TEXAS WATER RESOURCES INSTITUTE

twri New Waves

Breaking news about water resources research and education at Texas universities

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AmeriCorps funds Extension program

AmeriCorps, a network of local, state and national service programs, recently funded a new Texas Cooperative Extension program, titled "The Upper Rio Grande Water Conservation Corps" for El Paso, Hudspeth and Culberson counties. The three-year program, funded for $1.15 million, will focus on environmental awareness, clean and safe water, and youth leadership development.

The community, youth and agriculture program is designed to reduce the per capita use of water in communities, increase efficiency of water use in agriculture and increase volunteerism. Daphne Richards, El Paso County Extension agent, is project manager.

"The program was funded, in large part, because of the Rio Grande Basin Initiative and its infrastructure that is in place in the region," said Bill Harris, associate director of the Texas Water Resources Institute and project director for the initiative. "RBGI already has the personnel, facilities and some of the program in place to help implement this program."

EPA seeking teams of college students to research environmental challenges

The U.S. Environmental Protection Agency is seeking applicants for the agency's People, Prosperity and the Planet (P3) competition, which enables teams of college students to research, develop and design scientific and technical solutions for environmental challenges.

EPA will award up to 50 grants of $10,000 during 2007 to student teams at universities and post-secondary educational institutions to develop proposals that achieve economic prosperity while protecting the environment. EPA encourages interdisciplinary teams, including representatives from multiple engineering departments and/or departments of chemistry, architecture, industrial design, economics, policy, social sciences, business and communication.

The selected teams will be invited to compete for the P3 Award in Washington, D.C. in 2008. The award allows for additional funding to further develop and implement their project.

Proposals must be received by Dec. 21, 2006. For application information and more about the P3 competition, visit, http://www.epa.gov/P3 .

Rep. Bonilla visits El Paso

Rep. Henry Bonilla and staff visited the El Paso Agricultural Research and Extension Center Wednesday, August 16. A reception was held at the center in appreciation for Bonilla's support of the Rio Grande Basin Initiative for

water efficiency and conservation, and Texas Rural and Low Income Community Water Development Programs. Bonilla also took the opportunity to announce that $3,762,500 in additional funding has been secured for the Lower Valley Water District. Approximately 70 people attended.

Graduate student researches insect control of saltcedar

Results from a Texas A&M Entomology graduate student's research on using saltcedar beetles as a biological control for saltcedar showed that in one year the insects can help defoliate this invasive, water consuming tree.

"Results from field cage and natural experiments indicate that one full season of defoliation has adverse consequence for the trees," said Jeremy Hudgeons. Hudgeons and advising professors, Drs. Allen Knutson, and Kevin Heinz, focused on determining the effectiveness of using this leaf-eating beetle to help control the saltcedar invasion.

"Tree starch reserves were reduced and tree regrowth was less after beetle defoliation," he said. "We believe three to four years of tree defoliation by the insects can result in tree death."

Saltcedar, also known as tamarisk, was imported into the United States in the 1800s as an ornamental plant and the trees were planted along some stream banks as a form of erosion control.

"Before beginning graduate school, I had firsthand experience of the devastating impact saltcedar has in its non-native habitat," he said. "Streams can become so choked with the trees that they are virtually inaccessible if not nonexistent."

The negative attributes of saltcedar were beginning to be noticed by the 1920s. In heavily infested areas, saltcedar reduces stream flow, increases fire frequency, decreases native plant and animal diversity, and consumes significant amounts of water.

"Working with landowners and local, state and federal cooperators, I was able to monitor open field releases of the beetles and conduct a large-scale field experiment studying the effects of beetle feeding on saltcedar trees," said Hudgeons, a recipient of a $5,000 2005-06 U.S. Geological Survey research grant.

Hudgeons surveyed two sites in West Texas in which saltcedar leaf beetles were released to determine if the beetles were establishing and dispersing. Beetles have successfully established at one of the sites and have defoliated more than 400 trees in a four acre area. He also measured the impact beetle defoliation has on tree starch reserves and determined the potential for tree re-growth following beetle feeding.

Hudgeons received his bachelor's degree in molecular biology from Texas Tech University. He said he wants to pursue a career in natural resource management in either the private or public sector.

His research was funded by TWRI through the USGS as part of the National Institutes for Water Research annual research program. TWRI is the designated institute for water resources research for Texas.

For more information on Hudgeons' research, visit "USGS Research Grants" at http://twri.tamu.edu.

Fact sheets available on technologies to reduce phosphorus runoff available

Going into its second year of evaluating new technologies, Texas Cooperative Extension and Texas Water Resources Institute are collaborating to reduce high levels of phosphorus runoff from two Central Texas watersheds. The New Technologies for Animal Waste Pollution Control project, funded through a 319 grant from the Texas State Soil and Water Conservation Board (TSSWCB), has completed year one technologies and final reports and fact sheets are available now at TWRI's Web site.

Dr. Saqib Mukhtar, an Extension specialist in animal waste management, and his team are providing third-party evaluation of technologies aimed at reducing phosphorus by an average of 50 percent from dairy lagoon effluent applied to waste application fields in the North Bosque and Leon River Watersheds.

Lucas Gregory, TWRI project manager, said that in 2005, they evaluated the Geotube® de-watering system on a 2000-head lactating cow open-lot dairy in the Leon River watershed and evaluated an Electrocoagulation system on a 700-head lactating cow dairy in the Bosque River watershed.

"Results showed that the Geotube® dewatering system and the Electrocoagulation system were highly effective in reducing phosphorous from dairy lagoon effluent," he said. "Additionally, the Geotube® system did an excellent job of removing total solids from the effluent."

For the project's second year, one technology demonstration is being conducted by EnviroLink and uses a bacterial approach to try to meet the goal of 50 percent total phosphorus removal. The other technology demonstration, conducted by Envirotech Inc., proposes the use of an aluminum mining by-product known as Bauxsol to bind and precipitate phosphorus. Both tests are in early stages of development and results are yet to be released.

Year three technologies are currently being reviewed and are scheduled to be chosen soon. For more information about the project or to view fact sheets, final reports, or quarterly updates, visit TWRI's Web site at http://twri.tamu.edu/project-info/NewTechnologies/.

TWDB releases draft 2007 water plan

The Texas Water Development Board recently released the draft 2007 State Water Plan for public comment. The plan, developed through a regional water planning process, guides how Texans will meet their water needs through 2060 in times of drought.

The report is available for viewing at www.twdb.state.tx.us . Public meetings are scheduled in September throughout Texas.

Upcoming Conferences

Stream Restoration Training Course

The Texas Water Resources Institute is hosting a Stream Restoration Training Course on Sept. 12-13 at the Dallas Agricultural Research and Extension Center.

Greg Jennings of North Carolina State University and Bruce Lesikar of Texas A&M University will train participants on stream classification and restoration, geomorphology data analysis,

restoration concepts and design approaches and more.

Jennings and Lesikar will conduct field exercises at the Arbor Hills Nature Preserve in Plano, Texas and demonstrate techniques for measuring stream bank erosion, cross sectional surveys, longitudinal profiles, substrate analyses and channel stability.

Cost is $275 per person and the training is limited to 40 participants. Registration forms are available online at http://nctx-water.tamu.edu or contact Clint Wolfe at cwolfe@ag.tamu.edu or 979.845.1851.

New Mexico Water Conference

The 51st Annual New Mexico Water Conference will be Oct. 3-4 at the Hotel Albuquerque at Old Town.

The conference will cover New Mexico's water quality and quantity issues, regulations and standards; challenges faced by small communities and agricultural communities; water quality programs and more.

Early registration forms and payment must be received before Aug. 31. Regular registration continues Sept. 1 through Sept. 26. For more information about the conference and the tour of the Albuquerque Water Treatment Plant, visit http://wrri.nmsu.edu .

New Mexico Drought Summit

New Mexico's 4th Annual Drought Summit will be Oct. 18 at the University of New Mexico's Continuing Education Center in Albuquerque.

The summit will focus on climate change and New Mexico's water resources and will feature Dr. Jonathan Overpeck, director of the Institute for the Study of Planet Earth at the University of Arizona; Dr. Dave Gutzler, professor at the University of New Mexico; and Jacques DuBois, chairman and CEO of Swiss Re. More details will be available online in September at http://www.nmdrought.state.nm.us

International Conference on Water in Arid and Semiarid Lands

The International Conference on Water in Arid and Semiarid Lands will be on Nov. 15-17 at Texas Tech University.

Conference themes include information about soils, crops, and irrigation; water resources; water law and policy; and climate, ecology, remote sensing and GIS applications and more. Early registration begins Sept. 15.

For more information about the conference and the workshops and field trips during the conference, contact the ICASALS office at 806.742.2218.

River Systems Institute's Charting the Course

"Charting the Course," a Texas water planning and policy development conference, is set for Nov.

15-17 at the State Capitol Extension in Austin.

Sponsored by the River Systems Institute, the conference will feature symposia by the state's leading scientists and representatives from water resource management agencies focusing on how far the state has come in terms of water resource management and planning.

The conference will also highlight the development of the 2007 Texas Water Plan, the implications and obstacles to its implementation and how policy activities of the next legislative session can provide a framework for overcoming these obstacles. Other issues, including water conservation, reuse, environmental flows and groundwater management will be discussed.

More information is available at www.rivers.txstate.edu or contact Annette Paulin at 512.558.4523 or chart.the.course@grandecom.net .

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