



Conservation CONNECTION



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Calendar of Events

The Bureau of Reclamation (Reclamation) teamed up with the Center for Irrigation Technology (CIT) at California State University at Fresno to develop a program to assist growers in meeting their irrigation needs. The first step was to survey local growers to identify their needs. Of the 445 growers that participated in the survey, 219 were located east of Highway 99 and 226 growers were located west of the Highway. The survey, consisted of 25 questions, focusing on current irrigation practices, water management problems and resources, and the need for irrigation improvements.

The study concluded with some very interesting findings, including the fact that drip irrigation has more than doubled over the past 10 years. Less than 25 percent of farmers surveyed measure the water delivered to their fields and most of the growers use soil moisture or plant observations to schedule irrigations with less than 10 percent using irrigation scheduling software or the Internet.

With respect to financial issues, more than 60 percent of the farmers surveyed stated that financial assistance is critical to pay for costly irrigation system or management improvements. However, the largest percentage of growers believes low interest loans are the best form of assistance from government agencies. More than 25 percent believe that funding research programs would benefit everyone.

Three major factors affecting the ability of growers to irrigate are difficult soil conditions, insufficient water quality, and improperly graded fields. When asked what type of improvements growers would make to their irrigation systems if they were provided with a zero or low-interest loan, approximately 40 percent replied that they would install a drip or micro-irrigation system. Currently, 70 percent of the growers reported that they do not anticipate making any immediate changes and approximately 40 percent responded that they are aware that they could make improvements.

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Articles, ideas, and suggestions are welcome, as are notices of upcoming events, meetings or activities. We reserve the right to edit material, and publication is not guaranteed. Please send all material to Shani Lee at the above mailing address or via e-mail at svlee@mp.usbr.gov.

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If You Don't Want to Drink It, Don't Dump It

By Lucille Billingsley



Fluvia, James Pond, and Dr. Drip

The Regional Water Authority and the Sacramento Storm Water Management Program sponsored a pilot project for school children in grades 3-6 on water education. These performances were presented by the Sacramento Theater Company at various local schools within the Sacramento area.

Recently, the Sacramento Theater Company performed at the Nicholas Elementary School in Sacramento. The production began with an introduction of Fluvia the Mermaid. Fluvia then proceeded to introduce the rest of the cast, who consisted of Mr. Leaky and Sammy, the Talking Fish. Sammy, as most of you have probably seen, is in many commercials dealing with where not to dump your pesticides, oils, and toxic run-off wastes.

This performance's main topic of discussion was on storm water; particularly what it is and where it goes.

The presentation also covered topics such as water and air pollution. Fluvia reminded the audience not to hose down their driveways and explained what is on driveways, and how it enters the storm drains and pollutes the nearby rivers and streams. As Fluvia says, "Remember if you don't want to drink it, don't dump it!"

The audience excitedly participated when Fluvia questioned the children on how they could conserve water. Some suggestions included:

- Checking home for leaks
- Running the dishwasher with a full load
- Shorter showers
- Don't be a "gutter flooder"

Dr. Drip, water's worst enemy, made an appearance and encouraged the children to waste water. Luckily, Fluvia had taught the children wisely and with the new knowledge they gained, they were able to readily dismiss Dr. Drip's advice. The children were very enthusiastic about the presentation and thoroughly enjoyed the show. The entire Water Education Tour cast deserves huge recognition for their inventive way of introducing water conservation to our children. Well Done Sacramento Theater Company, the Regional Water Authority, and the Sacramento Storm Water Management Program!



Nicholas Elementary School students enjoying the assembly

The Bureau of Reclamation would like to thank the Nicholas Elementary School for allowing us to attend their presentation and photograph the children. We would also like to acknowledge the wonderful cast of Water Education Tour (WET): Jamie Kale, Mark Garbe, Nathan Aaron Place, and Kristina Rodriguez.

RiverTeachers



Carlyle Holmes as "Detective Drizzle" presenting "the Great Water Mystery" to students at Mt. St. Mary's School in Grass Valley

The South Yuba River Citizen's League (SYRCL) has created an exciting new educational program entitled "RiverTeachers." RiverTeachers is a public education environmental awareness program sponsored by the SYRCL in cooperation with the National Marine Fisheries Service and reaches schools throughout the region. By bringing information about rivers and fish to students in grades kindergarten through high school, RiverTeachers is able to educate in a fun and interactive way. This exciting program brings assemblies and shows that include slides, demonstrations, and humorous interactive elements into the classroom at no cost to the schools.

Carlyle Holmes, the writer, actress, and educator of the show is SYRCL's RiverTeachers Director. "The RiverTeachers Program was designed in December of 2000, and we ran our first pilot assemblies in the spring of 2001," said Holmes, "After the pilot phase, we launched our free assembly

program in September 2002. Since the RiverTeachers Program was designed, we have reached over 5,000 students with our two assemblies."

Prior to developing this program, SYRCL was looking to provide educational experiences that deepened students' knowledge of their surroundings, fostered their connection with the Yuba River watershed, and inspired them with a sense of responsibility for the health of the watershed and the salmon population. With the creation of RiverTeachers, children have been exposed to the history of water including topics such as recycled water, watersheds, and the hydrologic cycle.

The RiverTeachers Program focuses on two main objectives: the concept of a watershed and providing opportunities for students to learn about salmon. The program aims to provide members of the community, adults and children alike, with quality information and the skills and motivation they need to make informed decisions about watershed stewardship.

The assemblies last 45 minutes to an hour and meet both State and national science standards. For each assembly, SYRCL has compiled a packet of pre-assembly activities and follow-up ideas for teachers interested in expanding on the experience. In *The Great Water Mystery*, students follow Detective Drizzle on a search for clues about a mysterious substance - water. The mystery leads them through the water cycle and the Yuba River Watershed where they meet a number of watershed residents and learn what they can do to keep our watershed healthy. Consider inviting the *The Great Water Mystery* to a school in your area!

Providing opportunities for students to explore



"Detective Drizzle" defining a watershed to Mt. St. Mary's students

For more information about the RiverTeachers program or to schedule a presentation, please contact Carlyle Holmes at 530-265-5961 or carlyleholmes@hotmail.com

Chico State Opens a New Irrigation Training Facility

By Dennis Perkins

On May 16, 2003, approximately 50 people were on hand to hear presentations and dedications from the heads of the Agricultural Departments at Cal Poly San Luis Obispo (Cal Poly), Fresno State University, Chico State University, and the Bureau of Reclamation. The occasion represented a significant teaching partnership that was formed between the Agricultural Departments of the three universities.



Dean Charles Crabb of CSU, Chico's College of Agriculture and the USBR's Northern California Area Office manager Mike Ryan

Chico State, in partnership with the Bureau of Reclamation, the California Public Utilities Commission, Cal Poly, Fresno State, Durham Pump, North State Pump Companies, and Concepts in Controls, Inc., constructed a state of the art facility for water and pump management training. Labeled the "Irrigation Training Facility," it's mission is to provide a place for irrigation automation and pump training, using the classroom, the Supervisory Control and Data Acquisition (SCADA) equipment, and the demonstration pump and canal control systems. Cal Poly and Fresno State have already provided seminars to industry personnel from agriculture and irrigation districts on SCADA and pumping efficiencies. Future seminars will be offered by professional staff from Cal Poly, Fresno State, and Chico State forming a unique and powerful partnership that will bring educational opportunities to the north State that have never been available.

The event was significant in the history of the CSU Chico Agricultural program because of the banding together of a community of universities to meet the needs of the agricultural community. In Chico, the switch was thrown on a new era of community and university involvement as well as on the new Irrigation Training Facilities on the Chico State farm. Thanks to this partnership, there is now a place for Northern California agriculture to meet and share water management technologies, ideas, and research.

Continued from Front Page

These findings will be combined with other information being gather by the U.S. Department of Agriculture's Natural Resource Conservation Service through funding from the CALFED Bay-Delta Program to determine what types of technical and financial assistance agencies can provide to assist growers in improving their irrigation management. For complete survey results, please visit Reclamation's MP-Region WaterShare website at www.watershare.mp.usbr.gov/documents.

Irrigation System Types

	Current	10 years Ago
Flood	59	74
Sprinkler	14	14
Drip	26	12

The table above displays the contrast between Irrigation System Types being used today as opposed to 10 years ago.

For more information, please call CIT at 559-278-2066.

Drought Planning

When asked to define what a “drought” is, the typical response is “no water” or “it only happens in California and the West.” However the reality is, droughts are normal and recurrent features of climate conditions. Believe it or not, droughts can occur almost anywhere and where there is the potential for drought, there is a need for water shortage contingency plans.

Due to increasing demands for water throughout the west, the Bureau of Reclamation (Reclamation) has identified a need for providing assistance to water users in preparing and implementing a “Water Shortage Contingency Plan.” Through the Water Conservation Field Services Program (WCFSP), a survey was conducted in early 2003. The purpose of this survey was to gather information from water user organizations regarding their immediate needs and how the WCFSP can best meet these needs. The results of this survey surprised Reclamation representatives because while we anticipated the need for more information, the reality was that one of the major impediments to drought planning was the cost. Districts found it difficult to justify the costs of planning for a drought sometime in the future versus the immediate needs for their limited funds. The results of the survey are posted on Reclamation’s WaterShare web site at: http://www.usbr.gov/mp/watershare/reports/wtr_shortage_drought_survey.pdf .

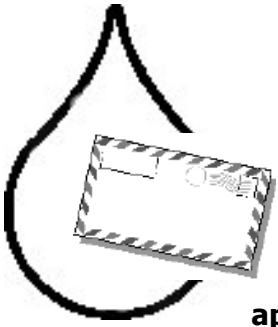
You may ask why plan for a drought or prepare a Water Shortage Contingency Plan? According to the National Drought Mitigation Center, located at the University of Nebraska-Lincoln, the impacts of drought are greater than the impacts of any other natural hazard. They are estimated to be between \$6 billion and \$8 billion annually in the United States and occur primarily in agriculture, transportation, recreation, tourism, forestry, and energy sectors. Social and environmental impacts are also significant, although it is difficult to put a precise cost on these impacts. Society’s vulnerability to drought is affected by (among other things) population growth and shifts, urbanization, demographic characteristics, technology, water use trends, government policy, social behavior, and environmental awareness. These factors are continually changing and society’s vulnerability to drought may rise or fall in response to these changes. For example, increasing and shifting populations put increasing pressure on water and other natural resources—more people need more water. You can learn more about the National Drought Mitigation Center through their web site located at: <http://www.drought.unl.edu/> .

Reclamation has also funded a Drought Planning Guidebook which is available at: http://www.usbr.gov/mp/watershare/documents/Contingency-Drought_Planning.pdf .



What is a non-point source of pollution?

When pollutants get into the groundwater and surface water and the source is diffused rather than concentrated it is referred to as a non-point source. For example, wild animals may cause pollution, but this would be a non-point pollution source.



Conservation Talk

Q: Where can I find useful information on how much water I should apply to my lawn?

A: WATERIGHT, a website developed by the Center for Irrigation Technology (CIT) at California State University, Fresno, in cooperation with Reclamation, provides plenty of information on how much water to apply to lawns. WATERIGHT is designed to be a multi-function educational resource for irrigation water management. In addition to providing information for homeowners, WATERIGHT also provides valuable water management information for commercial turf growers and production agriculture.

An important resource of the site is the irrigation scheduling programming that helps users develop site-specific, seasonal irrigation schedules. WATERIGHT is connected to the California Irrigation Management Information System (CIMIS) and the AgriMet System in the Northwest states of Washington, Idaho, Montana, and Oregon. These weather stations provide the scheduling routines with reference evapotranspiration data for specific areas.

Log onto WATERIGHT today to gain useful knowledge about your lawn at www.wateright.org.

This section was created for those that have questions pertaining to water conservation practices or water-use efficiency matters. If there is anything that you would like to ask our water conservation specialists, please send an e-mail to svlee@mp.usbr.gov or send your questions in writing to the address on the front cover.

Contact Us...



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ITRC Presents Inaugural Advanced SCADA Short Course

The Cal Poly Irrigation Training and Research Center (ITRC) presented a week of advanced Supervisory Control and Data Acquisition (SCADA) training March 17 through March 22, 2003. SCADA is a system that provides automation of a district's distribution system control structures and monitoring of water flows and quality. The course, which attracted twenty-five participants from around the country, covered monitoring, sensors, communications, and control of the SCADA system. Organizations represented included several California irrigation districts, the Environmental Protection Agency, the U.S. Department of the Interior—Bureau of Reclamation, and the City of West Sacramento, as well as manufacturers of SCADA related equipment and private consultants. The funding for the course was provided by Reclamation's Mid-Pacific Region.



Billy Carter (Imperial Irrigation District), Scott Edwards (Lindsay-Strathmore Irrigation District), and Brad Laffins (Chico State University) program their HMI software at the new Cal Poly SCADA lab.

The week-long class is a new offering by the ITRC. In addition to the "introduction" to SCADA that has been offered for several years, participants were introduced to advanced SCADA topics and given the opportunity to test their skills in the recently completed electronics lab at Cal Poly. The new lab has 10 complete SCADA workstations, allowing for unprecedented "hands-on" electronic training.

The short course, intended for non-SCADA professionals, led participants through the use and installation of the Programmable Logic Controller (PLC), Human-Machine Interface (HMI), SCADA communications, sensors, and SCADA startup and troubleshooting methods. New techniques developed for this class included secure communication with the SCADA system through the Internet, linking cameras for water security purposes, and demonstrating radios to make these new processes work. Comments from the participants included:

"I felt that the instructor did a very professional job of covering materials provided. He was very knowledgeable and encouraged questions and participation from the attendees. I wish I could have attended a class like this several years ago."

"Great class! Keith Crowe is an excellent speaker. I enjoyed and appreciated the various comments/questions from the other participants. Fantastic single-point contact for getting a wealth of information on what works (or doesn't)."

The new knowledge gained at the class will help the participants gain a better understating of how to manage and maintain the telemetry systems that have become so important to improving the efficient use of water and power in agriculture.

For more information on upcoming classes, please visit the ITRC website at www.itrc.org or contact the Cal Poly ITRC SCADA specialist, Keith Crowe, at 805-756-2431.



Calendar of Events

<p>RECLAMATION'S WATER 2025 CONFERENCE July 10, 2003 Hilton Arden West Sacramento, California For more info, call 916-978-5104 Or log onto: www.usbr.gov/mp/water2025/</p>	<p>CALIFORNIA URBAN WATER CONSERVATION COUNCIL PLENARY SESSION September 9, 2003 Inland Empire Utilities Agency Chino, California For more info, call 916-552-5885 Or log onto: www.cuwcc.org</p>
<p>RECLAMATION'S REFUGE CRITERIA WORKSHOP July 23, 2003 BOR MP-Regional Office Sacramento, California For more info, call 916-978-5557</p>	<p>PUMP EFFICEINCY TESTING CLASS September 9 - 10, 2003 ITRC San Luis Obispo, California For more info, call 805-756-2434 Or log onto: www.itrc.org</p>
<p>DESIGNER / MANAGER SCHOOL OF IRRIGATION COURSES August 14 – September 5, 2003 ITRC San Luis Obispo, California For more info, call 805-756-2434 Or log onto: www.itrc.org</p>	<p>WATER EDUCATION FOUNDATION'S NORTHERN CALIFORNIA TOUR September 24 - 26, 2003 For more info, call 888-666-2292 Or log onto: www.watereducation.org</p>



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