



INTRODUCTION

This report summarizes the Fiscal Year (FY) 2002 Water Conservation Field Services Program (WCFSP) activities for the Bureau of Reclamation's (Reclamation) Mid-Pacific Region (Region). As a result of mandates detailed in the Central Valley Project Improvement Act of 1992 (CVPIA), the Region has placed a strong emphasis on water conservation. Reclamation's mission, which includes support of programs such as the WCFSP, has evolved to include resources management as a prime objective. The WCFSP is 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 limited water resources.

In 1997, Reclamation created the WCFSP. The WCFSP is designed to encourage water conservation; assist contractors with developing and implementing effective water management and conservation plans; coordinate with state and other local conservation program efforts; and generally foster improved water management on a regional, statewide, and watershed basis. The four focus areas of the WCFSP are water management planning, conservation education, demonstration of innovative technologies, and implementation of conservation measures.

The WCFSP has been widely accepted by contractors throughout the Region and has accelerated water conservation planning efforts and implementation of the Best Management Practices (BMPs). During the past year, the Region's water conservation planning efforts have led to the successful completion of numerous Water Management Plans (Plans). In addition, those contractors with outstanding Plans have made good-faith efforts to complete those Plans. Water education efforts have included developing and maintaining water conservation centers and continuing to provide education information to the general public, teachers, students, and growers. Demonstrations on water measurement, system automation, and landscape measurement have been a key element of the WCFSP over the past year. Implementation activities continue to increase as more Plans are finalized and BMPs are identified. Technical and financial assistance has been provided to the contractors for the implementation of urban and agricultural BMPs such as rebates on water efficient devices, and mobile irrigation system evaluation laboratories and canal linings.

PARTNERSHIPS – BRIDGING THE HEADGATES

A vital component of the WCFSP is the creation of partnerships with local, State, and Federal entities. From its' inception the WCFSP has stressed the importance of cooperative programs that would benefit Reclamation contractors through joint efforts and cost share agreements. Over the past six years, partnerships in the Region have continued to flourish and the WCFSP has become a key element of the Region's Water Conservation Program. Water Conservation centers have been established in Folsom,



Redding, and Shasta through cooperative efforts between State and Federal agencies, local water districts, universities, and stakeholders. The CALFED Bay-Delta program (CALFED), a joint effort to bring coordination and cohesion to California's water supply and environmental protection plans, has increased the number of partnerships due to the Record of Decision (ROD) signed in 2000. As a result of the CALFED ROD, Reclamation staff has increased interaction with water management counterparts in other agencies and has discovered areas of common interest which has resulted in an unparalleled collaboration of resources and skills.

In addition, Bridging the Headgates Memorandum of Understanding with the Natural Resources Conservation Service (NRCS), National Association of Conservation Districts (NACD) and National Association of State Conservation Agencies (NASCA) has helped to reinforce Reclamation's working relationship with these and other entities. The creation of partnerships with local, state, and federal entities continues to be a vital component of the WCFSP. Partnerships have allowed Reclamation to leverage existing resources with those of other entities. These partnerships have also resulted in greater acceptance of the WCFSP as well as the acceptance of other programs with similar goals.

PROJECT FUNDING

Approximately \$3 million was spent region-wide on the WCFSP for grants and cooperative agreements. Participating agencies invested approximately 50% in some of these projects.



CENTRAL CALIFORNIA AREA OFFICE

BACKGROUND

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. Approximately 9,000 acres within the CVP service area receive irrigation water, while the Solano Project receives nearly 62,000 acres of irrigation water. Current annual deliveries average about 14,600 acre-feet (AF) of irrigation water and 45,700 AF of municipal and industrial (M&I) water through CVP facilities, 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 with approximately 20 requiring Plans.

Stretching from the foothills of the Sierra Nevada Mountains west to the Pacific Ocean, the CCAO has an enormous diversity in the 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. Because of this population growth and natural diversity, the pressure on the supply of both surface and ground water continues to increase.

AREAS OF FOCUS

Water Management Planning

Every contractor is required to update their Plan every 5 years and the CCAO contractors have all fulfilled this requirement. Through the WCFSP, Reclamation staff is able to provide funding and technical assistance to aid the contractors in updating and implementing their Plans. This assistance helps the contractors complete their Plans and assists them in meeting their goals.

The CCAO has recently begun conducting local and regional pilot programs to study the economical feasibility of extending these programs from a few participants to an entire contractor or to a number of locally grouped contractors. One of the current pilot programs is the Rain Sensor program, which is designed to automatically disengage the irrigation controller to prevent watering on rainy days. If it proves to be economically beneficial, an effort will be made to obtain outside funding in order to offer this program to as many individuals as possible. As this program enters into its second year, data from the first year has been very positive for implementing this on a wider range. In FY 2003, the Real Time Water Use pilot program will be initiated that will look at on-demand household use by installing meters that provide data on water used by individual households.



CONSERVATION EDUCATION

The large population base in the area provides a significant opportunity to educate the public about water conservation. Education and training efforts continued to target schools, districts, and communities. The funding for these activities provided the CCAO public outreach specialist with materials that helped educate community organizations and schools about water use-efficiency issues. The American River Water Education Center (ARWEC) at Folsom Dam was dedicated on May 26, 1999, and remains a focal point for conservation education the area.

The visitor center at New Melones Dam now includes a water conservation display that was developed in conjunction with the existing archeological, wildlife, and natural history displays. Future work will focus on xeroscape gardens, low water-use irrigation methods, and development of an outreach program at this center. A partnership was created among Reclamation, several contractors, public organizations, and two universities in order to create a water education center near Reclamation's Lake Berryessa project.

The CCAO continued to work with local contractors and school districts in the implementation of a water-auditing program. A curriculum was developed for second and third grade students, thereby allowing them to audit all aspects of water in their lives. This audit included the amount of water they use, the quality of the water, where it comes from, and how to use it wisely. The materials were presented to the students by a theater production company and are jointly funded by Reclamation and 10 water user organizations.

The CCAO is also developing an outreach program to reach schools and organizations that cannot visit ARWEC due to transportation restrictions. The curriculum will incorporate good water stewardship and the program will provide students and parents with a greater appreciation of how their water is used, and the actions they can take at school and at home to use water more efficiently.

A separate, but equally important resource is power. California State Parks is currently building a new visitor center at the Old Folsom Power House, and they have requested that Reclamation partner with them on the center. This partnership will not only promote education regarding the development of power from hydropower, but it will also demonstrate the correlation between water and power savings.

DEMONSTRATION OF INNOVATIVE TECHNOLOGIES

A key process in the CCAO Water Conservation Field Services Programs (WCFSP) is to work with contractors in order to determine what their biggest needs are and how to effectively address them. The CCAO is using pilot programs to determine if certain



technologies are cost effective and whether or not other contractors can benefit from them. Some innovative technologies are being studied by the East Bay Municipal Utilities District, the Solano Irrigation District, the Solano County Water Agency, and the Regional Water Authority (see table for specific details). This approach allows limited financial resources to be stretched further through partnerships and provides valuable information as to the relevance of implementing pilot programs.

IMPLEMENTATION OF CONSERVATION MEASURES

Various projects that implement conservation measures are ongoing which include the Rain Sensor/Irrigation Controller Pilot Program, central control irrigation systems for parks, schools and other large landscapes, water meter replacements, software to show real time water usage, and canal lining. All of these projects, which fall under the WCFSP umbrella, are dependent on public involvement and the stakeholders have been contacted directly to determine local area needs. As a result, stakeholder workgroups will continue to be established in order to provide recommendations on the design of each activity as well as to determine appropriate partnerships.

- Since the inception of the WCFSP, the program has partnered with:
- Local urban and agricultural water districts
- Army Corps of Engineers
- Western Area Power Administration
- California Department of Water Resources
- California Department of Parks and Recreation
- California Integrated Waste Management Board
- Natural Resources Conservation Service
- U.S. Fish and Wildlife Service
- Audubon Society and the Sierra Club
- Sierra Club
- Sacramento Water Forum
- California Urban Water Conservation Council
- Agricultural Water Management Council
- Resources Conservation Districts

WCFSP ACCOMPLISHMENTS

Various grants, usually on a cost-share basis, are provided to assist the contractors in developing and implementing a Plan. Basically, each district is contacted by phone and a follow-up meeting is held to discuss the proposed project.



The CCAO has approximately 20 contractors that are required to develop Plans. The combined contractors cover approximately 820,000 acres and serve a population of 2.1 million. The CCAO has full Plan compliance by all required water contractors. Many contractors have or are near reaching their 5-year revision timeline, and the CCAO will continue to work on updating plans and the associated criteria, as required by the Central Valley Project Improvement Act.

The CCAO provided technical and financial assistance to help contractors with implementing water conservation measures. Technical assistance consisted of Reclamation staff (Area, Region, and Denver) and consultants (Irrigation Training and Research Center, the Water Education Foundation, the Water Link, and private water consultants on contract to Reclamation). Financial assistance included grants and cost-share agreements. The CCAO worked diligently with contractors to implement their Plans and used goals derived from Best Management Practices (BMPs) identified in the Plans to determine the needs of the districts and how best Reclamation can assist them.

WCFSP OUTLOOK

Since the CCAO has full compliance on Plan development, our priority has switched to revising the Plans every 5 years and implementing Plans. The CCAO will strive to help the districts implement their Plans with assistance from the WCFSP. In addition, the CCAO will continue to promote public education by continuing development of the water education/visitor centers at Folsom Dam, New Melones Dam, and Lake Berryessa; xeroscape garden developments; public education outreach; school education outreach through the Water Education Audit Program; and support of each contractor's individual education program. Staffing levels will remain between 1.0 and 1.2 full time employees with a WCFSP budget of approximately \$300,000, which does not include staff time. Specific activities will vary from year to year due to the contractor's priorities. However, the CCAO's long-term goals will continue to be Plan implementation and updating the 5-year revision of existing Plans.



CCAO TABLES

Table 1 – Staff Resources		
Total number of Reclamation staff days planned		FY 2002
WCFSP coordinator staff days used		120
Support staff days used	Area office	50
	Regional office	10
	Water Resources Office	-
Total number of Reclamation staff days used in FY 2002		180
Estimated number of staff days from entities through formal agreements (i.e., other agencies or organizations) (identify)	State of California	150
	Volunteers	75
	Get Wet	30
	Make A Splash	25

Table 2 – Funding Resources for FY 2002							
		WMC	RRA	Project O&M	EIP	Totals	% of Total Available
Annual appropriation		0	0	201,000	100,000	301,000	
Carryover from prior years		0	0	0	0	0	
Transfers in or out		0	0	0	0	0	
Total funds available for FY 2002		0	0	201,000	100,000	301,000	
Program administration and technical assistance							
Staff salaries and overhead	Expended	0	0	90,000	0	90,000	
Travel	Expended	0	0	2,500	0	2,500	
Materials, supplies and other expenses	Expended	0	0	10,000	0	10,000	
Financial assistance contracts							
Planning	Obligated	0	0	0	21,000	21,000	
Demonstrations	Obligated	0	0	50,000	0	50,000	
Implementation	Obligated	0	0	95,000	69,000	164,000	
Education/Training	Obligated	0	0	40,000	0	40,000	
Total financial assistance	Obligated	0	0	185,000	90,000	275,000	
Other (processing of grants by Regional office)	Expended	0	0	12,000	7,000	19,000	
Total WCFSP Program	Obligated/Expended	0	0	197,000	97,000	294,000	
End of year surplus		0	0	4,000	3,000	7,000	
Total unliquidated obligations at beginning of fiscal year		0	0	0	0	0	
Total unliquidated obligations at end of fiscal year		0	0	4,000	3,000	7,000	



KLAMATH BASIN AREA OFFICE

BACKGROUND

The Klamath Project provides water to over 240,000 acres of farmland, two national wildlife refuges, endangered species, and fulfills the obligation required under the Native American Trust Assets both in California and Oregon. In an average water year, the project supply is not able to meet all of its water needs.

The Klamath Basin Area Office (KBAO) is in the process of a general stream adjudication. During the interim, Reclamation is developing a long-term operational plan, which will provide more certainty regarding future water supplies.

Because of the need to maximize the use of limited supplies in the area, the Water Conservation Field Services Program (WCFSP) is gaining momentum in the promotion of water conservation with Reclamation contractors and others interested in the program.

AREAS OF FOCUS

The goals and objectives of the KBAO continue to be based on encouraging more efficient use of water, which includes encouraging irrigation contractors in the development and implementation of Plans, in order to improve water supply reliability and conserve water for other uses.

WATER MANAGEMENT PLANNING

Ten irrigation contractors totaling 148,358 acres were required to submit Plans and seven of these contractors were contacted either individually or through a public meeting to discuss the development of their Plans.

Reclamation entered into a cost-share agreement with the Oregon DWR to develop a basin-wide drought plan. Also, through a cooperative agreement with the Oregon DWR and the U.S. Geological Survey, a ground water study was conducted in the basin. The study will help determine the availability of alternate sources of water during water-short years.

CONSERVATION EDUCATION

A grant was provided to the University of California Cooperative Extension and the Intermountain Research and Extension Center to provide an irrigation education program for agriculturists in the Klamath Basin.



DEMONSTRATION OF INNOVATIVE TECHNOLOGIES

The Tulelake Irrigation District (TID) completed lining of 2^{1/3} miles of canal with a new type of material, Ethylene Propylene Diene Terpolymer, which looks similar to rubber tubing. This was the largest project of this type within Reclamation.

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

IMPLEMENTATION OF CONSERVATION MEASURES

Reclamation provided funding to TID to complete an additional 1^{1/3} miles of canal lining, and as a result of this, an estimated savings of 700 AF per year is projected.

WCFSP ACCOMPLISHMENTS

The KBAO is continuing to work with irrigation contractors, through the WCFSP, to encourage the development of plans and implementation of the BMPs.

WCFSP OUTLOOK

With continued funding of the WCFSP, the program will expand as the KBAO gains the trust of its Reclamation contractors and others who are interested in water conservation. The KBAO will continue to work with contractors in the development and implementation of Plans. It is anticipated that the contractors will share the information gained from participation in the WCFSP. However, the inability to issue grants could severely restrict implementation of the WCFSP.



KBAO TABLES

Table 1 – Staff Resources		
Total number of Reclamation staff days planned		FY 2002
WCFSP coordinator staff days used		80
Support staff days used	Area office	105
	Regional office	15
	Water Resources Office	0
Total number of Reclamation staff days used in FY 2002		105
Estimated number of staff days from entities through formal agreements (i.e., other agencies or organizations) (identify)		2

Table 2 – Funding Resources for Fiscal Year 2002							
		WMC	RRA	Project O&M	EIP	Totals	% of Total Available
Annual appropriation				0	120,000	120,000	100
Carryover from prior years				0	0	0	0
Transfers in or out				0	0	0	0
Total funds available for FY 2002				0	120,000	120,000	100
Program administration and technical assistance							
Staff salaries and overhead	Expended			28,000	0	32,000	100
Travel	Expended			0.5	0	0.5	100
Materials, supplies and other expenses	Expended			0	117,000	117,000	98
Financial assistance contracts							
Planning	Obligated			0	0	0	0
Demonstrations	Obligated			0	0	0	0
Implementation	Obligated			0	67,000	67,000	
Education/Training	Obligated			0	50,000	50,000	
Total financial assistance	Obligated			0	117,000	117,000	98
Other	Expended			0	0	0	
Total WCFSP Program	Obligated/ Expended			0	117,000	117,000	98
End of year surplus				0	0	3,000	2,000
Total unliquidated obligations at beginning of fiscal year							
Total unliquidated obligations at end of fiscal year							



LAHONTAN BASIN AREA OFFICE

BACKGROUND

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 interest include the Lake Tahoe Basin, the Truckee River Basin, the Carson River Basin, the Humboldt River Basin, and the Walker River Basin, of which 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, and there are no waterways to an ocean. In their natural state, the rivers are temporary 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 controversial atmosphere concerning the use of water. These issues make water conservation extremely important in Northern Nevada, and presents unique and challenging opportunities in the implementation of the Water Conservation Program.

WCFSP AREAS OF FOCUS

The areas of focus for the LBAO are assisting, where possible, the irrigation contractors in implementing their Plans and providing educational opportunities for both irrigation district personnel and the general public.

Particular emphasis is placed on the Truckee-Carson Irrigation District (TCID) in the implementation of its Plan and in water management, conservation, and use. This is primarily because TCID uses water from two drainage basins and has other competing interests that include wetlands on the Pacific Flyway, Native American interests (both inside and outside the district), endangered species, threatened species, and upstream urban growth.

The other two contractors are provided assistance upon request and the assistance is usually in the form of technical advice and analysis through on-site visits and consultation.



WCFSP ACCOMPLISHMENTS

Due to a lack of legislative authority for the LBAO to enter into financial assistance agreements under the Water Conservation Field Services Program (WCFSP), accomplishing goals of the program have been somewhat problematic. However, through the use of the procurement contracting process, the LBAO was able to enter into contractual relationships for some significant general public education programs. Those included:

- The Water Education Foundation Nevada water story video, poster, and booklets;
- The National Project WET (Water Education for Teachers) and The Waters of Nevada KIDs (Kids in Discovery) Activity Booklet; and
- The Newlands Water Protection Association Agricultural Exposition 2002 (some of the highlights were alternative crops for producing power, which require less water, water measurement, and Bridging the Headgate

The LBAO continued to pursue other programs such as the Lahontan Conservation District Field Evaluation and Water Measurement Program, which produced water education for individual irrigators.

WCFSP OUTLOOK

The WCFSP in the LBAO has had satisfactory results. Public education accomplishments are highly successful and supported by the educational institutions in Northern Nevada. Feedback on Project WET has been positive and has provided educational opportunities to children through the public school system. Projects through the Water Education Foundation have been well received and are being distributed to various entities in Northern Nevada.

Although some non-monetary assistance has been provided to irrigation contractors, work with irrigation contractors has not been as successful as desired. The lack of legislative authority to enter into financial assistance agreements has hampered the LBAO's ability to provide assistance directly to the irrigation districts. The LBAO has provided some assistance through procurement contracts, but because of the requirements of procurement, assistance has often been difficult to obtain. The requirements for full and open competition versus sole source, defining a deliverable product under the contract, Davis-Bacon ¹ wages, and many other requirements under the Federal Acquisition Regulations makes the contracting process complicated.

¹ The Davis Bacon Wage Determination is made by the U.S. Department of Labor under the mandate of the Davis-Bacon Act and related legislation. The Department determines prevailing wage rates for construction-related occupations in most counties in the United States. All Federal Government



Currently, the LBAO is working with the Regional and Denver Offices to identify valid authorities to enter into financial assistance agreements. Hopefully, this effort will be successful in accomplishing the goals of the program for fiscal year 2003. In the meantime, the LBAO will continue to seek ways to assist all of our partners through processes currently available to us.

construction contracts and most contracts for federally assisted construction over \$2,000 must contain Davis-Bacon wage determinations.



LBAO TABLES

Table 1 – Staff Resources		
Total number of Reclamation staff days planned		FY 2002
WCFSP coordinator staff days used		65
Support staff days used	Area Office	0
	Regional Office	12
Total number of Reclamation staff days used in FY 2002		77
Estimated number of staff days from entities <i>through formal agreements</i> (i.e., other agencies or organizations) (identify)	Natural Resources Conservation Service	5

Table 2 – Funding Resources for Fiscal Year 2002				
	Project O&M	EIP	Totals	% of Total Available
Annual Appropriation	480,000	125,000	605,000	100
Carryover from prior years	0	0	0	0
Transfers in or out	52,100	125,000	143,000	0
Total funds available for fiscal year 2002	427,900	0	461,000	100
Program administration and technical assistance				
Staff salaries and overhead	287,141	0	287,141	100
Travel	0	0	0	N/A
Materials, supplies and other expenses	0	0	0	N/A
Financial assistance contracts				
None				
Procurement Contracts				
Planning	0	0	0	
Demonstrations	0	0	0	
Implementation	0	0	0	
Education/Training	140,600	0	140,600	100
Total procurement contracts	140,600	0	140,600	100
Other	0	0	0	
Total WCFSP Program	427,741	0	427,741	92.2
End of year surplus				33,259



NORTHERN CALIFORNIA AREA OFFICE

BACKGROUND

The Northern California Area Office's (NCAO) Water Conservation Field Services Program (WCFSP) encompasses the Sacramento River and its tributaries from Shasta Dam in the northern part of the Sacramento Valley, to the West Sacramento area in the southern part of the Sacramento Valley. Historically, Northern California 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 provide for diversion of water to water-deficient areas of the State. Prior to the early 1980's there appeared to be surplus water supplies available to CVP contractors. However, with the increased mandates of the Central Valley Project Improvement Act (CVPIA) and the San Francisco Bay-Delta Outflow requirements, coupled with decreased diversions from the Trinity River and the consequences of listings pursuant to the Endangered Species Act, the CVP is unable to meet all of the competing demands for water.

Northern California is a large geographic bowl having an outlet at the San Francisco Bay-Delta and good quality sub-surface water in most basin locations. Consumptive use is predominantly crop evapotranspiration. Opportunities exist to improve water-use efficiency through monitoring, conjunctive use, district canal and river management, and on-farm efficiencies.

The NCAO contractors are divided into two categories. The first category is comprised of contractors with CVP water service contracts and the second category is Sacramento River settlement contractors (settlement contractors). The water service contractors have project water provided from CVP water storage, conveyance, and pumping facilities. The settlement contractors have contracts with combined project water and base supply. The Base supply is an agreed upon quantity that may be diverted from the river during the months of April through October without payment to the United States.

The settlement contractors make up a large portion of the NCAO contractors. The Mid-Pacific Region is negotiating with the settlement contractors regarding contractual water conservation planning requirements. As a result of these negotiations, the settlement contractors are not yet required to provide their Water Management Plans (Plans). In the tables below, the only reference to the settlement contractors are those who are willing to move ahead with the planning of demonstration or implementation projects and activities that will increase their operational and water delivery efficiencies. We have partnered with these contractors in an effort to move them closer to the objectives of the program.



AREAS OF FOCUS

The primary WCFSP areas of focus are to encourage contractors in the development and implementation of Plans; to promote water conservation by encouraging and expanding the water conservation education efforts; and to implement water efficient management practices.

In addition, the NCAO will introduce contractors to new techniques of efficient water management through demonstrations, education, and financial assistance; initiate demonstration project activities with willing water contractors; continue activities that establish 'leadership by example' in the water conservation and management programs; and encourage and participate in partnerships with public and private entities that have similar conservation objectives and goals.

WATER MANAGEMENT PLANNING

The NCAO offered plan preparation and technical assistance to water contractors and held workshops to discuss the progress of its programs. Of the contractors in the NCAO's service area, 14 were required to provide Plans, and 14 had Plans in place and were implementing them. Reclamation staff has met with district managers, provided presentations to district boards, and made technical assistance available for the annual planning process. Best Management Practices implementation were reviewed through Annual Updates submitted by the contractors.

Nine of the settlement contractors were working together in cooperation with Reclamation on a draft regional Plan. As a result of negotiations and the signing of a Memorandum of Understanding, the requirement to develop and implement Plans has been postponed until April 2004. Assistance was provided to several of the settlement contractors to assist in the improvement of their delivery efficiencies and canal and information management.

CONSERVATION EDUCATION

The WCFSP supported water efficiency education through many partnerships such as the Sacramento River Discovery Center (SRDC), the Turtle Bay Water Conservation Education Program in Redding (Turtle Bay), the Glenn and Tehama County Resource Conservation Districts, the Natural Resource Conservation Service, the California Department of Water Resources, the California State University at Chico, the Cal Poly San Luis Obispo (ITRC), the University of California Extension Service, and local school organizations. The staff also worked internally to encourage and educate Reclamation staff on the importance of water conservation and water use efficiency.



Reclamation has worked with SRDC staff in Red Bluff, where approximately 5,000 students and 8,000 additional visitors were presented with water education lessons, materials, and presentations. Twenty-two teachers were given a 2-day curriculum of watershed training, including the Project WET program, which they could include in their school programs. Reclamation has also initiated a water education partnership with Turtle Bay in Redding, California. The Turtle Bay has an annual public visitation of over 200,000 people. Ongoing display and educational materials are being developed for these presentations.

The NCAO staff worked with several districts to provide educational materials and training to their water users. The City of Redding received funding this year to provide water conservation materials, presentations, and training to their water users. Also, Reclamation, the City of Redding, and Turtle Bay have partnered to develop a water conservation demonstration and educational display for the students in Redding and the surrounding area.

The NCAO's Shasta office has utilized the Shasta Dam guides during the slower parts of the season to provide outreach presentations to the local schools and classes. Over the past year, Shasta Dam guides made water conservation and Reclamation history presentations to 1,800 students in 72 classes from third grade through college age.

Reclamation contracted with Cal Poly ITRC to provide professional training and assistance on canal and water management. The Information Transfer program is being expanded to develop water industry, pump, measurement, and Supervisory Control and Data Acquisition (SCADA) training facilities at California State University, Chico. These facilities will provide state-of-the-art training to Northern California students and industry on measurement, automation, and other efficient water management techniques.

DEMONSTRATION OF INNOVATIVE TECHNOLOGY

The NCAO offered cost-share grants to water contractors in order to introduce or demonstrate measurement and monitoring equipment, new technologies, and improved water or monitoring data management techniques.

The NCAO continued to experience increased interest in canal automation and operation efficiency due in large part to the SCADA demonstrations and the ITRC canal management courses funded by the Regional Office WCFSP. The SCADA demonstrations accomplished several necessary tasks while initiating real-time canal and flow monitoring for the Districts. Some of the necessary tasks were the real-time measurement of river diversions and river stage levels by Reclamation, real-time monitoring of diversions, flows, and river and canal stage by district, and real-time monitoring of pump activities by the district. The demonstration SCADA sites were the



first step of a district's SCADA program and offered encouragement to the district to expand into automated canal monitoring, control operations, and improved data management.

The Glenn County Resource Conservation District partnered with Reclamation in an effort to identify the ability of the watershed to hold increased amounts of moisture for year-round release. The study was based on the theory that improvement of native perennials' populations would increase the water infiltration into the hillside watershed soils. Anticipated multiple benefits are increased forage tonnage, soil stability, and returning annual streambeds to perennial water production. This could have the potential to become a natural water storage source.

IMPLEMENTATION OF CONSERVATION MEASURES

The NCAO tracked Plan implementation through the Annual Update process. This method allowed both Reclamation and the contractors to monitor their progress in achieving goals. The Plans identify implementation programs that are ongoing.

Anderson-Cottonwood Irrigation District implemented its canal management expansion by utilizing some experimental Doppler measurement equipment for canal management and data collection. The Reclamation District 108 implemented SCADA monitored tailwater measurement to complete its water balance calculations.

The Clear Creek Community Services District, the Bella Vista Water District, the Colusa County Water District, the Corning Water District, the Glide Water District, the Kanawha Water District, the Orland-Artois Water District, the Natomas Central Mutual Water District, the Sutter Mutual Water Company and the Westside Water District implemented handheld data management technologies. They used new software and equipment that allows the meter readers and ditch riders to enter fields and meter information electronically for direct download upon return to the office. This improved the efficiency of the information transfer by both time and quality. Also, additional information was captured (e.g. crop type, stage, applications, system troubles, etc.) for immediate recorded transfer.

Leadership by Example

A portion of the NCAO program was called "lead the field". This program was a combination of approaches. First, NCAO reviewed and upgraded its facilities for applications of low flow appliances (faucets, toilets, and sprinklers). Second, the Shasta Visitors Center was upgraded to reflect the important issues such as water conservation. Third, the Shasta Dam tour guides were utilized during the fall/winter season to make offsite presentations to school classes regarding conservation (outreach program). Fourth, the NCAO developed river depletion monitoring and management



tools on the Sacramento River system, looking for areas that can have multiple benefits by upgrading information technology through use of SCADA. This program acted as a leadership and demonstration activity that received positive response from water districts.

WCFSP OUTLOOK

The Water Conservation Program has established a firm footing with the contractors. Many contractors are planning tailwater measurement structures that will provide another piece of the water balance formula to help us identify where the water is being used. We are encouraged by the preliminary results of the Foothill Rangeland Water Storage Potential Study identified earlier. Visual reports are indicating the creeks are flowing longer and clearer, while participating ranchers are indicating increases in forage production. We are excited with the strong educational program of the SRDC in Red Bluff and Turtle Bay in Redding, and with the public and school education programs. Our educational programs are expected to reach approximately a quarter of a million people every year. The irrigation mobile lab partnership with the Corning Water District and the local Resource Conservation District in Tehama County has been well received and is expanding its reach.

The water transfer programs are active in Northern California and are facilitated by the activities and measurements that have occurred as a result of the water conservation program. Improved water management requires a substantial investment in improvements and high levels of technology. Getting these activities on the ground in the near future can only be accomplished by continued funding of the incentives programs for research, demonstrations, education, and implementation.



NCAO TABLES

Table 1 – Staff Resources		
Total number of Reclamation staff days planned		FY 2002
WCFSP coordinator staff days used		190
Support staff days used	Area office	20
	Regional office	17
	Water Resources Office	2
Total number of Reclamation staff days used in FY 2002		229
Estimated number of staff days from entities through formal agreements (i.e., other agencies or organizations) (identify)	Cal Poly (SLO)	7

Table 2 – Funding Resources for Fiscal Year 2002							
		WMC	RRA	Project O&M	EIP	Totals	% of Total Available
Annual appropriation				544,000	252,847	796,847	
Carryover from prior years							
Transfers in or out				30,000)		30,000	
Total funds available for FY 2002				514,000	252,847	766,847	100
Program administration and technical assistance							
Staff salaries and overhead	Expended			159,000		159,000	20.7
Travel	Expended			1,800		1,800	.002
Materials, supplies and other expenses	Expended			22,575		22,575	2.9
Financial assistance contracts							
Planning	Obligated			78,200	0	78,200	10.2
Demonstrations	Obligated			50,000	82,600	132,600	17.3
Implementation	Obligated			0	49,500	49,500	6.5
Education/Training	Obligated			168,552	120,500	289,052	37.7
Total financial assistance	Obligated			296,752	252,600	549,352	71.6
Other	Expended						
Total WCFSP Program	Obligated/ Expended					732,727	95.5
End of year surplus				33,873	247	34,120	4.4
Total unliquidated obligations at beginning of fiscal year							
Total unliquidated obligations at end of fiscal year							



SOUTH-CENTRAL CALIFORNIA AREA OFFICE

BACKGROUND

The South-Central California Area Office (SCCAO) encompasses 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 water service contractors, including 61 water districts, with annual allocations of nearly 6 million AF of water.

With its proximity to large urban areas such as the Silicon Valley and the Cities of Tracy, Bakersfield, Santa Barbara, and Fresno located in the heart of the region, the importance of urban water conservation is becoming more evident. The Central Valley has the fastest growing population in California; therefore, demand for Municipal & Industrial (M&I) water will continue to increase dramatically. Urban coastal water projects, which include: Cachuma, Ventura River, and Monterey, are facing salt-water intrusion, water quality concerns, low supplies, and urbanization. Because of these trends, the Water Conservation Field Services Program (WCFSP) has been addressing these areas for the past few years. The vast agriculture area of the Westside of the Central Valley must cope with reduced water supplies, environmental obligations, high water tables, salinity problems, and drainage disposal.

WCFSP AREAS OF FOCUS

WATER MANAGEMENT PLANNING

The Reclamation Reform Act of 1982 (RRA) required that each contractor prepare and implement a Water Management Plan (Plan). Contractors continued to ask for assistance in completing Annual Updates and 5-year Plan revisions that identify BMPs that have been implemented or need to be implemented in order to comply with the Criteria for Evaluating Management Plans (Criteria).

Specifically the SCCAO staff continued to provide technical assistance to area water contractors and city customers in their development of Plans and provided technical assistance in identifying water conservation issues and details of new technologies available to water contractors. In addition, SCCAO staff assisted the Regional Office in developing the Criteria, Annual Update guidelines, and participated in regional water management efforts.

CONSERVATION EDUCATION

Through cooperative agreements, water contracts and grants, the WCFSP provided financial assistance, cost-sharing and education measures to encourage the implementation of the BMPs identified in the water contractor's Plans. Cost-sharing agreements were emphasized to encourage buy-in by water use customers who were



willing to work in a partnership effort. The following conservation and education measures were financed through cost-share agreements:

- Evaluate and recommend cost-effective system improvements. (Mobile Lab field evaluations, in partnership with local resource conservation districts)
- Installation of California Irrigation Management Information System (CIMIS) weather stations to provide farmers with district-specific irrigation scheduling information
- Funding to upgrade irrigation delivery systems and irrigation facility purchases for new technology hardware for more efficient water management
- Funding for computer programs that were available for tracking water delivery data, irrigation scheduling, water use by crops, Internet software, and other water management options made available to the user for assistance in the development of on-farm strategies geared toward improved water management
- Funding to purchase Remote SCADA systems to improve water district canal operations and improve efficiency of irrigation water delivery
- Funding to purchase classroom displays, lesson plans, tours, study guides, and teachers handbooks
- Assistance for the development of in-school water awareness programs
- Funding a drought tolerant garden and Education Center at Friant Dam to educate the public on water use and irrigation techniques for conserving water
- Partnership funding for a watershed museum on the history of the San Joaquin River and its many uses for urban and agriculture

Demonstration of Innovative Technologies

Numerous grants awarded to irrigation contractors were used to demonstrate the effectiveness, water saving potential, and energy use reduction that can be obtained by the specific grant proposal. Some of these proposals provided funding for hand-held data recorders for on-site recording of water delivery data and water use totals and assistance to districts installing Variable Speed Drive units to existing irrigation pumping facilities to upgrade units and provide energy and water savings at these facilities.



Funding was also provided to contractors that had urban deliveries to retrofit home shower units with low flow parts and replace existing toilet units with improved units. In addition, leak detection kits and water use audits were handed out.

IMPLEMENTATION OF CONSERVATION MEASURES

The WCFSP encouraged implementation of any new or existing conservation measure found to have significant impact on water use by a water contractor. Partnerships were entered into with local stakeholders to assure the successful implementation of any project funded. Final reports were required from each grant recipient, and the reports were used by others to determine if a particular project could assist them in doing a better job of managing their water supplies.

WCFSP ACCOMPLISHMENTS

The results of the WCFSP are monitored through Annual Updates of Plans, grant reports, number of participants, demonstration events, and conservation goals achieved. Each proposal or activity funded is required to complete a final report detailing the project and its advantages and/or recommendations for use by others. Annual water conservation updates provide information on contractor and water user efforts regarding water conservation and BMP implementation.

WCFSP OUTLOOK

The request for assistance from agriculture and urban contractors continues at a high rate of demand. With water supplies dwindling and the threat of a drought on the horizon, water users are continuing to explore innovative ways to reduce water use or install new technology to stretch current supplies. Reclamation has entered into many partnerships in order to find ways to improve water management within the SCCAO service area. Expected requests will continue at a high pace and funding will need to be maintained at appropriate levels to keep pace with requests for assistance.



SCCAO TABLES

Table 1 – Staff Resources		
Total number of Reclamation staff days planned		FY 2002
WCFSP coordinator staff days used		88
Support staff days used	Area office	5
	Regional office	3
	Water Resources Office	0
Total number of Reclamation staff days used in FY 2002		103
Estimated number of staff days from entities through formal agreements (i.e., other agencies or organizations) (identify)	ITRC (Cal Poly)	50
	CIT (Fresno State)	15
	Consultant	30

Table 2 – Funding Resources for Fiscal Year 2002							
		WMC	RRA	Project O&M	EIP	Totals	% of Total Available
Annual appropriation		335,000	0	513,768	159,000	107,768	
Carryover from prior years		0	0	0	0	0	
Transfers in or out		0	0	150,000	0	150,000	
Total funds available for fiscal year 2002		335,000	0	363,768	159,000	857,768	
Program administration and technical assistance							
Staff salaries and overhead	Expended	0	0	110,200	0	110,200	
Travel	Expended	0	0	2,400	0	2,400	
Materials, supplies and other expenses	Expended	0	0	3,000	0	3,000	
Financial assistance contracts							
Planning	Obligated	20,000	0	0	0	20,000	
Demonstrations	Obligated	16,000	0	50,000	15,000	81,000	
Implementation	Obligated	125,000	0	30,000	108,000	263,000	
Education/Training	Obligated	163,000	0	27,000	53,648	243,648	
Total financial assistance	Obligated	324,000	0	107,000	176,648	607,648	
Other	Expended	4,800	0	20,000	0	24,800	
Total WCFSP Program	Obligated/ Expended	328,800	0	242,600	176,648	748,048	
End of year surplus		6,200	0	5,568	-17,648	109,720	
Total unliquidated obligations at beginning of fiscal year							
Total unliquidated obligations at end of fiscal year							



MID- PACIFIC REGIONAL WATER CONSERVATION TEAM

BACKGROUND

The Regional Office Water Conservation Team (Regional Team) was created in 1993 in order to expedite the water conservation provisions associated with the Central Valley Project Improvement Act (CVPIA) and the Reclamation Reform Act of 1982 (RRA) mandates. In addition, one of the main goals of the Regional Team is to provide support to the Area Office water conservation specialists in their efforts to evaluate Water Management (Plans) and promote better water management among districts.

The Regional Team continues to rely on partnerships as the underlying foundation of the water conservation program. As an active participant in the CALFED Bay-Delta Program (CALFED) Water Use Efficiency (WUE) Program, the Regional Team continues to demonstrate the importance of working with others to accomplish important objectives. Additionally, the Regional Team has continued to work closely with the Urban and Agricultural Water management Councils, several universities in California and Nevada, the State of California; and groups such as the Water Education Foundation (WEF) and the California Association of Resources Conservation Districts (CARCD), whose missions include strong water conservation goals.

Along with providing technical assistance and budget over-sight to the area offices, the Regional Team oversees the Region's water conservation planning duties. The Regional Team continues to support the introduction of new and innovative water conservation measures by providing technical and financial assistance to entities with the intention of accelerating the development, demonstration, and adoption of water conservation measures and to instill in water users and the general public a sense of stewardship of water resources.

GOALS

The Regional Team's Mission Statement:

"To 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 the context of watershed management. Cooperate with agencies and other stakeholders to be leaders in conservation."

WATER MANAGEMENT PLANNING

In 2002 the Standard Criteria for Evaluating Water Management Plans (Criteria) were revised for the third time. Section 210(b) of the Reclamation Reform Act (RRA) of 1982 required the preparation and submittal of a Water Conservation Plan (Plan) from certain entities that have entered into a repayment contract or water service contract with



Reclamation. These Plans were required to be updated every 5 years. The Central Valley Project Improvement Act (CVPIA) of 1992 required Reclamation to develop criteria to evaluate Water Conservation Plans, and to evaluate these Plans by those criteria.

Most contractors in the Central Valley Project (CVP) service area that contract with Reclamation are required to develop Plans and to have those Plans evaluated by Criteria. The Regional Team assisted the Area Office water conservation staff with the review of Plans. The Area Office water conservation specialists provide the contractors with planning assistance. The Regional Team provides oversight in the Plan review process. Once the initial review of Plans is completed, the contractor is provided with the comments and recommended changes. When the Plan is near completion, the Regional Team reviews the Plan and provides additional comments if necessary. In consultation with the Area Office specialists, the Regional Team begins the final communications with the contractor until the Plan is deemed adequate. The public is given an opportunity to review the Plan and provide comments through the Federal Register. Plans submitted by contractors located outside the CVP service area are reviewed based on the Westwide Criteria and are not noticed in the Federal Register. In 2002, 13 Plans were reviewed and noticed in the Federal Register.

By coordinating with the Agricultural Water Management Council (AWMC) and the California Urban Water Conservation Council's (CUWCC), Reclamation was able to incorporate some of the language from each council's Memorandum of Understanding. Both of these councils are key players in CALFED's WUE Program.

Through an agreement with the CUWCC, Reclamations urban water contractors who were not signatories of the CUWCC were provided guest accounts in order to submit their Annual Update on the internet via the CUWCC web site. Currently there are approximately 45 urban water districts of which 15 are signatories. Based on the success of the CUWCC's database the Regional Team created a similar Internet process for Reclamation's agricultural districts to submit their Annual Update via the WaterShare site.

CONSERVATION EDUCATION

Education and outreach are key components in providing the public with the opportunities and benefits of better water management of our natural resources. The Regional Team promotes this concept by giving presentations, supporting programs that reached a broad audience, and encouraging continuing education courses for district staff and board members. Through various partnerships created by the Regional Team, districts are able to provide these opportunities to their customers. These partnerships include: the Denver Technical Service Center, the Fresno State Center for Irrigation, Cal Poly's Irrigation Training and Research Center, the American Water Works Association and WEF, to name a few.



A broad audience is reached through Reclamation's virtual water conservation center, entitled "WaterShare." This website was recognized in 1999 as the Best Government and Law website at the Third Annual Sacramento Web Awards. With the help of contractor staff, the Regional Team pioneered the site, which is now maintained by Reclamation staff. In 2002, efforts focused on updating the website and the "Ag Annual Update" database for reporting Annual BMP Implementation in addition to listing new water conservation documents that were developed.

The Regional Team continued to provide technical and financial assistance to the American River Water Education Center (ARWEC) in Folsom. The ARWEC assists in fulfill Reclamation's obligation under the CVPIA to provide a water conservation center. The ARWEC was created in 1999 and has proved to be a valuable water education resource to the neighboring community. In addition to the ARWEC, the Regional Team continued to support Project WET in California and also maintained the WaterLearn programs including water conservation related school lesson plans on Reclamation's "WaterShare" website.

Through various publications, the Regional Team was able to reach water districts and other stakeholders. The Conservation Connection, which is a quarterly newsletter that targets water conservation specialists, was redesigned this year and brought completely in-house. The newsletter, first published 1994, recognizes people and organizations that are effective in the Region's water use efficiency industry. Each issue of the newsletter contains a calendar of events, highlights on a person in the water conservation industry, recognizes a water district that demonstrates innovative technology or demonstrations, provides tips for conserving water, and covered many issues related to water use efficiency. Over 900 copies of the newsletter are distributed each quarter in an effort to be an informative vehicle in the water industry.

DEMONSTRATION OF INNOVATIVE TECHNOLOGIES

Demonstration projects provide an opportunity to explore and validate innovative water conservation practices that can be accelerated by the improved management of water in the Region. During 2002, the Regional Team funded demonstration projects through partnerships with the CUWCC, the DWR, the Fresno State CIT, water Districts, and the ITRC. Examples of these projects include:

1. Cal Poly Irrigation Training and Research Center – Cal Poly has continually proven to be a leader in improved water management and irrigation efficiency. This agreement allows for assistance in the desperately needed Klamath Basin.



2. Chico State Center for Irrigation Technology – to enhance irrigation efficiency infrastructure at the University Farm. CIT will provide educational opportunities for agriculture, water districts, and the neighboring water community.
3. In 2002 a Challenge Grant with the Natural Heritage Institute came to a conclusion. The project was a series of collaborative field demonstrations of the efficiency and practicality of financial incentives for agricultural water conservation.
4. The Regional Team provided funds to the Area Offices who have partnered with various districts on innovative technologies including continuation of SCADA, variable speed drives, xeriscaping, new meter technologies, etc...

IMPLEMENTATION OF CONSERVATION MEASURES

In past years, the Regional Team has provided funding for BMP implementation and various other programs designed to encourage water conservation. However, with the implementation of the WCFSP, the area offices have taken the lead on these activities. To demonstrate support of these efforts, the Region Team maintained contracts with various entities that provided technical assistance directly to the water districts. Additionally, the Regional team worked closely with the CUWCC and AWMC to sponsor additional programs, which fostered the implementation of appropriate water management efforts.

WCFSP ACCOMPLISHMENTS

In FY 2002, Reclamation entered into a three-way, three year agreement with CALFED, DWR, and the CUWCC to assist in developing a program of technical and financial incentives for water use efficiency in the urban sector. The objective of the agreement was to expand the benefits through broad participation by urban suppliers, including preparation of comprehensive and consistent Plans and BMPs. By signing the agreement, the CUWCC committed to providing technical assistance to urban water suppliers to implement the first 4 years of the CALFED WUE program.

As the role of the CUWCC has expanded over the past few years, Reclamation has contributed financially toward the development of a strong future for this consensus-building organization. Also, Reclamation staff participated actively on various committees within the CUWCC. In addition, Reclamation funded numerous projects that assist in the implementation of the BMP's.

The Regional Team has actively participated in the CALFED WUE Program. The CALFED ROD identified Reclamation as a co-lead of this program. Reclamation assisted DWR with their Proposition 13 Urban Water Conservation Program. As a result of this



Proposal Solicitation Package, 25 WUE Projects were selected and received approximately 18 million dollars in grant funding.

In 2002, Reclamation renewed the cooperative agreement with the ITRC. The new agreement includes an additional 2 years of support from the ITRC. The ITRC has in the past provided classroom training, on-site investigations and problem solving for water distribution systems, measurement, and new technology demonstrations. The ITRC also provides general technical assistance to entities that contract with Reclamation for water. 2002 Reclamation continued with the second year of the three-way, three year agreement with the AWMC to in developing a program of technical and financial incentives for water use efficiency in the agricultural sector. The AWMC in coordination with David's Engineering develop d a process for integrating CALFED quantifiable objectives (OQs) in the water management planning process. These OOs have been incorporated in the 2002 Standard Criteria for Evaluating Water Management Plans, and are planned to be in the Refuge Criteria.

This 2002 annual report for the WCFSP provides an analysis of the programs accomplishments and demonstrates that the WCFSP is meeting its' stated goals and objectives. Another reporting mechanism is through the Government Performance and Acts (GPRA) 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. The Regional Team continues to stress the importance of planning, education, demonstration, and implementation of water use efficiency programs. The outlook below outlines the Regional Team's plans for the upcoming year.

WCFSP OUTLOOK

Specific areas of emphasis in FY 2003 are listed below:

- The Regional Team will work closely with CALFED agencies and the Area Offices to implement the CALFED WUE Program.
- The water conservation staff will strive to get all required Plans completed by the end of the year.
- The Regional Team will continue its close relationship with the NRCS, the DWR, and the RCDs to coordinate efforts and maximize water management benefits.
- The Regional Team will work closely with the AWMC and CUWCC to further the training of water conservation coordinators and to find cost effective opportunities to promote water conservation efforts in California.
- The Regional Teams will take on the responsibility of implementing the Criteria for reviewing Refuge Plans prepared by approximately 15 Federal and State Refuges.
- The Regional Team will work with the Settlement Contractors to develop Regional Criteria for the Sacramento Valley.