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twri new waves

Breaking news about water resources research and education at Texas universities

September 25, 2008

Michelsen elected president-elect of AWRA

Dr. Ari Michelsen, director of Texas AgriLife Research and Extension Center at El Paso, was recently elected to serve as president-elect of the American Water Resources Association (AWRA), beginning Jan. 1, 2009 and then as president of AWRA for one year, beginning Jan. 1, 2010. He currently serves on the Board of Directors of AWRA.

Research director of the El Paso center for nine years, Michelsen is also a professor of Agricultural Economics specializing in water resource economics, markets, institutions and policy analysis. His research includes studies on the effectiveness of water conservation programs, water right markets, valuation and prices, impacts of endangered species water acquisition programs and river basin decision support systems for water management and policy analysis in the western United States, China, the former Soviet States and Chile.

Michelsen serves on the Board of Directors and is former president of the Universities Council on Water Resources, serves on the Southwest Hydrology Advisory Board, and is a member of the New Mexico-Texas Water Commission, Paso del Norte Watershed Council Executive Committee and Far West Texas Water Planning Group.

AWRA is a non-profit professional association dedicated to the advancement of multidisciplinary water resources management, research and education. AWRA has taken the lead in working with government, private industry, academia and non-governmental organizations toward development of integrated national water resources policy.

Texas Tech University student strives to conserve water in the West Texas region

By Laura Maeker

Texas Tech University doctorate student **Steve Oswalt** and advisors **Drs. Dick Auld** and **Thomas Thompson,** professors in Tech's Department of Plant and Soil Science department, have been working to determine the optimum irrigation of oilseed crops in the Texas High Plains.

Oswalt, originally from Abernathy, Texas, and a recipient of a $5,000 2007-2008 Texas Water Resources Institute (TWRI) research grant, said the focus of his study was to gain maximum oil production per acre with minimum water application and to determine which plants have the highest water efficiency.

Oswalt's experience led him to his research. "I have been a cotton producer for over 25 years and have always wanted to develop a new crop for our area that uses less water than cotton and still produces an economic return for producers," he said.

Oilseed crop production in West Texas could conserve water and enhance profitability for growers, but this type of production is unfamiliar in this area. Therefore, farmers must be informed of this type of production so that they make sound economic choices regarding crop selection and management.

"We plan to fill this information gap by growing a number of oilseed crops that show promise for West Texas under variable water regimes and to develop irrigation water production functions with respect to oil yield and quality," Oswalt said.

On June 1, 2007, seven species of spring-seeded oilseed crops were planted on plots located at the Texas Tech Quaker Street Research Farm in Lubbock, Texas. Oswalt's research will take place over a three-year span, 2007-2010.

"I hope the results of this research will lead to a new winter crop that is very drought tolerant with high economic return for all of Texas and the southern United States," Oswalt said.

His results so far show that the best crops for oil production are castor and safflower. "There are crops other than the traditional ones that farmers can grow to become energy sufficient, make a profit and save water," he said.

Oswalt said he hopes to continue research to develop new crops and cropping systems for all farmers to use in their farming operations. His research was funded by TWRI with funds obtained through the U.S. Geological Survey as part of the National Institutes for Water Research. TWRI is the designated institute for water resources research in Texas.

For more information on Oswalt's research, click here.

USGS publishes groundwater availability report

A new report by the U.S. Geological Survey (USGS) examines the nation's groundwater availability and outlines a strategy for future national and regional studies to help state and local agencies make informed water availability decisions, according to a USGS news release.

The report, "Ground-Water Availability in the United States" is part of the government's effort to help address the increasing competition for water. Groundwater supplies half of the country's drinking water. The report is available at http://pubs.usgs.gov/cir/1323.

Declines in groundwater levels have led to concerns about the future availability of ground water, which provides half the country's drinking water and is essential to the vitality of agriculture and industry, as well as to the health of rivers, wetlands, and estuaries throughout the country.

"An assessment of groundwater availability is critical for state and local agencies to make decisions about important issues such as drinking water, industrial and energy production, and agricultural uses," said William Alley, USGS Office of Ground-Water chief, in the news release.

The report is an outgrowth of a pilot study, National Assessment of Water Availability and Use that began in 2005 at the request of Congress. The report also builds on regional groundwater availability studies recently undertaken as part of the USGS Ground-Water Resources Program.

Irrigation training program set for Rio Grande Valley

The Texas Water Resources Institute (TWRI) is co-sponsoring the 7th Rio Grande Valley Irrigation Conference and Trade Show set for Wednesday, Oct. 29 in Mercedes.

Irrigation experts, including Texas AgriLife Extension Service agricultural engineers **Dr. Guy Fipps** of College Station, **Dr. Dana Porter** of Lubbock and **Dr. Juan Enciso** of Weslaco will speak on improved irrigation technologies and irrigation and crop management. Other speakers include **Erasmo Yarrito**, the Rio Grande Watermaster team leader; **Alan Moore**, Cameron Drainage District manager; and **Charles Stichler**, retired Extension agronomist.

The conference will be at the Rio Grande Valley Livestock Show, 1000 N. Texas Ave. in Mercedes.

Participants may register at the door. A $10 registration fee includes breakfast, lunch and admission to the trade show and educational sessions. Participants can receive 2 hours of certified crop advisor or pesticide applicator continuing education credits.

The Rio Grande event is the third of six Irrigation Training Program (ITP) events being held around the state to help farmers and others learn about efficient tools and techniques of irrigation management. Each event will offer region-specific information about irrigation practices, cropping systems, policy updates and cost-share programs available to local producers. The next event, the Gulf Coast Irrigation Conference, is scheduled for Nov. 18 in Sinton.

The ITP is a collaborative effort of TWRI, AgriLife Extension, Texas State Soil and Water Conservation Board, and USDA's Natural Resources Conservation Service. The Texas Water Development Board funds the project through its Agricultural Water Conservation Grant program.

Other sponsors of the Rio Grande event are Lower Rio Grande Valley Water District Managers Association and the Irrigation Technology Center.

For more information about the Rio Grande Valley or Coastal Bend conferences events, visit http://itc.tamu.edu/conferences.php. For more information on the Irrigation Training Program, visit http:// http://twri.tamu.edu/project-info/ITP/.

News from TWRI Water Resources Training Program

SWAT and APEX Training Courses set

The Texas Water Resources Institute will host Soil and Water Assessment Tool (SWAT) Training Courses and an Agricultural Policy/Environmental eXtender (APEX) Course on **Nov. 3-7** at the Centeq Research Plaza on the Texas A&M University campus.

The two-day introductory SWAT course, Nov. 3-4, will train beginning users on the SWAT model using the ArcGIS-SWAT interface. The two-day advanced SWAT course, Nov. 6-7, will cover sensitivity analysis, model calibration and uncertainty analysis using the 2005 version of SWAT with an ArcGIS interface.

APEX, a one-day course on Nov. 5, was developed for use in whole farm/small watershed management. The model was constructed to evaluate various land management strategies considering sustainability, erosion, economics, water supply and quality, soil quality, plant competition, weather and pests.

"Participants will gain a greater understanding and perspective of the impacts on land management to water quality and water quantity," said **Dr. Raghavan Srinivasan**, director, Spatial Sciences Laboratory and instructor for the courses.

Upon course completion, participants will receive Texas A&M continuing education units.

For more information or to register, visit http://watereducation.tamu.edu or contact Courtney Swyden, cmswyden@ag.tamu.edu or (979) 845-1851.

Floodplain Delineation Short Course set

The Texas Water Resources Institute will host the Floodplain Delineation using GIS Course on **Dec. 3-5** at the Centeq Research Plaza on the Texas A&M University campus.

The two and a half-day course will focus on the fundamental concepts of open-channel hydraulics and include hands-on applications of the HEC-RAS and HEC-GeoRAS software packages. Instructors will discuss steady and unsteady flow simulations using HEC-RAS and the delineation and mapping of floodplains using the HEC-GeoRAS tool.

The course is designed for civil engineers and floodplain managers seeking to learn about floodplain analysis using the HEC-RAS and HEC-GeoRAS software programs. "Participants will learn the latest techniques of floodplain mapping and become familiar with HEC-GeoRAS mapping procedures," said **Dr. Francisco Olivera**, associate professor in Zachry Department of Civil Engineering.

Upon course completion, participants will receive 20 professional development hours and two Texas A&M continuing education units.

Instructors include Olivera, and **Matthew Zeve**, a senior project manager in the Houston office of TCB/AECOM, a multi-disciplinary consulting firm.

For more information or to register, visit http://watereducation.tamu.edu or contact Courtney Swyden, cmswyden@ag.tamu.edu or (979) 845-1851.

Registration for watershed planning course still open

Registration is open for the Texas Watershed Planning Short Course on **Jan. 12-16, 2009**, at the Mayan Ranch in Bandera. This week-long course will familiarize participants with the Environmental Protection Agency's nine key elements of a watershed protection plan and the general principles of and tools for building partnerships, assessing watersheds, identifying solutions and designing an implementation program. Participants will receive 2.9 continuing education units from the National Registry of Environmental Professionals.

For more information on the course, visit http://watershedplanning.tamu.edu/ or contact Kevin Wagner at klwagner@ag.tamu.edu.

Other Upcoming conferences

Oct. 7-9	Texas Instream Flow Conference	San Antonio
Oct. 20-22	Surface Water Opportunities in New Mexico	Albuquerque
Nov. 5-7	Texas Water Quality Conference	San Antonio

Irrigation specialist retires after 40 years with AgriLife Extension

New

By getting his feet muddy and using a Pepsi bottle in an unorthodox way, **Leon New** has made a difference in crop production on the High Plains.

For more than 40 years, New has been working to help producers get water to their thirsty crops as economically and efficiently as possible as a Texas AgriLife Extension Service irrigation specialist.

On Aug. 31, he said goodbye to his job, knowing that along the way he's done his best to understand and meet the needs of irrigation producers, he said.

To continue reading the AgNews story, click here.

AgriLife Research breeder develops drought-tolerant corn

At the end of the day, drought tolerance in corn has to equate to good yields and good quality, not just good looks, said a Texas AgriLife Research scientist.

Dr. Wenwei Xu, AgriLife Research corn breeder from Lubbock, is working with crosses between temperate and tropically adapted varieties of corn to find a drought-tolerant plant that performs well under reduced irrigation.

To continue reading this AgNews story, click here.

USGS Texas Water Science Center publishes reports

The following Texas Water Science Center reports were published in July & August:

Quality of water and sediment in streams affected by historical mining, and quality of mine tailings, in the Rio Grande Basin, Big Bend area of the United States and Mexico, Lambert, R.B., Kolbe, C.M., and Belzer, Wayne, 2008, U.S. Geological Survey Scientific Investigations Report 2008–5032

Alternative regression equations for estimation of annual peak-streamflow frequency for undeveloped watersheds in Texas using PRESS minimization, Asquith, W.H., and Thompson, D.B., 2008, U.S. Geological Survey Scientific Investigations Report 2008–5084.

Evaluation of acoustic Doppler velocity meters to quantify flow from Comal Springs and San Marcos Springs, Texas, Gary, M.O., Gary, R.H., and Asquith, W.H., 2008, U.S. Geological Survey Scientific Investigations Report 2008–5083.

Water-level altitudes 2008 and water-level changes in the Chicot, Evangeline, and Jasper aquifers and compaction 1973–2007 in the Chicot and Evangeline aquifers, Houston-Galveston region, Texas, Kasmarek, M.C., and Houston, N.A., 2008, U.S. Geological Survey Scientific Investigations Map 3031.

Hydrologic conditions and quality of rainfall and storm runoff for two agricultural areas of the Oso Creek watershed, Nueces County, Texas, 2005–07, Ockerman, D.J., 2008, U.S. Geological Survey Scientific Investigations Report 2008–5103.

New Project

Modeling Support for Little Brazos River Tributaries

Eleven segments of the central Brazos River Watershed are on the state's 303(d) list of impaired waters for bacterial contamination. This project will build on and work with other projects dealing with bacterial contamination of watersheds in Texas. Texas A&M University's Biological and Agricultural Engineering Department, with assistance from the Brazos River Authority will conduct a load duration curve analysis of water quality monitoring data to determine needed reductions in bacterial pollution and will conduct watershed modeling to estimate amounts of bacteria pollution coming from different sources.

Principal Collaborators: Texas Water Resources Institute, Texas AgriLife Research, Texas A&M University's Spatial Sciences Laboratory, Robertson County Soil and Water Conservation District, Brazos River Authority

Funding Agency: Texas State Soil and Water Conservation Board

Renewed Projects

Water Quality Education for Hood County, Texas

This project is a continuation of previously funded educational efforts that have focused on engaging and providing critical information to stakeholders and landowners on and near Lake Granbury. This project will provide an assessment of existing and potential water quality threats related to nonpoint source water pollution within the watershed. The Texas Water Resources Institute and Texas AgriLife Extension Service will also assist the Brazos River Authority and Texas Commission on Environmental Quality in developing a watershed protection plan to improve and protect water quality within the Brazos River Basin. Key objectives of this project include holding public meetings to educate stakeholders and clients within the watershed about water quality and its protection, providing public educational programs to help achieve improved water quality, and conducting training events on proper operation and maintenance of on-site wastewater treatment systems and collection facilities.

Collaborators: Texas Water Resources Institute, Texas AgriLife Extension Service, Brazos River Authority, Texas Commission on Environmental Quality, USDA Natural Resources Conservation Service

Funding Agency: USDA Natural Resources Conservation Service

New Publications

Drinking Water Problems: MTBE, Monty Dozier, Bruce J. Lesikar, Texas AgriLife Extension Service Publication L-5502

Methyl tertiary-butyl ether, a gasoline additive commonly known as MTBE, can contaminate groundwater and cause health problems for those exposed to it for a long time. However, filtering devices can remove this and other additives from well water.

The Watershed Management Approach, Russell A. Persyn, Molly Griffin, Amy T. Williams, Clint Wolfe, Texas AgriLife Extension Service publication B-6154 (reprint)

Watershed management is a coordinated environmental management framework that focuses on highest priority problems. This publication explains the data collection and data assessment that is part of such a system, and describes the implementation process. The publication will help stakeholders understand watershed management policies.

Rainwater Harvesting: Soil Storage and Infiltration System, Justin Mechell, Bruce J. Lesikar, Texas AgriLife Extension Service publication B-6195 (reprint)

A soil storage and infiltration system collects rainfall runoff from the roofs of buildings and directs it underground where it infiltrates the soil. Such a system conserves water and protects it from

surface pollution. This publication describes how to plan, design and install various types of soil storage and infiltration systems.

Harvesting Rainwater for Wildlife, James Cathey, Russell A. Persyn, Dana Porter, Monty Dozier, Michael Mecke, Billy Kniffen, Texas AgriLife Extension Service publication B-6182 (reprint)
Landowners can attract wildlife to their properties by installing rainwater catchment devices. This publication explains wildlife water sources, management considerations, rainfall catchment areas and wildlife tax valuation. It also illustrates various types of devices used to provide supplemental water for wildlife.

Rainwater Harvesting: Raingardens, Justin Mechell, Bruce J. Lesikar, Texas AgriLife Extension Service publication L-5482 (revision)
A raingarden is in artifical depression in the landscape that collects and stores rainfall runoff until it can infiltrate the soil. Raingardens help conserve water and protect it from surface pollution. In this publication, you will learn how to design and install a raingarden and how to select the right location for it.

On-site Wastewater Treatment Systems: Graywater Use and Water Quality, Bruce J. Lesikar, Justin Mechell, Rachel Alexander, Texas AgriLife Extension Service publication L-5504
Like paper and plastic, some water can be recycled. This 'graywater,' which can be water from bathtubs and showers, clothes washing machines and some sinks, can then be used in landscapes.

"**New Waves**," an email newsletter of Texas Water Resources Institute, a unit 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 or call 979.845.1862 and include your contact information. All submissions may be edited for grammar and style.