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**TRES RIOS FLOW REGULATING  
AND OVBANK WETLANDS**

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# The Environment as a Paying Water Customer: Connecting Water Conservation to Environmental Water Needs

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*Tucson Audubon is conducting a wildlife habitat enhancement project at Esperanza Ranch on the Santa Cruz River (photo credit: Ann Phillips). ▼*

## THE UNIVERSITY OF ARIZONA WATER RESOURCES RESEARCH CENTER'S ENVIRONMENTAL RESEARCH PROGRAM

Whether due to drought, climate change or increasing demands for water, water supplies are predicted to fall short of demands in many parts of Arizona. Water professionals frequently see pie charts showing agricultural, industrial and municipal water use, but environmental water use is rarely quantified. Yet there are many efforts across the state to preserve or enhance Arizona's environment. These efforts need funding to bring the environment to the table as a water customer. Building upon its research on Arizona's environmental enhancement efforts, the University of Arizona's Water Resources Research Center (WRRC) has developed the *Conserve to Enhance* program concept. Funded by the U.S. Bureau of Reclamation, the *Conserve to Enhance* mechanism links voluntary municipal water conservation with funding water for the environment (Schwarz and Megdal 2008). This innovative mechanism supports environmental enhancement projects by offering municipal water customers the option of donating the money they save through voluntary water conservation actions to selected enhancement projects. A complementary endeavor, the Statewide Environmental Water Needs Assessment, aims to address an additional need for technical coordination of the environmental flows efforts being undertaken in Arizona.



*Tucson Audubon and the City of Tucson are enhancing wildlife habitat at the Simpson Farm along the lower Santa Cruz River (photo credit: Arizona Water Protection Fund). ▼*

## CONSERVE WATER, ENHANCE THE ENVIRONMENT

*Conserve to Enhance* was developed to link water customers' interest in water conservation with their interest in benefiting the environment. Environmental concerns motivate many water users to conserve, but no mechanism currently exists to allow customers to ensure their conservation efforts will directly benefit the environment. Thus, the average citizen may be more likely to participate in a water conservation program when the program is connected with environmental benefits. A *Conserve to Enhance* mechanism will make conservation programs more effective by offering a more complete link between individual water use behavior and creating a more sustainable water future.

## PILOT PROGRAMS IN ARIZONA

Through collaborative efforts with local governments and non-governmental organizations, pilot programs of *Conserve to Enhance* are in development in Tucson and Prescott, Arizona. Both pilot programs will be launched in the fall of 2010. Each pilot program is tailored to the community's assets and water conservation opportunities. A Tucson *Conserve to Enhance* pilot program will leverage subsidies for rainwater harvesting to entice homeowners to participate in and make contributions to the *Conserve to Enhance* fund. The City of Prescott's Parks *Conserve to Enhance* pilot program will target water reductions at municipal parks, one of the city's highest water users, in order to generate funds for improving management practices that affect watershed health. Additional pilots are under discussion in other communities across the West.

During 2009 and 2010, outreach efforts have been targeted to reach communities in the region with an existing interest in water conservation. Outreach was also done to increase awareness about *Conserve to Enhance* in communities where partners were interested in establishing pilot programs. As part of these efforts, The *Conserve to Enhance* concept was presented to 17 local and regional audiences during 2009 and 2010, including at the WaterSmart Innovations Conference held in Las Vegas in October 2009.

In response to outreach efforts, the Sonoran Institute (SI) and Watershed Management Group (WVG) came forward in early 2009 with interest in establishing a local pilot program in Tucson. WRRC staff worked with these non-profits to develop a basic program outline and consider potential funding sources to support development of critical pilot program elements. As part of developing funding proposals, discussions about pilot program design were initiated with the City of Tucson and Tucson Water. With the help of these partners, outreach materials and a program administration plan have been developed for the pilot program. Grant proposals have been submitted to fund development of a web-based calculator to track participants' water savings. Establishing a pilot program requires time to develop partnerships, determine program design, and make plans for managing the program. In the Tucson example, program development work will have taken almost



two years when the pilot launches this fall.

Because a *Conserve to Enhance* program may enhance currently funded projects in water conservation or environmental improvement, program partners may be able to identify complementary funding sources within their organization for pilot program elements. Additionally, water utilities that are concerned about supporting conservation to the point that they suffer lost revenues may find a *Conserve to Enhance* program appealing, as it may result in revenues from purchases of water for the environment using generated funds.

Issues raised in one community can inform development of programs that are appropriate for other communities' situations. University of Arizona personnel are equipped through years of concept development to provide the information and analyses necessary for successful program design, implementation and evaluation. Our involvement also can ensure that pilot programs are connected and all are able to take advantage of opportunities for learning from each other's experiences. The *Conserve to Enhance* programs offer communities a way to increase awareness of both water conservation potential and environmental water needs.

## THE ENVIRONMENT AS A WATER SECTOR – A STATEWIDE ASSESSMENT

Despite recommended measures from the Governor's Water Management Commission (2001) to improve riparian protection in Arizona, rivers and riparian areas have limited rights to water under Arizona's water management system. Riparian and aquatic areas provide important ecosystem functions, which have economic and social value (Morrison 1998, Colby and others 2005).

In order to further increase understanding of environmental water needs and inform sustainable water management in Arizona, the WRRC is conducting an assessment of the water requirements of Arizona's riparian areas and aquatic ecosystems during 2010. The one-year effort is funded by the Nina M. Pulliam Charitable Trust. The assessment will provide a systematic synthesis of information to use in local, regional, and statewide discussions about meeting the water needs of desert river and riparian systems. This information and analysis provide the technical knowledge needed to increase our collective ability to conserve, preserve, and possibly restore riparian and aquatic habitats.



*Nina Mason Pulliam Rio Salado Audubon Center is part of the City of Phoenix Rio Salado Habitat Restoration Area on the Salt River (photo credit: Arizona Audubon).*

## RESOURCES IN DEVELOPMENT FOR UNDERSTANDING ENVIRONMENTAL WATER NEEDS

This assessment will lay the groundwork for incorporating environmental water needs into future state water planning efforts. This effort will introduce systematically assembled information about environmental impacts to local and statewide water management efforts. A guidebook to environmental flows methodologies will assist decision makers in understanding the science used in environmental flow studies. The project will also facilitate efforts to address gaps in information about environmental water needs in Arizona. Once the initial report is completed, bulletins and reports can be created from the assessment for use by the public, the media, water policy professionals, and environmental experts.

The WRRC is completing this environmental water needs assessment with the involvement of an Advisory Committee, comprised of environmental flows experts, which is providing general guidance throughout the project regarding compilation of relevant datasets and interpretation of results.

## GUIDING EFFORTS TO ADDRESS ENVIRONMENTAL WATER NEEDS

Through the statewide assessment, the program will identify opportunities where innovative mechanisms, such as *Conserve to Enhance*, are needed to generate funds to purchase water for the environment. A key element in implementing a *Conserve to Enhance* pilot program is identifying specific rivers or environmental enhancement projects that will receive funds from the program. Information about the environmental benefits associated with various flows, provided by the statewide assessment, will support a more informed decision-making process for selecting receiving projects.

The WRRC's environmental research program is designed to assist communities across Arizona with including environmental water needs in efforts to achieve sustainable water management. By providing innovative technical resources and funding mechanisms to Arizona's water managers, we hope to arm Arizona's leaders, scientists, and citizens with the tools needed to address the environment's water needs, while they balance demands for water from other sectors.

Please visit our website for background resources on this topic: [www.cals.arizona.edu/azwater/conservetoenhance](http://www.cals.arizona.edu/azwater/conservetoenhance). If you are interested in establishing a *Conserve to Enhance* pilot in your community, or in receiving updates about the Statewide Environmental Water Needs Assessment, please contact the authors.