more than 2.5 million acres of irrigated farmland. Served by Reclamation's Central Valley, Monterey, Ventura River, and Cachuma Projects. These Projects cover 80 service contractors with allocations of nearly 6 million acre-feet of water.

With its proximity to large urban areas such as the San Francisco Bay region and the City of Fresno in the heart of the region, the importance of urban water conservation is becoming much more focused. The Central Valley has the fastest growing population in California, therefore, demand for M&I water will continue to dramatically increase; because of this trend, the WCFSP will address this area more in the near future.

The west side of the Central Valley must cope with reduced water supplies, high water tables, salinity problems, and drainage disposal. Urban coastal projects which include Cachuma, Ventura River, and Monterey are facing salt water intrusion, water quality concerns, low supplies, and urbanization.

The SCCAO water conservation program intends to the above concerns by initiating and ensuring the completion of Plans and by initiating Best Management Practices (BMP's) whenever possible, by sharing success stories with all users (Ag & Urban), and by assisting all agencies in overcoming their water management concerns.

### **Goals**

The goal of the SCCAO WCFSP will be to continue to provide assistance to Reclamation water service contractors in the development and implementation of water conservation. In order to accomplish this, the area office will facilitate the completion of the remaining Plans and assist with the completion of 5-year Plan updates due in 2000. In addition, SCCAO will identify where BMP implementation can be accelerated through funding and/or technical assistance.

### **Activities**

#### ***Planning Assistance***

RRA and CVPIA require each district to prepare and implement a Plan. Some districts still require assistance in completing their Plans to identify appropriate BMPs for implementation. Activities under planning assistance help to meet this need and assist in the planning needs for Native American water management programs. Activities include:

- Provide technical assistance to area customers in their development of Plans. Help provide background information, water management options, and most applicable BMPs.
- Provide technical assistance in completing environmental review (National Environmental Policy Act [NEPA] and California Environmental Quality Act [CEQA]) to determine potential impacts from implementing BMPs identified in district Plans.
- Assist Reclamation water service contractors to identify water conservation issues and target needs.
- Assist regional entities in developing water management strategies to encourage regional water management efforts.

#### ***Conservation Measurement Implementation***

Through cooperative agreements, grants and contracts, the WCFSP provides financial assistance, cost-sharing, and other measures to encourage the implementation of the BMPs identified in the water contractors Plans. Cost-sharing agreements are emphasized to encourage *buy-in* by customers who are willing to work in a cooperative effort. The following conservation equipment and management measures have been financed through cost-share agreements:

- Work with other agencies, consultants, universities, and customers to provide irrigation system evaluations and recommendations for cost effective system improvements to area farmers.
- Install CIMIS weather stations to provide farmers with district-specific irrigation scheduling information.
- Provide funds for irrigation system and facility hardware purchases that provide for more efficient water management.
- Provide funds for computer purchases for tracking data, including irrigation scheduling and water billing information, accessing the Internet and other water management bulletin boards to obtain current technical data, and for assisting in the development and implementation of Plans.
- Provide funding for SCADA systems to improve water district canal operations and optimize the utilization of contractor resources.

#### ***Provide Education, Training, and Technology Transfer Opportunities for Our Customers***

The following are activities included in the WCFSP to provide education, training and information transfer to area water users:

- \_ In cooperation with DWR, provision of training for CIMIS and improvements in DWR's statewide CIMIS computer network.
- \_ Assistance with development of in-school awareness programs.
- \_ Development and production of water education calendars.

***Water Conservation Demonstrations and Investigations***

The following are activities included in the WCFSP that demonstrate the various methods and determine benefits derived from the implementation of BMPs.

- \_ Investigation of water and energy savings with residential hot water on-demand plumbing systems.
- \_ Conduct pilot studies for implementation of various urban BMPs.
- \_ Construction of water conserving and drought demonstration garden.
- \_ Determination of differences in ET of various crop varieties.
- \_ Determine impacts of blending imported water with groundwater.

***Partnerships for Program Implementation***

The WCFSP has been developed through discussions with local stakeholders who have entered into partnerships to develop and implement water conservation/management programs. Partnerships have been created with; water districts, resource conservation districts, local utilities, Denver TSC, U.S. Department of Agriculture Research Service (ARS), and Natural Resources Conservation Service, Central Valley Water Awareness Committee, Cal Poly ITRC, California Departments of Water Resources and Food and Agriculture, University of California Cooperative Extension Service, farmers, consultants, manufacturers, and individual urban water users.

## **MID-PACIFIC REGIONAL OFFICE TEAM**

The Regional Water Conservation Team (Regional Team) was established in 1992 to implement the provisions of the CVPIA. Since that time, the Regional Team has administered the water conservation programs associated with CVPIA and the RRA and has supported Area Office Water Conservation Specialists in their efforts to evaluate water management plans and promote better water management among districts.

In 1998, the Regional Team developed a strategic plan for the MP Region's water conservation program. The Regional Team's efforts in 1999 remain consistent with that plan and its mission statements. In April of 1999 Julie Spezia left the program to focus on Water Transfer issues related to CVPIA. This reduced staff for the second half of the year. Tracy Slavin became the team leader following Julie's departure.

### **Goals**

*The Regional Team's mission statement:*

Optimize the beneficial use of water resources including, groundwater, recycled/reused water, and surface water. Educate customers about the opportunities for and the benefits of water conservation in context of watershed management. Cooperate with agencies and other stakeholders to be leaders in conservation.

### **Activities**

To meet these goals, the Regional Team is engaged in a wide range of activities. They are laid out within the framework of the WCFSP for the purposes of this annual report.

### **Planning**

The Regional Team assists the Area Office Staff in the review of water management plans in the Region. The Area Office Water Conservation Specialists provide planning assistance to the districts in person or through consultants. In some cases, the Regional Team is also asked to provide assistance at this stage. After the initial review of plans, comments and recommended changes are provided to the districts. When the plan is near completion, the Regional Team reviews the plan and provides official comments in the form of a letter. In consultation with the Area Specialists, the Regional Team begins the final communications with the district until the plan is adequate according to the CVPIA Water Management Planning Criteria. Through the federal register process, the public is given an opportunity to review the plan and comment before a plan is officially deemed adequate. Plans submitted outside of the CVP service area are commented on for compliance with RRA but are not evaluated for adequacy and do not go through a public scoping process.

The original Criteria for Evaluating Water Conservation Plans was developed in 1993. It was revised and renamed in 1996 to Criteria for Evaluating Water Management. The Region revised the Criteria again in 1999 through a series of scoping sessions, public workshops, and consultations with water management experts. The Region has coordinated with the Agricultural Water Management Council (AWMC) and the Urban Water Conservation Council's (CUWCC) in their efforts to promote efficient water management planning. Both of these Councils are key players in CALFED's Water Use Efficiency program. The revised Criteria incorporated language from each council's water conservation planning and reporting process wherever

possible. The revised Criteria closely match those of each council with the exception of water measurement and pricing. These are important differences, which will continue to be revisited during implementation of the CALFED program and the commitment of CALFED to come up with a statewide definition for appropriate water measurement.

Once a district has an approved plan the Regional Team coordinates the annual update process. An extensive database is maintained in which the key plan elements for each district are tracked at the end of each year. Annual updates are used to evaluate a district's plan implementation. An annual update template is generated which each district is required to update based on their water conservation activities for that year. The Area Specialists work with the districts to complete these reports when assistance is requested. After reviewing the annual updates, districts are notified if parts of their Plan are insufficient or require more effort. This information is provided to the Region Water Contracts and Water Rights Branch.

### **Education and Outreach**

Public education and outreach are important tools in improving the management of water resources in order to more effectively present future needs. The Regional Team promotes water management through presentations and papers, and by supporting programs that reach a broad audience. Continuing education courses for district staff and board members is also encouraged.

By partnering with several institutions, districts can choose from programs provided by Denver TSC, Fresno State CIT, Cal Poly ITRC, American Water Works Association (AWWA), and Water Education Foundation to name a few.

A broad audience can be reached through Reclamation's web site called WaterShare at <http://www.watershare.usbr.gov>. WaterShare was recognized as the Best Government and Law Website at the Third Annual Sacramento Web Awards. The Regional team pioneered this site and retains a contractor to work with Denver Staff and staff from other regions to improve and expand the site. In 1999, efforts focused on updating and adding the Reclamation Wide Planning Water Conservation Handbook to the website along with listing new water conservation documents that have been developed.

The Regional Team continued to provide funds and technical assistance to the American River Water Education Center (ARWEC) in Folsom. The ARWEC helps fulfill Reclamation's obligation under CVPIA to provide a water conservation center. The ARWEC was opened in May of 1999 and has exceeded expectations as a vehicle to provide a valuable water education resource to the neighboring community. Similar efforts are underway to create centers at Shasta and Friant Dams.

Youth education presents opportunities to instill a conservation ethic in the next generation. In addition to supporting Project WET in California, the Regional Water Conservation program contributes to the California Envirothon. We also maintain the WaterLearn programs including water conservation related school lesson plans on Reclamation's WaterShare web site.

The Regional Team also reaches water districts and others through various publications. The Conservation Connection is a quarterly newsletter for which Water Conservation Specialists and Water Districts are the target audience. In January 1999 Reclamation published the Water Wise Garden Map of California which highlights water efficient demonstration gardens throughout the state.

The Regional Team also co-sponsored training for water conservation coordinators. The Regional Team worked with the AWMC, California Association of Resource Conservation Districts (CARCD) and Cal Poly ITRC to provide two, two-day training sessions. The MP and Lower Colorado Regions are jointly providing support to the AWWA water conservation-training program which focuses on landscape and urban. Marsha Prillwitz has been instrumental in developing the curriculum for this program.

### ***Demonstration Projects***

Demonstration projects provide an opportunity to explore and validate innovative water conservation practices that will accelerate the improved management of water in the Region. In 1999 the Regional Team funded demonstration projects through partnerships with the CUWCC, Department of Water Resources, Fresno State CIT Irrigation Technology, water districts, and Cal Poly ITRC. The Regional Team also worked with Denver TSC and private consultants on projects. On-going managed programs include two Challenge Grant Programs initiated in 1994: one demonstrates total resources management on the farm, and the other demonstrates options for economic incentives to encourage water conservation.

### ***Implementation***

In the past, the Regional Team provided more funding for BMPs such as toilet replacement programs. With the advent of the WCFSP, the Area Offices have taken the lead on these activities. To support their efforts the Region maintains a contract with Cal Poly ITRC that provides technical assistance directly to water districts. The team also works closely with the CUWCC and AWMC to sponsor additional programs which foster the implementation of appropriate water management efforts.

## **Accomplishments**

### ***Planning***

- The Regional Team worked with the Area Office Water Conservation Specialists to review 15 water management plans.
- The water conservation planning database was converted from FoxPro to an Access database computer program.
- The Standard Criteria for Evaluating Water Management Plans was updated as required by CVPIA through a public scoping process.
- Regional staff continued to work closely with the CUWCC and the AWMC to standardize planning processes where possible.
- The Region began the process of updating the water user's Guidebook for Water Management Planning in the Central Valley of California to incorporate the changes made to the Standard Criteria.

### ***Education and Outreach***

- The Regional Team continued to publish its Conservation Connection Newsletter quarterly. This newsletter was sent to over 1000 water districts and various interested groups.

- Reclamation provided financial support for Conserv99. The Regional Team also presented two papers, brought a display, and assisted with the water conservation specialist training at this international water management conference.
- Cooperation with the CITs Waterright website continued. Waterright is a weather-based irrigation scheduling program for residential, large landscape, and agricultural water management. The CIT is currently refining the agricultural crop coefficients and developing an irrigation scheduling tutorial.
- The Region took the lead on developing the Water Wise Garden Map Poster and Website. Throughout California, demonstration gardens help people learn more about water efficient, sustainable landscapes. The colorful full-size poster and complementary website feature primarily gardens dedicated to water conservation. However, other notable gardens were included that have at least one section devoted to California native plants or those from other parts of the world that are well suited to the State. The debut of the poster and website occurred at the Conserv99 Conference in January 1999. More comprehensive information appears at Reclamation's website at "<http://www.watershare.usbr.gov>". The Water Education Foundation designed and distributes the posters.
- Staff participated in workshops held at Red Bluff, Visalia, Concord and Sacramento. The main purpose of the workshops was to provide information on CALFED's water use efficiency component and to solicit comments. Staff also reviewed and evaluated comments received in response to the water use efficiency section of the CALFED draft EIS/EIR.
- Reclamation provided financial and technical support in the American Water Works development of the Water Conservation Specialist Level One Training and Certification Program. The course material was reviewed and revised by a statewide AWWA CalNevada section committee. Two training sessions were given in September 1998 and the first certification test was offered. Eighty percent of the people who took the test passed. The two-day classes were offered at the Conserv99 Conference in Monterey, and then twice again in Northern and Southern California during 1999. The class was also offered to Reclamation and California Department of Water Resources staff at no charge in July 1999. Level Two Training will be offered next year. Marsha Prillwitz serves as a trainer and has been instrumental in the curriculum development for the classes.
- The Region funded a joint Agricultural Water Management Council/Reclamation Water Conservation Coordinator Training. Two 2-day courses were presented at the Cal Poly ITRC for agricultural water district water conservation coordinators. The courses provided information on water conservation requirements and useful information on determining and implementing appropriate Best Management Practices.

- The Mid-Pacific Region supported the University of California Cooperative Extension's Water Use Classification of Landscape Species (WUCOLS) Update and Landscape Microclimate study. This very popular publication was first published in 1991 and last updated four years ago. The University of California Cooperative Extension San Francisco and San Mateo County Office once again assembled a group of highly esteemed horticultural experts to review and revise the plant list and associated publication.
- The Regional Team is actively working with Marine World to promote water conservation. The park receives one to two million visitors per year. They have asked Solano County water districts to develop a new display emphasizing the wise use of water. Reclamation is a partner with Solano County in the development of this new display. It is an exciting way to reach a very broad audience. We will also be working with them to complete a water audit of the park and make any recommendations for improvements in their water management system.
- In order to make CIMIS (the California Irrigation Management Information System) more accessible, Reclamation is co-funding a project with the California Department of Water Resources to upgrade the system and make it available over the Web. This upgrade will also allow people to access weather data by zip code. An associated project will test the practicality of using "mini" weather stations (solar radiometers) to gather data in small microclimate zones.
- Cal Poly ITRC provided short courses to water managers and water district board members at their campus and at districts. These educational courses are very affordable because the Region underwrites them.
- The Regional Team members made several presentations at conferences and meetings. Lucille Billingsley gave a presentation at Conserve 99 in Monterey on Agricultural Incentive Water Pricing. Marsha Prillwitz gave several presentations, which included a presentation to the Association of California Water Agencies on Reclamation's Water Conservation Program. Tracy Slavin serves on the California Irrigation Institute board and spent two weeks in South Africa as part of the Bi-National Commission's technical exchanges on water conservation.
- The Regional Team worked closely with the Central California Area Offices staff to open the ARWEC. The Team provided technical assistance and funding in the development of displays and the ARWEC's website. Lucille Billingsley was instrumental in coordinating Regional and Area Office efforts, which lead to the successful opening of the center in May.

### ***Research and Demonstrations***

One example of a project that supports the urban BMPs is the evaluation of small scale area measurement techniques by Cal Poly's ITRC. In order to implement BMP Number Five, districts will need to measure their irrigated landscape acreage and develop a water budget accordingly. ITRC has tested five different measurement methodologies and the associated technology. Their report includes information about the cost, challenges, and real experience with the different methods. CUWCC will be able to reference this valuable information as they provide assistance to districts. Similarly, supported by Regional funding the Contra Costa Water District conducted an on-the-ground and in-the-air analysis of landscape measurement techniques. They compared the results of high tech remote sensing aerial measurement equipment to as-built drawing scanning and a hand measurement method. The district compared

the accuracy and cost of the three different methods. This report complements the work performed by ITRC.

### ***Implementation***

The Regional Team continues to manage the contract with Cal Poly ITRC to provide direct technical assistance to water districts. They assist district in identifying and implementing appropriate BMPs through a rapid one to two day evaluation of an irrigation district. The Regional Team is currently negotiating a second five year agreement with the ITRC to provide our customers with this valuable technical assistance.

The challenge grant with the CARCD to implement total resource management on model farms in four locations ended its fifth year. The purpose of this project is on-farm resource management through whole-farm resources planning. It is envisioned that CALFED will incorporate portions of this program in its implementation phase. The program will begin documenting successes so that the information learned from the project can be transferred to others.

### **CUWCC Support**

As the role of the CUWCC may be expanding over the next year, Reclamation has contributed financially toward the development of a strong future for this consensus-building organization. Also, Reclamation staff participates actively on the many various committees of the Council. In addition, Reclamation is funding numerous projects that will help in the implementation of the Councils urban BMP's. This year's efforts have focused on developing a web-based data base for gathering annual reports; developing a process for evaluating exemptions from BMP's, based on cost effectiveness; preparing for a certification role for the Council; and publication of a guidebook for implementing the landscape.

## **Partnerships**

The Regional Team provides leadership in a number of water conservation related activities at the state, national and international levels. Members of the team continue to serve in various capacities in the CALFED program. We continue to coordinate with DWR and the NRCS as we near the implementation phase of this program. We are supporting the efforts of the CUWCC and the AWMC to create a forum for stakeholders to discuss and adopt policy for CALFEDs Water Use Efficiency Program. We continue to keep a working relationship with several Conservation Districts in Nevada, Oregon and California. During the past year, Reclamation has been exploring ways to work with the California Integrated Waste Management Board to meet the goals of each agency. Waste reduction and water use efficiency complement several Conservation Districts in Nevada, Oregon and California. During the past year, Reclamation has been exploring ways to work with the California Integrated Waste Management each other and by pooling resources, we believe we can accomplish more. In addition to our project activities, the Water Conservation Team works closely with other units within Reclamation to provide data and assist with the implementation of agency programs. This year we have assisted with water needs analyses required for long-term contract renewals. We have also provided comment for the new Drought Commission. We have hosted several international visitors from South Africa, Egypt, Taiwan, Spain, and other places.

## **Measuring Success**

Government Performance and Reform Act goals and indicators

This annual report for the WCFSP provides a detailed analysis of the programs accomplishments and whether the program is meeting its stated goals and objectives. Another reporting mechanism is through the Government Performance and Acts process within Reclamation. The GPRA requires agencies to set measurable goals to accomplish the mission set out in their respective strategic plans. Water conservation programs are a high priority within Reclamation. 1999 was the first full year of reporting under the GPRA. The goals and indicators set up under this process that relate to the WCFSP are:

Goal 01.05.21.99 By the end of FY99, increase the efficient use of water supplies associated with federal water projects by assisting districts, through the WCFSP, and other regional or Area Office programs, to develop, submit, and implement effective water conservation plans. Unit of measurement. Number of districts provided assistance.

Goal 01.05.22.99 In FY99, Reclamation will review and comment on 100 percent of all plans submitted Unit of measurement: Number of plans reviewed.

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