



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

**March 31, 2008**

### **Rio Grande Basin Initiative wins Environmental Excellence award**

The [Rio Grande Basin Initiative](#) (RGI) project was recently selected as the first place winner of the [Texas Commission on Environmental Quality's](#) (TCEQ) *2008 Texas Environmental Excellence Award* (TEEA) in the agriculture category.

The TEEA celebrates the efforts of citizens, communities, businesses and organizations to preserve and protect the Texas environment. The awards spotlight the state's highest achievements in environmental preservation and protection.

The award will be presented at a banquet hosted by TCEQ on April 30 in Austin as part of the Environmental Trade Fair and Conference at the Austin Convention Center. This celebration of environmental achievements is hosted by the commissioners of TCEQ, with special recognition from Gov. Rick Perry.

"This is a very prestigious award, and we are all highly honored to have won," said **Dr. B.L. Harris**, Texas Water Resources Institute associate director and RGI project director. "Both Texas and New Mexico participants have done a great job in earning this award."

### **Graduate students receive water research grants**

Texas Water Resources Institute (TWRI) recently funded 10 water-related research projects for graduate students from Texas A&M University and the University of Texas.

The students were awarded up to \$5,000 to begin, expand or extend water-related research projects. The institute funds the graduate student projects through funds provided by the U.S. Geological Survey as part of the [National Institutes for Water Research](#) annual research program. TWRI will publish articles and reports about the progress of each project.

Graduate students funded and their projects are:

- **Emily Seawright** (advisors: **Drs. M. Edward Rister, Ron Lacewell**), Texas A&M—Determining the economic impacts of biological control of *Arundo donax* in the Rio Grande Basin;
- **Champa Joshi** (advisor: **Dr. Binayak Mohanty**), Texas A&M—Uncertainty analysis of recharge to the Edwards Aquifer using bayesian model averaging scheme;
- **Sivarajah Mylevaganam** (advisor: **Dr. Raghavan Srinivasan**), Texas A&M—Effect of grid sizes as subbasins on SWAT model hydrologic and water quality predictions;

- **Deepti Deepti** (advisor: **Dr. R. Karthikeyan**), Texas A&M—Uncertainty analysis of a statistical model for pathogen contamination assessment in two Texas river basins;
- **Emily Martin** (advisor: **Dr. Terry Gentry**), Texas A&M—Development of a library-independent bacterial source tracking markers for species-specific discrimination of deer and cattle fecal contamination in surface waters;
- **Kranthi Mandadi** (advisor: **Dr. Thomas D. McKnight**), Texas A&M—Mitigating demand for irrigated water used in agriculture by genetically enhancing crop plants to be productive in minimal water conditions;
- **Bo Yang** (advisors: **Drs. Ming-Han Li, Chang-Shan Huang**), Texas A&M—Using SWAT to compare planning methods for neighborhoods: Case Study of stormwater in The Woodlands, Texas;
- **Eric Hersh** (advisor: **Dr. David R. Maidment**), University of Texas at Austin—An environmental flows information system for Texas;
- **Brigit Ashfar** (advisor: **Dr. Mary Jo Kirisits**), University of Texas at Austin—Microbial source tracking in drinking water from rainwater harvesting; and
- **David Watts** (advisor: **Dr. Georgianne Moore**), Texas A&M—Ecohydrology and ecophysiology of *Arundo donax* (giant reed).

Click [here](#) for more information and updates about each project.

### **Institute publishes new txH2O**

Texas Water Resources Institute recently published its winter edition of txH2O. This issue's cover stories report on the climate change research being conducted by Texas university scientists and predictions of what Texas can expect with climate change. Other stories include features on the U.S. Department of Agriculture's Agricultural Research Service's experimental watershed in Riesel, Texas, a water conservation project between Texas A&M AgriLife and the city of McKinney, and El Paso AmeriCorps members working on water conservation.

A copy of the magazine may be requested by e-mailing [twri@tamu.edu](mailto:twri@tamu.edu) or downloaded at <http://twri.tamu.edu/newsletters.php>.

### **Texas A&M scientists participating in climate change conference**

Several Texas A&M University scientists will join other national and state researchers speaking at the climate change conference, "Forecast: Climate Change Impacts on Texas Water," April 28-30, 2008, at the Texas State Capitol Extension in Austin.

The conference will feature national climate change scientists who have conducted cutting-edge work in the prediction of global warming and the impending changes on the earth's climate and state scientists who are working to understand the impacts on Texas and its water resources.

Texas A&M scientists speaking at the conference are **Dr. Bruce McCarl**, regents professor of agricultural economics; **Dr. Gerald North**, distinguished professor of atmospheric sciences; **Dr. Andrew Dessler**, professor of atmospheric sciences; **Dr. John Nielsen-Gammon**, professor of atmospheric sciences and the State of Texas climatologist; **Dr. Vijay Singh**, professor of biological and agricultural engineering and holder of the Caroline and William N. Lehrer Distinguished Chair in Water Engineering; and **Dr. Arnold Vedlitz**, director of the Institute for Science, Technology and Public Policy at the Bush School of Government and Public Service.

The conference is hosted by the [River Systems Institute](#) of Texas State University and is co-hosted by [Texas Water Resources Institute](#) of Texas A&M AgriLife, and the [Environmental Sciences Institute](#) at The University of Texas at Austin. Co-sponsors include [Guadalupe—Blanco River Authority](#), [Lower Colorado River Authority](#), [Magnolia Charitable Trust](#), the [Jackson School of Geosciences](#) at The University of Texas at Austin, [Meadows Foundation](#), [National Oceanic and Atmospheric Administration](#) and the [U.S. Geological Survey](#).

To find about more about the conference, visit the conference [Web site](#).

### **Fellowships available for minority graduate students studying water-related fields**

Texas A&M University's Department of Biological and Agricultural Engineering and Water Management and Hydrologic Science Degree Program are cooperating to offer generous fellowships for up to five minority (African-American, Hispanic, or Native American) graduate students seeking a doctorate in certain water-related fields, including water quality, watershed modeling, geographic information systems, environmental microbiology or environmental chemistry.

Financial support will include \$24,000 per year for three years from U.S. Department of Agriculture plus an additional \$34,000 (one-time) scholarship from the Alfred P. Sloan Foundation. Additional support for travel and research expenses may be available from university and agency sources.

Requirements include U.S. citizenship (or in some cases, permanent residency), a masters degree in a related engineering or science field, as well as acceptable grades, GRE scores and letters of recommendation.

This may be an excellent opportunity for minority employees of local, state, and federal organizations who already have a masters degree to obtain a doctorate.

For more information contact: Dr. Clyde Munster at [c-munster@tamu.edu](mailto:c-munster@tamu.edu) or Dr. Yongheng Huang at [yhuang@tamu.edu](mailto:yhuang@tamu.edu).

### **Team meets to promote stream restoration**

Central Texas Stream Team (CTCS), a voluntary and interdisciplinary group of experts formed to develop and promote strategies and solutions for protection and restoration of Central Texas rivers and streams, recently held its first meeting in Temple.

More than 80 attended the daylong March 13 meeting that was directed toward city engineers, planners and developers, said Lisa Prcin, research assistant at Texas AgriLife Research Blackland Research and Extension Center at Temple. Prcin said the meeting drew professionals from Forth Worth, San Antonio and Austin in addition to Central Texas.

The attendees heard presentations from CTST members on stream processes and natural stream design as well as case studies from professionals involved in completed or on-going restoration projects.

Jason McAlister, research assistant at the Blackland center, said the voluntary team is available to provide informal evaluation of stream processes, advice and/or review of site plans. The stream team will focus on providing technical advice on alternative river and stream management

practices, as well education and promotion of nonstructural stream modification to the stakeholder, landowner, official or developer.

“Although the Central Texas Stream Team’s recommendations are advisory only (non-regulatory), the advice can often times make future compliance easier,” McAlister said. “Recommendations may show up again on review letters from participating agencies where permits are required.”

The U.S. Environmental Protection Agency (EPA) funds the team through a Wetland Program Development grant. Dr. Dennis Hoffman, senior research scientist at the Blackland center, is principal investigator. Other members of the team are Russell Castro, Jon Fripp, Kenneth Mayben and Jim Kelly of U.S. Department of Agriculture’s Natural Resources Conservation Service; Jim Herrington, of EPA, David Madden of U.S. Army Corps of Engineers, and Tom Heger of Texas Parks and Wildlife Department. McAlister and Prcin are also involved in the project.

“The purpose of the grant is to promote stewardship of streams— stream restoration, stream protection, stream education,” Hoffman said.

For more information on the team, e-mail [streamteam@brc.tamus.edu](mailto:streamteam@brc.tamus.edu) or call the Blackland center at 254.774.6000.

### **Baylor scientists researching pharmaceuticals in water**

[Baylor University](#) researchers are working to figure out a way to clean chemical compounds such as those found in Prozac and birth control pills out of the water supply, according to a news story in the university’s student newspaper.

**Dr. Bryan Brooks**, environmental studies associate professor and director of the Ecotoxicology and Aquatic Research Laboratory, and **Dr. Joe Yelderman**, geology professor, are the researchers working on the project.

“Our current wastewater treatment plants do a really good job most of the time,” Brooks said in the Baylor student newspaper, The Lariat. “They just aren’t designed for pharmaceuticals or personal care products.”

Small portions of the compounds found in these products are able to slip through the treatment processes at the wastewater plants, getting into the water supply and affecting the wildlife it houses, he said.

The Associated Press (AP) recently published a 5-month investigative report on pharmaceuticals in drinking water. According to the AP, at least 41 million Americans receive drinking water with trace amounts of an array of pharmaceuticals.

For the complete Baylor story go to the Lariat’s [Web site](#). For a version of the AP story, see [CNN’s story](#).

### **Natural Resources Field Day focuses on drought management**

The [Texas AgriLife Research and Extension Center at San Angelo](#) and the [National Drought Mitigation Center](#) will sponsor the Natural Resources Field Day on April 24 at the San Angelo center.

Marvin Ensor, Texas AgriLife Extension Service regional program director at San Angelo, said the field day is meant to showcase existing management tools and reintroduce some standby practices available to producers facing drought.

"The National Drought Mitigation Center also wants to give producers and agency personnel an opportunity to provide real world input on new tools they are currently working on," Ensor said in an AgNews story.

For more information or to read the complete Ag News story, click [here](#).

### **Graduate student researches exotic mud crab introductions**

Texas A&M University graduate student **Terrence Boyle Jr.**, under the direction of **Dr. Mary Wicksten**, biology professor, is studying the mud crab, *Rhithropanopeus harrisi*, recently introduced to Texas. The crabs are known to foul up water intake pipes.

The crab, first reported in Possum Kingdom Reservoir during the summer of 1998, has since been confirmed in seven other lakes and reported from a ninth lake as well. The lakes with confirmed populations are Trading House Creek Reservoir, Lake Colorado City, E.V. Spence Reservoir, Squaw Creek Reservoir, Lake Balmorhea, Lake Granbury and Lake Whitney. The latest report is from Lake Braunig in the fall of 2006.

"The crabs are reproducing in these lakes and show all indications of successful introductions," Boyle said.

"Successful reproduction may be due to increased salinity during recent drought years," he said. "Decreased freshwater input and increased water usage may be influencing salinity, which can further influence the biota."

Boyle's research is focusing on the interactions between this exotic species and the native crayfish, as it appears that the crabs may be outcompeting the crayfish.

Boyle said he is also trying to establish how many introductions have taken place as well as identify from where the original population may have come. Boyle's previous research at Tarleton State University indicated that there had been at least two introductions, but the study did not include individual crabs from all of the introduced populations.

### **SWAT courses set for April**

The [Spatial Sciences Laboratory](#) (SSL) at Texas A&M University is holding Beginner and Advanced Soil and Water Assessment Tool (SWAT) courses in April. The beginner course is April 21-23 and the advanced is April 23-25.

Courses are designed to introduce new users to the SWAT model using ArcGIS-SWAT and advanced users to sensitivity analysis, model calibration and uncertainty analysis. The advanced users will also have a chance to discuss their individual model issues.

Fees are \$500 per person. Students pay a reduced fee of \$300. For more information or to register for a workshop, please go to [SSL's Web site](#) or call Lesli Gomez at 979.862.7956.

## **AgriLife Extension sponsors youth water camp**

The Texas AgriLife Extension Service's 16th annual Texas State Youth Water Camp will be July 13-17 at the George and Opal Bentley 4-H Center in Monahans.

Arlan Gentry and Abigail Pritchard, Ward County Extension agents, said the camp will help make Texas high school youth aware of current water issues and develop an appreciation of how agriculture, industry, municipalities and home water use impact water quality and quantity.

The camp features field trips, tours and hands-on work and is conducted by county Extension agents and specialists and other water resource experts. It is limited to 15 boys and 15 girls of high school age from across the state and participants must have an interest in water quality and conservation and be willing to participate as a team member.

The camp receives partial funding from the Rio Grande Basin Initiative, a project of the Texas Water Resources Institute.

To continue reading the AgNews story, click [here](#).

## **New Publications/ Papers**

### **[Descriptions and Expectations of Recommended BMPs for Improving the Bosque River Watershed](#)**

**Lucas Gregory and Megan Meier**, Texas Water Resources Institute, TR-309, 2008

The Bosque River and its watershed face complex water quality problems that are not easy to solve. Attempts have been made to improve the quality of the water moving through this watershed, but have had little success due to the broad scope of work that is needed to positively impact water quality in the Bosque River. This document is part of a multi-faceted project that aims to improve the environmental infrastructure in the watershed in a manner that focuses on existing pollution issues.

### **[Improving Permeability and Salt Leaching in Irrigated Sports Fields: Exploratory Testing](#)**

**S. Miyamoto, Ignacio Martinez, Francisco Luna, and David Tirre**, Texas Water Resources Institute, TR-310, 2008.

Many sports fields developed in the El Paso Valley and some in uplands became salinized when irrigated with water containing 800 to 1,200 mg/L of dissolved salts. This study was performed to evaluate various mechanical means of improving soil permeability for enhancing salt leaching. Soil salinity and photo records of turf response were used as the primary means of measuring the treatment impact.

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