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Texas Water Resources Institute's E-Newsletter

Breaking news about water resources research and education at Texas universities

January 15, 2009

2009 AgriLife Conference grants awards

The 2009 Texas A&M AgriLife Conference brought several awards to individuals and teams for their efforts on water-related research, education, or projects.

The **Fort Hood Training Lands Restoration and Management Program Team** won the 2008 Vice Chancellor's Award in Excellence for the Industry/Agency/University/Association category. The team consists of **Dr. William Fox** of Texas AgriLife Blackland Research and Extension Center at Temple and the Texas Water Resources Institute, **Brian Hays** of the Institute of Renewable Natural Resources, **Dr. Dennis Hoffman** of the Texas AgriLife Blackland Research and Extension Center at Temple, **Jerry Paruzinski** of Fort Hood Integrated Training Area Management and **Robert Ziehr** of USDA Natural Resources Conservation Service. The team won for its ongoing multi-agency contributions to the sustainability of Fort Hood's training lands and the management of its natural resources; including water, soils, vegetation, and endangered species.

Dr. George Di Giovanni of the Texas AgriLife Research and Extension Center at El Paso was named a 2008 Faculty Fellows for Texas AgriLife Research. Giovanni is considered an expert on waterborne pathogens for AgriLife Research and has led bacterial source tracking studies for Texas, among many other activities.

Two water-related teams won 2008 Superior Service Awards from the Texas AgriLife Extension Service. The **Plum Creek Watershed Protection Plan Team** consists of Extension personnel **Rachel Bauer, Matt Berg, Dr. Diane Boellstorff, Bryan Davis, Nikki Dictson**, and **Dr. Mark McFarland** as well as **Dr. R. Karthikeyan** of the Biological and Agricultural Engineering Department; **Dr. Raghavan Srinivasan** of Texas A&M's Spatial Sciences Laboratory; **Debbie Magin** of the Guadalupe-Blanco River Authority; and **TJ Helton**, **Brian Koch**, and **Aaron Wendt** of the Texas State Soil and Water Conservation Board.

The **Rainwater Harvesting Task Force** won for its efforts in teaching and training people about managing rainfall on their property. Members of the task force are **Dr. James Cathey**, **Brian Davis**, **Dr. Monty Dozier**, **Billy Kniffen**, **Dr. Bruce Lesikar**, **Justin Mechell**, **Dr. Barron Rector,** and **John Smith**.

Institute announces National Competitive Grants Program

Scientists at Texas universities researching topics on water resources are invited to submit proposals for the **2009 National Competitive Grants Program** through Texas A&M AgriLife's Texas Water Resources Institute (TWRI). The U.S. Geological Survey in cooperation with the National Institutes for Water Resources, of which TWRI is Texas' representative, requests the proposals as part of the Water Resources Research Act.

Proposals are requested on the topics of water supply and availability. Proposals are sought in not only the physical dimensions of supply and demand, but also quality trends in raw water supplies; the role of economics and institutions in water supply and demand; institutional arrangements for tracking and reporting water supply and availability; and institutional arrangements for coping with extreme hydrologic conditions.

"Proposals may be for projects of 1 to 3 years in duration and may request up to $250,000 in federal funds," said **Cecilia Wagner**, a TWRI project manager. "Proposals require a 1:1 match, thus successful applicants must match each dollar of the federal grant with one dollar from non-federal sources."

"Funds for the FY09 program have not been appropriated yet," Wagner said, "but if appropriated it is anticipated that less than $1 million in federal funds will be available."

Proposals must be filed on the Internet by 5 p.m. on **Feb. 20, 2009** and approved for submission by TWRI by 5 p.m. on **Mar. 6, 2009**.

Detailed proposal, submission, and registration criteria can be viewed at http://twri.tamu.edu.

For further information, contact Wagner at Cecilia@tamu.edu.

TWRI grant recipient studies the effects of brush removal on cave hydrology

Graduate student **Corinne Wong**, now earning her masters at the University of Texas in geological sciences, recently worked with her advising professor **Dr. Jay Banner** on evaluating the effects of brush removal on groundwater recharge of a karst aquifer, specifically in cave hydrology.

Wong is a recipient of a 2007-08 Texas Water Resources Institute (TWRI) research grant. With the $5,000 grant, Wong said she was able to investigate relative amounts of recharge infiltrating water into a cave by evaluating changes in cave drip and drip water chemistry before and after brush is removed from the surface directly above a cave. Wong expected that groundwater recharge would increase with the removal of brush, but found instead there was not a noticeable change in recharge to the cave.

According to Wong's final scientific report on the project, she chose her research topic because the question of how effective brush management practices are at increasing water availability is still being asked.

Wong's report claims that although many studies have been done on the before and after effects of brush removal, none have done so using a cave setting. When asked what sparked her interest in cave hydrology, Wong said, "I was aware of the controversy surrounding the issue of brush clearing and recharge, and I wanted to use a new method to address the question of whether or not brush clearing increased recharge."

Her research targets land management practices of private and government agencies, including the City of Austin, which aim to improve water quality and quantity through brush removal. Wong hopes that her research will suggest to rangeland management that costly brush removal projects do little to enhance groundwater recharge.

After Wong completes her masters, she plans to continue her education for a doctorate and eventually become a professor or research scientist.

Research conducted by Wong 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 Wong's research visit http://twri.tamu.edu/usgs-recipients/2007-08/.

TPWD's *Texas the State of Flowing Water* documentary to air Feb. 12

Texas the State of Flowing Water will air at 8 p.m. **Thursday, Feb. 12** on all Public Broadcasting Service (PBS) stations in Texas. It is the fourth in an award-winning series of water resource documentaries produced by Texas Parks and Wildlife Department (TPWD) and broadcast in partnership with PBS stations.

Texas the State of Flowing Water examines water resource threats facing Texas and looks at what people can do to protect the state's most precious natural resource. The documentary features images of rivers, springs, bays, and estuaries, plus interviews with a wide array of experts, stakeholders, and policy makers.

The one-hour TV program is part of a broader TPWD public information initiative begun with a special water resource issue of *Texas Parks & Wildlife* magazine in July 2002. The initiative also includes radio, Internet, and other components.

A companion website, Texas The State Of Water, features a preview of the documentary, links to additional information, and after the show airs, will feature the complete program presented via streaming video, and a complete written transcript at http://www.texasthestateofwater.org/.

To read the complete TPWD new release, go to
http://www.tpwd.state.tx.us/newsmedia/releases/?req=20090108a.

Texas A&M-Qatar researches desalination of water with no brackish water discharge

New research at Texas A&M University at Qatar could mean a major breakthrough to alleviate global water shortages. Based on improved technology, the university's water and environment research group hopes to desalinate inland water with zero discharge of the brackish groundwater that typically accompanies such operations, according to a Texas A&M System news release.

The improvement would have enormous implications for inland regions in Qatar and other areas with limited freshwater resources that have urgent need for affordable water supplies to meet growing demands, the release said.

The proof-of-concept research study, led by **Dr. Ahmed Abdel-Wahab**, will be funded by a $420,000 grant from Qatar Science & Technology Park.

For coastal areas, disposal of reject brine is a common practice, but it is a major problem for inland plants seeking to desalinate groundwater because of the need to protect surface and groundwater resources. Zero liquid discharge, in which brine is treated to produce desalinated water and essentially dry salt, would greatly increase the potential for recovering previously unusable groundwater reserves.

The Qatar project will focus on developing inexpensive and environmentally benign desalination techniques that will maximize water recovery and minimize the volume of concentrated brine that needs to be vaporized. The process will also conserve water because of high rates of recovery.

To read the complete story visit http://sago-news.tamu.edu/releases/?p=1074.

Conference commits to protect and conserve water reservoirs

The Soil and Water Conservation Society is hosting a conference to identify and share science-based information for protecting and conserving critical water reservoirs in the United States. The conference, **From Dust Bowl to Mud Bowl: Sedimentation, Conservation Measures, and the Future of Reservoirs**, will be held **September 14-16, 2009** at the Westin Crown Center in Kansas City, Missouri.

The conference aims to advance science, research, collaboration, and problem solving by engaging professionals from various disciplines to address crucial issues regarding conservation and sedimentation of reservoirs. It will provide an opportunity to directly connect ongoing research, extension, and education in conservation practices to the health and sustainability of reservoirs.

At this time the conference is calling for possible verbal presentation abstracts as well as poster abstracts. The abstract deadline to be considered as a verbal presenter is **January 30**, and the deadline for poster abstracts is set as **March 13**.

Abstracts may be submitted on any topic related to the conference goals and objectives, but participants are encouraged to submit innovative research methodologies for assessing reservoir condition, determining sources of sediment, in-stream processes relating to stream morphology and sediment load delivery, and reservoir rehabilitation.

The conference is additionally supported by the Texas and Arkansas Water Resources Institutes, USDA-Agricultural Research Service, Kansas State Research and Extension/Kansas State University, Oklahoma Cooperative Extension and the USDA-Cooperate State Research, Education, and Extension Service Water and Watershed Program.

For information on abstract guidelines and submission visit
http://www.swcs.org/en/conferences/sedimentation/.

For more information on the conference and how to register go to
http://guest.cvent.com/EVENTS/Info/Summary.aspx?e=962e7551-098f-494b-a322-1b489d1a09c7.

Food Protein R&D Center announce annual short courses

The Food Protein Research and Development Center of Texas Engineering Experiment Station has its two annual short courses at Texas A&M planned for 2009.

The **19th annual Membrane/Filtration and Other Separations Technologies course** will be **April 19-23**, and cover fundamentals, new developments, applications and pilot plant demonstrations for industries in food and beverages, chemicals, water and wastewater, pharmaceuticals, and oil and gas. The course will also include information and equipment demonstrations for the dairy industries.

The **5th annual Water Issues and Technologies: Process Water, Wastewater, and Desalination workshop**, a hands-on practical workshop with all the do's and don'ts of membrane filtration systems, will be held **August 2-4**, and will feature daily equipment demonstrations. Attendees will receive Texas Commission on Environmental Quality credits.

Attendees will additionally receive continuing education units at both workshops.

Additional sponsors of this workshop are Texas A&M University, the Global Petroleum Research Institute, and Texas Water Resources Institute.

Academic faculty and organizations with multiple attendees may be eligible for registration discounts. Register for the courses on the Web at www.tamu.edu/separations or call **Carl Vavra** at 979.845.2758.

A little more H_2O in your life

If you like New Waves, you can receive more water news with Texas Water Resources Institute's magazine, "tx H_2O," published three times a year.

"tx H_2O" contains information on water resources research conducted by Texas AgriLife Research, outreach efforts of Texas AgriLife Extension Service, and results of TWRI's programs and research projects. It also provides information on general water resources issues, water-related news within the state and water research findings from other Texas universities.

Visit http://twri.tamu.edu/newsletters.php to view the latest Fall 2008 issue of "tx H_2O," or subscribe and have the magazine mailed to you each season.

New Publications/ Papers

Bacteria Total Maximum Daily Load Task Force Final Report, C. A. Jones, K. Wagner, G. Di Giovanni, L. Hauck, J. Mott, H. Rifai, R. Srinivasan, G. Ward, Texas Water Resources Institute Report TR-341, 2009
A Task Force report describes the characteristics, strengths, and weaknesses of several models that have been used and/or are under development to assist bacteria TMDL and I-Plan analysis, and further recommends a three-tier approach to implementing bacteria TMDLs and I-Plans.

Extending and Condensing the Brazos River Basin Water Availability Model, R. Wurbs, T. Kim, Texas Water Resources Institute Report TR-340, 2008
This report documents an investigation that consisted of developing, testing, and applying procedures for extending WAM hydrology datasets to cover a longer period-of-analysis and

condensing WAM water right datasets to focus on a particular water management system while reflecting the effects of all other water rights in the stream flow inflows.

Goal Seek Pamphlet II for VIDRA© - HCID#1 (version 2.6 / December 18, 2008), A. Sturdivant, M. Rister, R. Lacewell, C. Rogers, Texas Water Resources Institute Report TR-339, 2008
VIDRA© (Valley Irrigation District Rate Analyzer) is a work-in-process and is being developed with collaboration from Hidalgo County Irrigation District No. 1 and other Lower Rio Grande Valley irrigation districts. The primary function of VIDRA© is to provide an irrigation district a means of 'what-if' analysis for an upcoming year's potential estimated financial data with simultaneous changes in rates, expenses, or other water-delivery related parameters for the irrigation district.

Effects of Brush Management on Water Resources, C. A. Jones and L. Gregory, Texas Water Resources Institute Report TR-338, 2008
For several decades, land managers have cleared brush species, such as mesquite and juniper (cedar), and observed increases in spring and stream flows. Scientists have also conducted numerous studies in which they have measured the effects of brush removal on different aspects of rangeland hydrology.

Priority Groundwater Management Areas: Overview and Frequently Asked Questions, Valeen Silvy, Bruce J. Lesikar, Russell A. Persyn, Texas AgriLife Extension Service publication, B-6191, Reprint November 7, 2008
Water shortages and water quality problems in Texas are prompting the state to address the security of its water supplies. One approach being taken is to create priority groundwater management areas (PGMAs) in critical regions. This publication explains the process for creating a PGMA in Texas.

"**New Waves**," an email newsletter of Texas Water Resources Institute of Texas A&M AgriLife, 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** at kpwythe@ag.tamu.edu or call 979.845.1862 and include your contact information. All submissions may be edited for grammar and style.

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