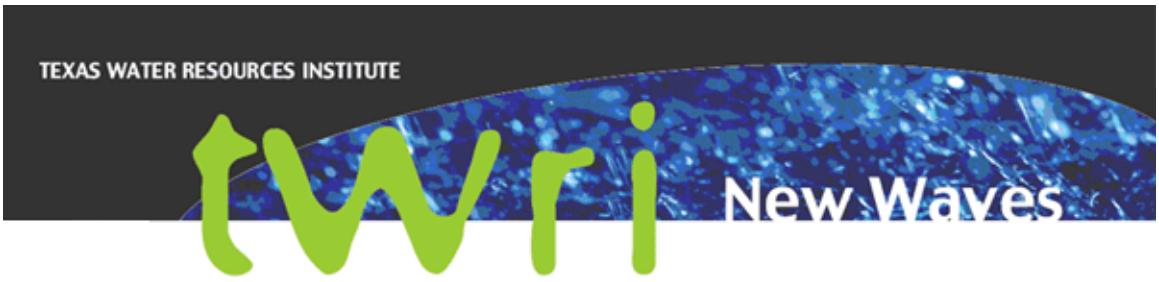

Breaking news about water resources research and education at Texas universities

Sept 27, 2007

New issue of "txH2O" published

The current issue of Texas Water Resources Institute's magazine, txH2O, is published and available for interested readers. This issue focuses on "Managing Bacteria Pollution in Texas" and contains several articles related to this topic. Other articles include features on the Texas Water Development Board, the computer modeling program SWAT and an overview of the Rio Grande Basin Initiative's accomplishments.

For the first time, online readers may comment on several of the articles. To read the online version, click here, or to request a paper copy, email twri@tamu.edu.

Stakeholders Helping to Protect Cedar Creek Watershed

Water quality has declined in the Cedar Creek Reservoir, but experts with The Texas A&M University System are helping landowners and government officials develop plans to clean the water that flows into the 160-acre lake.

Stakeholders in the reservoir's four-county watershed have an opportunity to offer opinions and help draft the Watershed Protection Plan for Cedar Creek Reservoir.

Experts with Texas Cooperative Extension, the Texas Agricultural Experiment Station and the Tarrant Regional Water District have led efforts to form the committee. They will collaborate with the Texas Water Resources Institute on efforts to study water quality and improve the reservoir.

For full AgNews story, click here.

Public feedback sought on Pecos River Watershed Protection Plan

Project members of the Pecos River Basin Assessment Program with stakeholder inputs recently completed a draft of the Pecos River Basin Watershed Protection Plan and are seeking further input from the public about the plan.

Project collaborators include landowners and stakeholders, Texas Cooperative Extension, Texas State Soil and Water Conservation Board and Districts, Texas Agricultural Experiment Station, Texas Water Resources Institute, the U.S. International Boundary and Water Commission, and Texas Clean Rivers Program. Funding is provided by the Texas State Soil and Water Conservation Board through a Clean Water Act grant from the U.S. Environmental Protection Agency.

Draft copies of the protection plan and on-line comment instructions are available at http://pecosbasin.tamu.edu.
For the AgNews story, click here.

Grant funds assembly, testing of on-farm manure-to-energy conversion system

The Texas Water Resources Institute and Texas Cooperative Extension recently received a grant from the USDA Natural Resources Conservation Service to test an on-farm manure-to-energy conversion system for future use on Central Texas dairies.

The grant is funding the assembly and testing of a portable energy generation unit that is otherwise known as a thermophilic digester and fluidized bed gasifier system.

Dr. Saqib Mukhtar, Extension agricultural engineer and one of the project leaders, said, "We're trying to find ways to divert excess manure and reduce repeated and excessive application of phosphorus to waste application fields that can potentially become a non-point source of pollution."

The portable unit will have an anaerobic digester to produce methane and carbon dioxide, which will be used as a source of energy. The second part of the system is a gasifier, used to gasify fossil fuel or biomass including manure.

Other researchers with the Texas Agricultural Experiment Station involved are **Dr. Cady Engler**, professor, and **Dr. Sergio Capareda**, assistant professor, of the Department of Biological and Agricultural Engineering.

Click here to read the AgNews story on this project.

Modeling/Groundwater Management short course scheduled

A two-day course on constraints for combining modeling and management for groundwater, titled "You got chocolate in my peanut butter," is scheduled for Oct. 15-16, 2007, in Austin. Dr. John Doherty, James Rumbaugh and Dr. Steve Young are featured speakers.

The course, sponsored by The University of Texas at Austin Jackson School of Geosciences, Texas Water Development Board (TWDB) and URS Corporation, is free but attendees must register. To register, contact Pam Bradley at pam_bradley@urscorp.com and for questions about the course, contact Steve Young at 512.419.5076 or steve_young@urscorp.com.

The course will cover approaches for establishing groundwater modeling objectives, constructing and calibrating groundwater modes and estimating the uncertainty in model predictions. The course will present applications of Groundwater Vistas, commercial software adopted for use by TWDB for generating and visualizing groundwater model results, and of *PEST*, free software that provides advanced methods for model calibration and quantifying predictive uncertainty. The course will present different model calibration approaches and explain benefits associated with using parameter-estimating codes like *PEST* to calibrate models. The course will also present sources of model uncertainty and demonstrate how *PEST* can be used to estimate uncertainty in predicted drawdowns, groundwater fluxes, water budgets and hydraulic heads.

The course is for modelers, managers and policy makers interested in understanding potential benefits of using models in addressing groundwater management issues and constraints that can limit the utility of models. Attendees should have a basic understanding of hydrogeology. The course will help modelers determine whether they are developing models useful to decision makers and will help decision makers work with modelers to develop appropriate modeling objectives.

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 and Geophysics, Mathematics, Ecosystem Science and Management, and Water Management and Hydrologic Sciences, is scheduled for the fall and spring semesters. The lectures begin with a reception at 3:30 p.m. in Scoates Hall foyer and the presentation at 4:10 p.m. in room 208.

The remaining fall lectures are:

- Oct. 3, Dr. Larry Winter, Deputy Director of The National Center for Atmospheric Research, will discuss Subsurface Atmosphere
- Oct. 10, Dr. Dennis McLaughlin, from the Massachusetts Institute of Technology, will discuss Data Assimilation
- Oct. 17, Dr. John Nieber, from the University of Minnesota, will discuss Water Resources
- Oct. 31, Dr. Dennis Lettenmaier, from the University of Washington, will discuss Water Cycles
- Nov. 14, Dr. Todd Arbogast, The University of Texas at Austin, will discuss Algorithms/Contaminant Transport
- Nov. 28, Dr. Ashim Datta, Cornell University, will discuss Biological Systems

For more information, visit www.baen.tamu.edu or call (979) 845- 3931.

TWRI hires staff, gains project for Arroyo Colorado watershed

Texas Water Resources Institute recently added three staff members and one project to work with the Arroyo Colorado Watershed Partnership (ACWP) on water quality improvements in this South Texas watershed.

The ACWP was originally organized by Texas Coastal Watershed Program, which is part of Texas Sea Grant and Texas Cooperative Extension, in cooperation with the Texas Commission on Environmental Quality (TCEQ) and the Texas State Soil and Water Conservation Board (TSSWCB).

In January 2007, the ACWP published the Arroyo Colorado Watershed Protection Plan (ACWPP)—one of the first watershed protection plans in the state—that identified and addressed impairments and concerns in the watershed. Now the partnership is implementing the plan through TWRI's ACWPP Implementation project, funded by a grant from TCEQ and U.S. Environmental Protection Agency.

In June, TWRI hired Laura De La Garza as watershed coordinator for the partnership. She coordinates the Arroyo Colorado Watershed Steering Committee and facilitates and tracks implementation measures described in the completed plan. Laura, who served as the coordinator during plan development, publicizes and builds awareness of these watershed improvement efforts and provides extensive outreach and education activities.

Megan Meier, a Texas A&M University graduate student in hydrological sciences, and Amy Rangel, a graduate of The University of Texas at Austin, joined TWRI's staff in June and September, respectively, as the partnership's part-time grant writers and water quality data analysts.

A SWAT modeling project that will simulate the Arroyo Colorado watershed is the most recent addition to a group of four projects that TWRI manages to address Arroyo Colorado water quality concerns.

This project will simulate current pollution loadings using the SWAT computer model, which will help with the reassessment of the needed load reductions. TSSWCB, Blackland Research and Extension Center, Texas A&M University's Spatial Sciences Laboratory, TCEQ and Extension are partnering with TWRI and ACWP on this project.

Other TWRI projects on the Arroyo Colorado are:

- Arroyo Colorado Agricultural Nonpoint Source Assessment project, which assesses and demonstrates the effectiveness of best management practices (BMPs) implemented at the field and sub-watershed level to improve water quality and measures progress toward meeting ACWPP goals
- Education of Best Management Practices in the Arroyo Colorado Watershed project, which educates farmers on proper nutrient, pest and irrigation management to reduce the potential for nonpoint source pollution.

TSSWCB is funding both of these projects, through Clean Water Act 319(h) grants from the EPA.

Take the Earth Kind challenge

Earth Kind, a Texas Cooperative Extension program promoting environmental stewardship for urban landscapes, is offering an online challenge to help with environmentally friendly landscaping. This 25-question quiz asks for input about topics such as landscape design, plant selection, efficient irrigation and insect and disease management and then generates a personalized score to let the person taking the challenge know how well his or her garden is sustaining a healthy environment.

Dr. Don Wilkerson, professor in Texas A&M University's Department of Horticulture and one of the developers of the challenge, said if the person is using anything other than the optimal Earth Kind practices, the challenge will then suggest changes in landscape practices that would help create a healthier and more sustainable environment. It will also provide additional information, including links to Earth Kind publications.

Wilkerson encouraged users to complete the online evaluation of the challenge, as it will help Extension evaluate the success and impact of the program.

The principle goals of Earth Kind include water conservation, safe use and handling of fertilizers and pesticides and reduction of yard waste entering landfills.

To take the challenge, go here.

TTI's Erosion Control Lab helps protect Texans' water supply

With the record rainfall, Texas has experienced an increase in water pollution from erosion. The Texas Transportation Institute's (TTI) Hydraulics, Sedimentation and Erosion Control Laboratory (HSECL) test's erosion-control products used by the Texas Department of Transportation to help prevent erosion and sediment run-off.

"Heavy and frequent rainfall during road construction projects can lead to some of the worst environmental problems unless the proper erosion and sediment control measures are in place to

minimize the amount of sediment leaving the construction site," said Assistant Research Scientist Jett McFalls. Many of the products seen along construction sites to control erosion have been tested at TTI's HSECL.

To read complete story, click here.

Texas A&M Engineering researchers receive grants for Ag-based energy

Texas A&M Engineering researchers have received Sun Grant Initiative grants for research into developing and enhancing new sources of energy based on agricultural products.

The Sun Grant Initiative will make available approximately $2.5 million during the next three years to area scientists and engineers. The initiative is a national program established to create new solutions for America's energy needs and to revitalize rural communities by working with land-grant universities and their federal and state laboratory partners on research, education and extension programs.

For the full Texas A&M Engineering news story, click here.

New Projects

Assembly and Testing of an On-Farm Manure to Energy Conversion BMP for Animal Waste Pollution Control
Project personnel will assemble and test a thermophilic digester and fluidized bed gasifier system, also known as an On-Farm Manure to Energy Conversion System (OFMEC), that can be used as a demonstration tool to show dairy producers how they can convert the waste stream of their dairies into energy that can power their farms and/or homes.
Principal Collaborators: Texas Water Resources Institute, Texas Cooperative Extension, Texas A&M University Biological and Agricultural Engineering Department
Funding Agency: USDA Natural Resources Conservation Service

Bacteria Runoff BMPs for Intensive Beef Cattle Operations
This project will demonstrate and evaluate the effect of grazing management on pathogen transport from an intensively managed irrigated pasture at the Texas A&M University Farm in Brazos County. Management guidelines will be developed based on the evaluations. These guidelines and other materials developed through this project will be transferred to USDA Natural Resources Conservation Service, Texas State Soil and Water Conservation Board, local soil and water conservation districts, Texas Cooperative Extension and livestock producers for incorporation into educational, technical assistance and cost-share programs and implemented by producers.
Principal Collaborators: Texas Water Resources Institute, Texas Cooperative Extension
Funding Agency: USDA Natural Resources Conservation Service

New Publications/Papers

"Aquatic Life and Habitat Inventory Assessment"
W. Belzer, TWRI publication TR-305.
The U.S. Section International Boundary and Water Commission (USIBWC) Clean Rivers Program (CRP) coordinated a biological assessment with assistance from the Texas Commission on Environmental Quality (TCEQ) in the upper Pecos and with the U.S. Geological Survey (USGS) in the lower Pecos. Sites were selected along the Pecos River in Texas for assessment of biological

condition. At those sites, data on benthic macroinvertebrate organisms, fish and physical habitat characteristics of the river were collected and catalogued according to protocols previously published by TCEQ.

"Quantity and Fate of Water Salvage as a Result of Saltcedar Control on the Pecos River in Texas"
Z. Sheng, **A. K. McDonald, C. Hart**, **W. Halter and J. Villalobos**, TWRI publication TR-304.
This report presents results for the Subtask 3.3 of the Pecos River Basin Assessment Project sponsored by the U.S. Environmental Protection Agency (EPA) and the Texas State Soil and Water Conservation Board (TSSWCB). The overall objective of Subtask 3.3 is to examine the hydrologic impacts of *Tamarix spp.* (saltcedar) control along a 5 km segment of the Pecos River near Mentone, Texas.

"Master Gardener Specialist: Rainwater Harvesting"
Bruce J. Lesikar, **Justin Mechell and Rachel Alexander**, Texas Cooperative Extension publication D-1459.
This manual is for training Master Gardeners who want a specialization in rainwater harvesting. Topics covered include storm water management, rangeland watersheds, rainwater collection and storage, filtration and sanitation, landscaping and rainwater for wildlife. The book contains case studies of successful rainwater harvesting systems, a glossary of terms, sample press releases for increasing public awareness, drawings of equipment and other resources.

"On-site Wastewater Treatment Systems: Understanding and Maintaining your Septic System"
Bruce J. Lesikar and Justin Mechell, Texas Cooperative Extension publication L-5941.
It is important that homeowners maintain their septic systems properly. Otherwise, problems that develop could threaten human health and the environment. In this publication you will learn how to maintain all the components of a septic system. There are helpful checklists to remind you of important steps in maintaining the safety and integrity of your system.

"**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 and Extension 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.

If you have difficulty with any links, please copy and paste the full URL into your web browser.

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