



*Breaking news about water resources research and education at Texas universities*

**October 31, 2007**

### **CIRE meeting initiates irrigation education and research consortium**

The initial meeting of the Consortium for Irrigation Research and Education, CIRE, was held October 29-30 in College Station to discuss the concepts, objectives and other possible participants in the newly developed group. CIRE is an effort to provide better coordination of irrigation research and Extension activities throughout Texas. It will enhance internal communication and sharing of information about ongoing irrigation projects and will create opportunities for collaboration and development of joint projects. These efforts will contribute to optimizing programs to improve irrigation management and provide for broad-based water use education and irrigation training throughout the state.

CIRE is a group for anyone involved in irrigation research or education programs, and involves members from Texas A&M University, Texas Tech University, West Texas A&M University, Texas A&M Kingsville and USDA Agricultural Research Service. Texas Water Resources Institute will facilitate CIRE.

If you would like more information or would like to be included on the CIRE mailing list, please e-mail Danielle Supercinski at [DMSupercinski@ag.tamu.edu](mailto:DMSupercinski@ag.tamu.edu).

### **TWRI grant recipient studies restoration practices on urban streams**

*By Kari Miller*

Texas A&M graduate student Megan Meier is working with her advising professor Dr. Rick Giardino to analyze the impact of restoration practices on the stability of streams in Austin, Texas.

Meier, a recipient of a \$5,000 2006-2007 Texas Water Resources Institute (TWRI) research grant, said that rapid urban growth in Austin has led to increased runoff and erosion in the stream channels, leading to property damage.

"Although much attention is given to the 'remarkable' positive impact of stream restoration, few studies have investigated the effect of restoration practices on the stability of urban stream channels," Meier said.

According to Meier's report, Austin has restored approximately 30 channel reaches since the late 1990s. Meier's study focused on three of them, the Bartholomew Park site, the Lovell Drive site and the Shipe Park site.

Meier's analysis consisted of mapping the land cover of the drainage basins and collecting channel hydraulic data from the restored reaches. She also mapped and evaluated the channel conditions using Pfankuch channel stability evaluation protocol and repeat ground photography. Finally, she compared the results to pre-restoration data from the City of Austin and to current conditions of unrestored sites on the same channel.

"Results thus far show that restoration has enlarged the channel capacity and increased the width to depth ratio," she said. "Basically, these results indicate that restoration efforts are working on the streams assessed for this project."

Meier said the data from this study will provide the basis for longer-term monitoring and evaluation and will allow managers to improve current and future stream restoration projects in Texas and elsewhere.

Meier said that she became interested in pursuing a stream restoration project after taking geomorphology classes from Giardino and Dr. Anne Chin. She hopes to finish her research this fall and receive her master's degree in May.

Her research was funded by TWRI through the U.S. Geological Survey as part of the National Institutes for Water Research annual research program. TWRI is the designated institute for water resources research in Texas. For more information on Meier's research, visit <http://twri.tamu.edu/usgs-recipients/2006-07/>.

### **SWAT used in The Nature Conservancy/IBM river basin management project**

The Soil and Water Assessment Tool, SWAT, a computer model developed by scientists from The Texas A&M University System's Texas Agricultural Experiment Station and U.S. Department of Agriculture's Agricultural Research Service, will be one of the main environmental and policy analysis tools in a river basin management project being developed through a The Nature Conservancy and IBM partnership.

Launched in April 2007, the project will provide easy access to data and computer models that support resource managers, policymakers and scientists in their efforts to manage large rivers and their watersheds, according to a conservancy news release.

Working through The Nature Conservancy's Great Rivers Partnership, the conservancy and IBM are building a new computer-modeling framework that will allow users to simulate the behavior of river basins around the world to help decision makers make informed policy and management decisions that conserve the natural environment, the release said. The proposed system will provide access to wide-ranging data on climate, rainfall, land cover, vegetation and biodiversity and enable stakeholders to better understand how policy decisions impact water quality and ecosystem services.

Dr. Raghavan Srinivasan, director of the Spatial Sciences Laboratory at Texas A&M University and one of the developers of SWAT, said that this activity is one of the major milestones in getting the computer-based models to apply worldwide policy analysis through world-renowned organizations such as The Nature Conservancy and IBM.

"This project will continue to bring the SWAT model to the world stage as a global water resource assessment tool," he said.

## **TWRI grant recipient studies the cultural aspects of water quality in Austin**

*By Kari Miller*

The University of Texas graduate student Andrew Karvonen is working with his advising professor Dr. Steven Moore from the School of Architecture to study the historic and current meaning of water to different social groups in Austin, Texas.

Karvonen, originally from Minnesota and a recipient of a \$5,000 2006-2007 Texas Water Resources Institute (TWRI) research grant, said that he is performing case study research to understand the political and cultural aspects of urban water quality.

"A guiding concept of my research is that urbanization is not the end of nature but rather a renegotiation between humans, nature and technology," he said.

According to his final report, highly contentious political debates have revolved around water quality in Austin since the 1970s. These debates demonstrate the intertwining of nature, society and technology in modern societies and the challenges that communities face in appropriating new conceptions of environmental quality. Engagement in practices such as urban creek restoration, trail building and more environmentally benign forms of landscaping are potential pathways to further pursue water quality in the Austin culture.

"Hopefully, my research can be used by planners and engineers to plan new infrastructure networks that balance the needs of the multiple actors who use these systems," Karvonen said. "I hope that my study highlights the importance of urban nature and encourages urban residents to reflect on the natural elements that are an important part of their cities."

Karvonen said he hopes to complete his doctorate and then obtain a teaching and research position in a university setting where he can continue to explore how nature, technology and society interact in urban settings.

His research was funded by TWRI with funds obtained through the U.S. Geological Survey as part of the National Institutes for Water Research annual research program. TWRI is the designated institute for water resources research in Texas. For more information on Karvonen's research, visit <http://twri.tamu.edu/usgs-recipients/2006-07/>.

## **TWDB hosts REFLECTIONS, Water Summit 2007**

The [Texas Water Development Board](#) is celebrating its 50th anniversary by hosting REFLECTIONS, Water Summit 2007 at the Henry B. Gonzalez Convention Center in San Antonio, Texas, on December 2-4, 2007. More than 60 speakers will be presenting on a wide variety of water-related topics covering science and technology, infrastructure financing, planning and economics, water conservation and water law.

Special guest speakers include The Honorable Kip Averitt, chair of the Texas Senate Natural Resources Committee and member of the Senate Finance Committee; The Honorable Robert Duncan, chair of the Texas Senate State Affairs Committee and member of the Senate Natural Resources Committee and Senate Finance Committee; The Honorable Robert Puente, chair of the Texas House Natural Resources Committee; and The Honorable Phil Wilson, Texas Secretary of State.

For conference registration and the pre-event brochure, please visit:

<http://www.twdb.state.tx.us/about/watersummit/index.htm>.

### **Grant makes environmental study possible**

Texas Tech University researchers are preparing to cover new ground in a relatively new area of environmental study. The U.S. Environmental Protection Agency funded \$433,000 to the [Texas Tech School of Law's Center for Water Law and Policy](#) for the study of particular types of potentially harmful contaminants frequently found in wastewater.

Audra N. Morse, assistant professor at the [College of Civil and Environmental Engineering](#) and a member of the research team, said a large portion of the research is geared to look at endocrine disrupters and pharmaceutical contaminants, which are chemicals found in household items such as body wash and shampoo.

To read the complete story, visit [The Daily Toreador](#) at <http://media.www.dailytoreador.com/>.

### **New Mexico Water Resource Research Institutes hosts 52<sup>nd</sup> annual conference**

The [New Mexico Water Resource Research Institute](#) is hosting its annual water conference on November 29-30 in Santa Fe. The two-day meeting provides a public forum for the discussion of important and often critical state water issues. Registration fee includes all conference functions including the dinner banquet and a copy of the proceedings on CD published after the conference.

Regular registration by November 16 is \$225. After November 16 and at the door is \$250. For more information about the conference, please visit <http://wrrri.nmsu.edu/conf/confsymp.html>.

### **Extension's statewide rainwater harvesting efforts flow toward future**

As surface water and groundwater resources become more limited, rainwater harvesting will keep springing up as part of a long-term solution to water woes, said [Texas Cooperative Extension](#) experts.

"Rainwater harvesting reduces the demand on the available fresh water supply," said **Dr. Bruce Lesikar**, an Extension agricultural engineer. "It also reduces the quantity of contaminants that enter our streams and rivers, providing high quality water for landscaping and other needs."

Lesikar, who, along with other Extension personnel throughout Texas, educates people on the benefits of rainwater harvesting, said taking steps now is vital to help meet the nation's future fresh water needs.

For the full AgNews story, visit <http://agnews.tamu.edu/showstory.php?id=126>.

### **Texas A&M University Distinguished Lecture Series**

Multi-Scale Processes in Earth Systems, a distinguished lecture series hosted by the departments of Biological & Agricultural Engineering, Civil Engineering, Petroleum Engineering, Atmospheric Engineering, Geology & Geophysics, Mathematics, Ecosystem Science & Management and Water Management & Hydrologic Sciences, is set for fall and spring semesters. The lectures begin with a reception at 3:30 p.m. in Scoates Foyer with the presentation following at 4:10 p.m. in Scoates Hall, Room 208.

Lectures for the rest of the fall semester are:

- October 31, 2007, Dr. Dennis Lettenmaier, from the University of Washington, will discuss water cycles.
- November 14, 2007, Dr. Todd Arbogast, from the University of Texas at Austin, will discuss algorithms and contaminant transport.
- November 28, 2007, Dr. Ashim Datta, from Cornell University, will discuss biological systems.

For more information, visit [www.baen.tamu.edu](http://www.baen.tamu.edu) or call (979) 845-3931.

### **Texas A&M-Kingsville garners \$5 million National Science Foundation grant**

[The Frank H. Dotterweich College of Engineering at Texas A&M University-Kingsville](#) has garnered its second five-year \$5 million grant from the National Science Foundation's Center of Research Excellence in Science and Technology (CREST) program.

A&M-Kingsville's [CREST Research on Environmental Sustainability of Semi-Arid Coastal Areas](#) was one of only two established CREST programs in the nation to receive a \$5 million renewal grant this year.

The CREST program helps minority-serving institutions enhance their research abilities. A&M-Kingsville's CREST is the only one in the nation that focuses on maintaining natural resources in semi-arid coastal areas.

The grant funding will further the center's work in four major areas: increasing the number of environmental engineering doctoral degrees; continuing environmental research in the Coastal Bend and Rio Grande Valley; increasing partnerships in the United States and Mexico to address environmental issues; and continuing public education efforts for lawmakers, educators and the public.

For more on this story, visit <http://www.emediawire.com/releases/2007/10/emw559136.htm>.

### **Spatial Sciences Laboratory offers fall training courses**

[The Spatial Sciences Laboratory](#) at Texas A&M University is offering several fall training courses, including Combined Introductory & Advanced ArcGIS, Beginner and Advanced SWAT and Remote Sensing. These workshops will be at the Spatial Sciences Laboratory located in the Centeq Building in Research Park in Building B, Rooms 212 or 214.

**Introductory & Advanced ArcGIS, December 4-6**, will train beginning users on the ESRI ArcGIS 9.1 software including the use of the more advanced tools and extensions. Cost for the three-day training is \$450 per person/\$225 for students.

**Beginner SWAT, November 12-16**, will train beginning users on the SWAT model using ArcGIS-SWAT (ArcSWAT) interface. Cost for the three-day training is \$500 per person/\$300 for students.

**Advanced SWAT, November 12-16**, will cover sensitivity analysis, model calibration and uncertainty analysis using the 2005 version of SWAT with an ArcGIS (ArcSWAT) interface. In

addition, day three of the course will be devoted to discussing participant's individual model issues. Cost for the two-day training is \$500 per person/\$300 for students. For an additional \$100 per person, there will be a one-on-one project support session with the instructor.

**Remote Sensing** will train beginning users on the Leica ERDAS Imagine 8.7 software. Cost for the three-day training is \$500 per person/\$300 for students. The dates for this course are pending.

To register or for more information, visit Spatial Sciences Laboratory Web site at <http://www-ssl.tamu.edu/>

## **New Project**

### ***The Resource Conservation Assessment: Decision Support Development***

This project deals with an emerging need for advanced information technologies (IT) to assist U.S. Department of Agriculture–National Resource Conservation Service (USDA–NRCS) conservationists in helping producers improve soil conservation and sustain natural resources without sacrificing productivity. The project focuses on providing computer-assisted decision support tools for producers and conservationists with interests in improving conservation and sustaining agriculture. Project personnel will assist producers and conservationists in two-way communications and evaluations of potential impacts of ongoing conservation practices on natural resources. Analyses of alternative practices designed to enhance the longevity and productivity of resources will also be conducted.

**Principal Collaborators:** Texas Water Resources Institute, USDA–NRCS, Texas Agricultural Experiment Station, Blackland Research and Extension Center, Texas A&M University

**Funding Agency:** USDA–NRCS

## **New Publications/ Papers**

### **USGS-series reports published in FY2007**

The U.S. Geological Survey's Texas Water Science Center produced a variety of reports and journal articles during 2006-2007.

Visit <http://twri.tamu.edu/news/2007/10/31/usgs-series-reports-published-in-fy2007/> to see the list

### **"Capping of Water Wells for Future Use"**

**Bruce J. Lesikar and Justin Mechell**, Texas Cooperative Extension publication L-5490.

Water wells that are not being used, but that might be needed in the future, can be sealed with a cap that covers the top of the well casing pipe to prevent unauthorized access and contamination of the well. This publication explains how to cap a well safely and securely.

### **"Use of Satellite Remote Sensing in Monitoring Saltcedar Control along the Lower Pecos River, USA"**

**S. Nagihara and C. Hart**, TWRI publication TR-306.

Vegetation along the riparian corridor of the lower Pecos River in the southwestern United States has been dominated by saltcedar for the past century. In 1999 through 2004, herbicides were sprayed from helicopters along some sections of the river to reduce saltcedar infestation. This

publication describes a simple methodology based on satellite remote sensing for monitoring the impact of saltcedar control measures.

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**"New Waves,"** an email newsletter of Texas Water Resources Institute publishes timely information about water resources news, results of projects and programs, and new water-related research projects, publications, papers and faculty, at universities in Texas. If you have information for possible inclusion in "New Waves" please email [Kathy Wythe](mailto:Kathy.Wythe@twri.texasaam.edu) or call 979.845.1862 and include your contact information. All submissions may be edited for grammar and style.

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