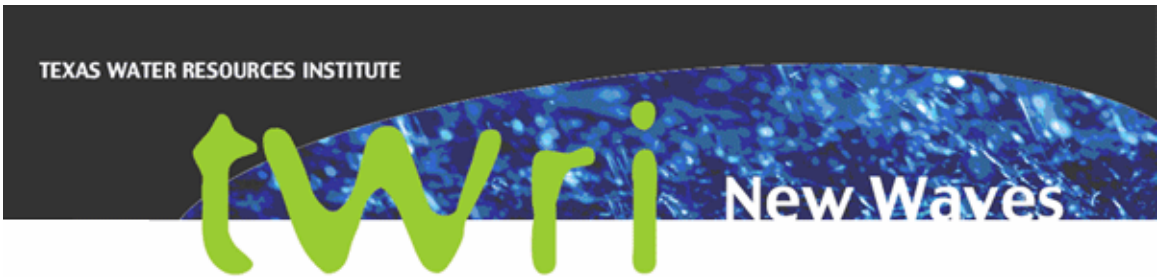


***Breaking news about water resources research and education at Texas universities***

**November 29, 2007**

## TWRI, federal agencies will partner in Bosque River project authorized by Congress

The Texas Water Resources Institute, U.S. Army Corps of Engineers and U.S. Department of Agriculture's Natural Resources Conservation Service were selected to lead the new North Bosque River water quality improvement project that was recently authorized by Congress through the Water Resources Development Act. Congress will appropriate funding at a future date.

U.S. Representative Chet Edwards, senior member of the House Energy and Water Appropriations Subcommittee and strong supporter of the project, said the plan will help pave the way for vital funding on a wide range of clean-up efforts such as wetlands, lagoon upgrades, wastewater treatment plant upgrades and dairy operation modifications.

"Short term objectives of the plan include development of a comprehensive implementation plan that spells out specific improvements to be made throughout the watershed," Edwards said, in a news release. "Potential projects could include wetlands, or even water treatment facilities upgrades to help remove phosphorus from Lake Waco. Long-term goals include maintaining environmental improvements and implementation of four demonstration projects involving dairy producers, rural landowners near dairies and municipalities."

TWRI and the Corps of Engineers, working with Baylor University, Tarleton State University, Texas A&M University's Spatial Science Laboratory and others, have already developed suggested alternatives for environmental infrastructure improvements for the North, Middle and South Bosque watersheds to reduce nutrient and bacterial contamination of the Bosque River.

The North Bosque River and Lake Waco serve as the primary drinking water supplies for more than 200,000 people. Water quality testing has found high levels of nutrients in the North Bosque that have contributed to excessive growth of algae and other aquatic plants in the river. In addition, nine tributaries and segments of the North Bosque River do not meet water quality standards for bacteria.

## Institute requests graduate student research proposals

TWRI announces a request for research proposals from graduate students for its 2007-2008 grant program. Funded by the U.S. Geological Survey and the National Institutes for Water Research, this program is aimed at funding water resources-related research of graduate students at Texas universities.

TWRI anticipates funding 10 graduate research enhancement grants of up to $5,000 in the area of water resources with the intent to strengthen graduate student research and education programs in water resources.

Topics of research considered include conservation and management of water resources, surface water, groundwater, wastewater, irrigation, drinking water, watersheds, water policy, water quality, water marketing, geographic information systems, computer modeling, aquatic ecosystems, environmental flows and riparian issues. Proposals on other water related concerns will also be considered.

Research proposals are due in the TWRI office by 5:00 pm on Jan. 3, 2008. Submission information is available online at http://twri.tamu.edu. For more information, contact Cecilia Wagner at cecilia@tamu.edu or 979.458.1138.

**Call for student papers for Texas Water 2008 conference**

The Water Environment Association of Texas (WEAT) and the Texas Section American Water Works Association (AWWA) are hosting the Texas Water 2008 conference in San Antonio, Texas, March 25-28, 2008 as well as sponsoring a student paper/presentation competition.

Abstracts for student papers are due by Dec. 3, 2007. Abstracts can be related to any aspect of water, wastewater, and hazardous waste management, environmental effects, risk assessment, legal or social issues. Papers must be based on work done as a student and be presented by the student (or recent graduate). Faculty advisors may be listed as co-authors.

The three best presentations receive a cash award and the best paper will receive an invitation to attend the annual AWWA Convention with their expenses covered by Texas Water 2008 sponsors. All students who submit abstracts will receive one-year student memberships to either WEF or AWWA.

Four hard copies and an electronic version of an abstract should be submitted to Dr. William G. Rixey, Department of. Civil and Environmental Engineering, 4800 Calhoun Rd, Cullen Engineering Bldg. 1, University of Houston, TX 77204-4003. Abstracts may also be sent electronically to wrixey@uh.edu with hard copies to follow by regular mail. Students will be notified regarding selection of abstracts by January 1, 2008.

For more information, contact Rixey at 713.743.4279 or wrixey@uh.edu. Information regarding the conference is available at http://www.texas-water.com/.

**CUAHSI-CMWR Student Fellow Awards**

The Consortium of Universities for the Advancement of Hydrologic Science (CUAHSI) has announced an opportunity for graduate students to apply for a registration fee waiver for the Computational Methods in Water Resources (CMWR) 17th International Conference, set for July 6-10, 2008 in San Francisco.

Ten students will be chosen to receive the CUAHSI-CMWR Student Fellow Awards, which are intended to encourage graduate students to participate, present research and interact with other scientist at the conference.

Deadline for applying for the CUAHSI-CMWR Student Fellow Awards is December 14, 2007. Graduate students must download and complete the online application which can be found at http://esd.lbl.gov/CMWR08/docs/CUASI_fellowship_application.rtf and submit a first author abstract by email to CMWR2008@lbl.gov. Notification of the awards will be made by January 11, 2008.

For more information about CMWR visit their website at http://esd.lbl.gov/CMWR08/stud_fellow.html and to find out more about CUAHSI, visit http://www.cuahsi.org/.

**New USGS Database online**

U.S. Geological Survey (USGS) historical instantaneous streamflow discharge data is now available online through the Instantaneous Data Archive (IDA), according to a USGS news release. With this new system, users can find streamflow information reported at the time intervals in which it is collected.

According to the release, this new database saves time and effort by giving users the information through a user-friendly automated process. USGS has provided historical daily streamflow data on the Internet for more than a decade, but for many scientific and engineering purposes, it is very useful to have the historical data in shorter time increments.

"A user-friendly archive of historical instantaneous streamflow data is important to many different users for such things as floodplain mapping, flood modeling and estimating pollutant transport," said Robert Hirsch, USGS associate director of water. "The new IDA site should be very helpful to research scientists and engineers for a wide range of hydrologic analyses."

The IDA web site currently has about 1.5 billion instantaneous data values from 5,500 stream gages in 26 states. Populating this web site takes effort and resources that are being provided "as available," and not all states and stream gages are available at this time. The number of states and stream gages with data will continue to increase. It is possible that the IDA database will expand to include other variables such as temperature and pH in the future.

For more information, visit http://ida.water.usgs.gov/ida/.

**Effects of climate change on Texas water resources conference set**

The River Systems Institute is hosting "Forecast: Climate Change – Impacts on Texas Water," April 28-30, 2008, at the Texas State Capitol Extension in Austin.

The conference will take a comprehensive look at what is known about climate change and what needs to be known to prepare for the local impact on Texas water resources and on the communities, both natural and human, that depend on them.

The conference will feature international and 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 climatologists and scientists who are working to understand the impact on Texas and its water resources.

Early Bird General Registration, which ends January 11, 2008, is $150, general registration, from Jan. 12-March 30, 2008, is $175, and late general registration, from April 1-28, 2008 is $200. Student registration is $35 a day.

The conference is co-sponsored by the Texas Water Resources Institute, Guadalupe – Blanco River Authority, Lower Colorado River Authority, Magnolia Charitable Trust, The University of Texas Environmental Sciences Institute and U.S. Geological Survey.

For more information on the conference, contact Annette Paulin, conference coordinator, at 512.754.9179 or CCTW08@grandecom.net.

**TWRI grant recipient studies effects of urbanization on freshwater inflows**
*By Kari Miller*

Texas A&M University international graduate student Debabrata Sahoo is working with his advising professor Dr. Patricia Smith from Texas A&M University's Department of Biological and Agricultural Engineering to study the effects of urbanization on estuarine environmental flows to the San Antonio Bay/Guadalupe Estuary system.

Sahoo, originally from India and a recipient of a $5,000 2006-07 Texas Water Resources Institute (TWRI) research grant, said estuaries are unique ecosystems that provide a habitat for many species.

"Estuaries are the connecting link between terrestrial and marine ecosystems and provide a critical coastal habitat that is essential both ecologically and economically," Sahoo said. "Important species depend on estuaries for their survival and contribute more than 90 percent of the total fisheries activity in the Gulf of Mexico."

According to his final report, the San Antonio River watershed is experiencing rapid urbanization. Changes in the watershed are likely altering the freshwater inflows to the San Antonio Bay/Guadalupe Estuary system.

Sahoo's research investigated this problem by modeling the effect of watershed development due to urbanization using remotely sensed data and a distributed hydrologic model. He also used a genetic algorithm to optimize the hydrologic parameters in the forecasting model. In the future, he wants to use genetic algorithms for allocation of land use to meet the freshwater demands of both the increasing population of San Antonio and the freshwater inflow requirements to maintain a healthy San Antonio Bay/Guadalupe Estuary ecosystem.

"My research focuses on application of remote sensing, evolutionary algorithms, time series and wavelets in conjunction with a hydrologic model to characterize freshwater inflows to the estuary," he said.

Sahoo said the results of his research suggest that urban growth has affected baseflow and storm flow. Model simulations suggested that an increase in impervious surfaces shifted the magnitude of peak flows.

"The results will help scientists, policy makers and water managers in the proper planning of water resources," he said. "Modeling the effect of urbanization on freshwater inflows and using a genetic algorithm to obtain the optimal solution for effective land allocation will aid in water resources management that meets both economic and ecological needs."

Sahoo said he would like to continue exploring water and environmental problems during his graduate studies.

His research 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 Sahoo's research, visit USGS Research Grants.

**New Publications**

**"Phase II Final Project Report Paso del Norte Watershed Council Coordinated Water Resource Database and GIS Project"**

**Christopher Brown, Zhuping Sheng, and Marc Bourdon**, TWRI publication TR-307.

The Coordinated Water Resources Database and GIS Project was developed to provide improved access to regional water resources data in the Paso del Norte region for regional water stakeholders to make timely decisions in water operations and flood control.

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