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Conservation Matters

THE TEXAS LAND, WATER AND WILDLIFE CONNECTION

A publication of the Texas Water Resources Institute and the Texas A&M Institute of Renewable Natural Resources

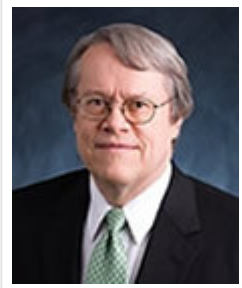
TWRI hosts water seminar

The Texas Water Resources Institute is hosting the third in a series of three water seminars by candidates for the chief water scientist position with the institute. **Dr. Venkat Lakshmi** of the Department of Earth and Ocean Sciences at the University of South Carolina will present "Studies of the Land Surface Hydrological Cycle using Modeling, Observations and Remote Sensing" on Friday, **May 4** at 11 a.m. in room 129 in the Agriculture and Life Sciences Building.

Dr. Brent D. Newman of the Earth and Environmental Sciences Division, Los Alamos National Laboratory, lectured on "Sustainability of Water Resources: Status and Outlook" on **April 24** and **Dr. Vincent C. Tidwell** of Sandia National Laboratories spoke on "Collaborative Modeling for Integrated Energy and Water Planning" on **April 6**. Both presentations are available online.

The institute is seeking a chief water scientist to lead its water science program in addressing high priority water management needs in Texas and the south-central United States.

Gulley honored as first recipient of Sierra Club's award



Dr. Robert Gulley, former Texas A&M Institute of Renewable Natural Resources (IRNR) program manager, recently received the Ken Kramer Living Waters Award from the Lone Star Chapter of the Sierra Club for his work with the Edwards Aquifer Recovery Implementation Program. He received the award in a special ceremony **April 17** in San Antonio.

Gulley guided the Edwards Aquifer Recovery Implementation Program, a collaborative, consensus-based stakeholder process, through development of a habitat conservation plan to protect federally listed endangered species affected by the management of the Edwards Aquifer. In November 2011, a 26-member stakeholder committee representing industry, environmental groups, farmers and cities agreed to the plan to be submitted to the U.S. Fish and Wildlife Service for approval.

"This agreement, which hopefully ends more than two decades of conflict over the Edwards Aquifer, would have never been reached without the tireless leadership of Dr. Robert Gulley, who facilitated the group activities," said **Ken Kramer**, director of the Lone Star Chapter of the Sierra Club.

"As program manager, Dr. Gulley, on numerous occasions, presented creative and balanced paths forward for the group, paths built on a strong foundation of knowledge of the Endangered Species Act, knowledge of the complex regional water issues of South-Central Texas, and an uncanny knack of understanding personalities and getting them to work together," Kramer said.

Dr. Neal Wilkins, director of IRNR, said the award highlights the expertise and consensus-building skills Gull the program.

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"He was the perfect person for this job, using all of his skills and experience to find a solution to a seemingly impossible problem," Wilkins said. "By working with all the stakeholders, Gulley was able to accomplish a comprehensive plan that balances the need for a stable water supply for the region with the protection of endangered species."

According to **Hal Suter**, chairman of the Lone Star Chapter of the Sierra Club, the Ken Kramer Living Waters Award was created this year to honor Kramer's 30 years of service as director of the Lone Star Chapter and his special dedication to water resources management over the course of his career.

"The award will be given when merited to the member or person who has contributed significantly to the preservation or restoration of water quality or to the pursuit of strategies for water resources management beneficial to the people and environment of Texas," Suter said.

Gulley joined the institute in 2007 from the U.S. Department of Justice, where he served as a senior trial attorney for natural resource issues. He previously taught in medical schools and worked as a scientist at the National Institutes of Health in Bethesda, Maryland.

Advanced water rights workshop to be held Aug. 30–31 in College Station

The Texas Water Resources Institute will host an advanced Water Rights Analysis Package workshop **Aug. 30-31** in College Station. The workshop will be held at the Spatial Sciences Laboratory on the Texas A&M University campus.

WRAP is a generalized modeling system for simulating the development, management, allocation and use of the water resources of a river basin. The Texas Commission on Environmental Quality's Water Availability Modeling (WAM) System consists of this modeling system, along with input data sets for all river basins of Texas, explained instructor, **Dr. Richard Hoffpauir**, a research engineering consultant for the Texas Engineering Experiment Station in College Station.

Hoffpauir said the workshop will cover advanced aspects of the Water Rights Analysis Package, or WRAP, related specifically to simulations using daily time steps.

"The course will focus on the daily-time step simulations with WRAP and will include computer modeling exercises," Hoffpauir said. "The course will cover WRAP topics of an intermediate to advanced level. Course participants are expected to have proficiency with the monthly time-step features of WRAP."

He said the course is designed for engineers and scientists employed by water agencies and consulting firms. Hoffpauir said participants will gain a thorough understanding of the modeling system features that are pertinent to building daily time step input data, selecting simulation parameters and analyzing simulation output.

Continuing Education Units (CEUs) will be awarded for completion of the course. For more information or to register, visit watereducation.tamu.edu.

2012 Land Grant and Sea Grant National Water Conference to be held May 20–24 in Portland

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The U.S. Department of Agriculture – National Institute of Food and Agriculture is hosting the 2012 National Water Conference: Land and Sea Grant Initiatives for a Changing World on **May 20–24** in Portland, Ore.

The conference agenda includes various workshops coordinated by water professionals across the nation who will discuss watershed education and outreach, watershed planning, climate change, stormwater management and more.

Dr. Kevin Wagner, associate director of the Texas Water Resources Institute and the Texas A&M Institute of Renewable Natural Resources, and **Dr. Terry Gentry**, assistant professor in the Department of Soil and Crop Sciences at Texas A&M University, are hosting a Bacterial Detection and Tracking workshop.

"Exceedance of bacterial water quality criteria designed to protect recreation is the most common water quality issue in the United States," Wagner said. "However, identifying the source of the bacteria has proven challenging in many cases. Bacterial source tracking (BST) can help."

Gentry explained that BST is a valuable tool for identifying human and animal sources of fecal pollution. "The state of BST science, methodologies and applications has evolved greatly in the past few years," Gentry said. "A host of new information is currently available, yet not readily distributed to state and federal agency personnel."

The symposium is targeted toward scientists involved or interested in the use of BST analysis; state, federal and regional agency personnel; and other interested persons.

For more information, visit the conference website.

UNT professor works to conserve the Texas quail population

The northern bobwhite quail is a valuable bird to the Texas ecosystem and an excellent indicator of healthy grasslands, according to University of North Texas Quail Director, **Dr. Kelly Reyna**.

According to a study conducted by Reyna, Texas quail hunters can spend more than $8,000 per hunter annually—money that some rural Texas economies have come to rely on. However, the northern bobwhite population seems to be in decline, which has drawn the attention of many, Reyna said.

Noticing this decline, Reyna created a program intended to help combat the limiting factors that have begun to cause population decline in the northern bobwhite quail. The program provides ranchers with an analysis of their property and regional trend information, a habitat plan and checkups that ensure proper habitat growth. These ranches create "quail co-ops," or groups of ranches that are committed to doing what is necessary to keep their valuable quail population thriving. Creating larger habitats that become wildlife corridors give quail a greater chance of survival, Reyna said.

Reyna said that a healthy quail habitat should be between 1,000 and 3,000 acres because quail tend to be healthiest in groups of 1,000 to 3,000 birds—ideally each bird inhabits one acre. A change in land use, such as a large property being sold to multiple land owners, causes habitat fragmentation. This fragmentation forces quail into much smaller groups, which endangers their well-being and bio-diversity. Reyna's quail co-ops try to prevent population decline from the inside, creating a greater chance of juvenile survival.

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To continue to increase species survival, Reyna gives quail hunters the tools they need to sustain the sport. Reyna said that hunters generally have a connection to nature and if told how to help, they will do what's needed to continue enjoying their sport. He said that this year many hunters self-regulated with many shooting quail with their camera instead of their guns. He is currently affiliated with a group of hunters that is working with the Texas Parks and Wildlife Department to adjust the current season length and bag limit associated with quail hunting to minimize the impact of hunting season on the quail species.

Read the full UNT press release.

High school students invited to State Youth Water Camp in Monahans

The 2012 State Youth Water Camp will be **July 8-12** at the Bentley 4-H Center in Monahans. The camp is open to high school students who are interested in water conservation and water issues and is co-sponsored by the Texas AgriLife Extension Service, U.S. Department of Agriculture Natural Resources Conservation Service and Upper Pecos Soil and Water Conservation District.

According to organizers, the five-day educational camp is planned to teach the importance of water stewardship, train them in water conservation and preservation and illustrate how Texas' water resources are being used by industry, agriculture and municipalities. Activities include hands-on experiences, guest speakers and field trips.

Applications and information are available at ward.agrilife.org or from any AgriLife Extension office. Applications must be received in the AgriLife Extension office in Ward County by **May 18**. Participants will be informed of their acceptance by **May 31**. Registration is $150 and is due by **June 8**. Soil and water conservation districts, ground water conservation districts and youth organizations are sources of scholarships. The water camp is open to all Texas youth, but space is limited so organizers encourage early registration. Adult project leaders may also apply but must pass a background check before participating. For more information, call the AgriLife Extension office in Ward County at 432-943-4112 or visit ward.agrilife.org.

The camp is partially funded through the Rio Grande Basin Initiative, which is administered by the Texas Water Resources Institute.

NRCS announces lesser prairie chicken wildlife conservation efforts

Private landowners and operators in the Southern Plains and Panhandle regions of Texas have an opportunity to apply for a new conservation funding source announced recently by Agriculture Secretary **Tom Vilsack** and Secretary of the Interior **Ken Salazar**, according to a recent U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) announcement.

The Working Lands for Wildlife partnership creates a $33 million partnership with farmers, ranchers and forest landowners to use innovative approaches to restore and protect the habitats for wildlife, including seven at-risk species and other vulnerable game species.

The targeted at-risk species in Texas, the lesser prairie chicken, is a ground-nesting bird native to the rangela

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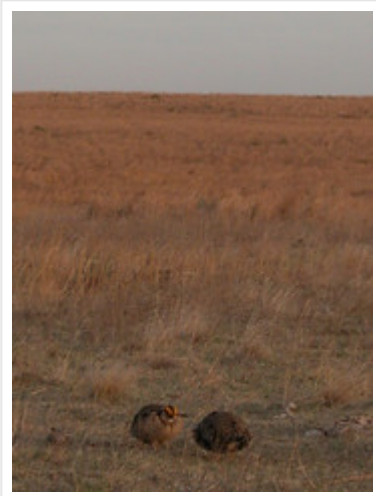

Kansas, Colorado, New Mexico, Oklahoma and Texas. Lesser prairie chicken populations declined dramatically during the past several decades due to loss of native prairie, habitat fragmentation and degradation of habitat on both private and public lands, according to the news release.

In 2011, NRCS launched the Lesser Prairie Chicken Initiative (LPCI) to focus technical and financial resources on improving lesser prairie chicken habitat. Working Lands for Wildlife will provide additional targeted funding to help farmers and ranchers enhance, restore and protect the habitat.

"The aim of the program is to focus available conservation dollars and wildlife expertise on the recovery of this at-risk species," said **Salvador Salinas**, state conservationist for the NRCS in Texas.

Through the LPCI and Working Lands for Wildlife, NRCS offers landowners up to 75 percent financial assistance for the installation of conservation practices that promote healthy grazing lands and are also beneficial for the lesser prairie chicken. These practices include prescribed grazing, upland wildlife habitat management, brush management, prescribed burning and range planting and obstruction removal.

Texas agriculture producers may sign up to manage and restore high-priority habitats for the lesser prairie chicken within the eligible Texas counties, which include: Ochiltree, Lipscomb, Roberts, Hemphill, Gray, Wheeler, Donley, Collingsworth, Deaf Smith, Parmer, Bailey, Lamb, Cochran, Hockley, Yoakum, Terry, Gaines and Oldham. Applications are available at local NRCS offices, and are due **April 30**. Applications within the priority habitat areas will receive highest consideration.

NRCS partners with local soil and water conservation districts, Texas Parks and Wildlife Department and U.S. Fish and Wildlife Service in these efforts.

For more information, read the full NRCS press release, visit the Texas NRCS website at tx.nrcs.usda.gov or contact a local NRCS office.

Riparian Workshop to be taught by NRCS staff May 5 in Cleburne

A Riparian Workshop will be held **May 5**, 8:30 a.m. - 3:30 p.m., at the United Cooperative Services, 3309 N. Main Street, in Cleburne. Sponsored by the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS), in cooperation with the Texas Master Naturalist and the Buffalo Creek Association, the workshop will cover the basic interaction of hydrology erosion and deposition, and the riparian vegetation for North Central Texas creeks and rivers.

Topics include channels, floodplains, water tables, base flow, flood flow, and sediment. Proper functioning condition (PFC) will be explained, with illustrated examples to promote understanding of what comprises the good health of a creek or river.

According to organizers, **Ricky Linex** and **Ken Mayben** from the NRCS field office in Weatherford will lead the training. Each participant will receive riparian resource materials as well as a copy ofRemarkable Riparian, published by the Nueces River Authority. The afternoon session of the workshop will be held in the field at two sites along the east branch of Buffalo Creek.

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Workshop space is limited and the registration deadline is **April 30**. The cost of the workshop is $11 per person and includes a barbeque lunch. Registration checks can be mailed to: **Carrie McLaughlin**, Texas Master Naturalist, 1160 Lakewood Circle, Alvarado, Texas 76009. Contact McLaughlinfor more information at 682.459.1684 or carrie.mclaughlin58@gmail.com. More information is also available on the Texas Master Naturalist North Texas Chapter website: ntmn.org.

Texas Sea Grant seeking public input on coastal and marine efforts

The Texas Sea Grant College Program is seeking feedback from Texans in the areas of coastal and marine research, outreach and education through an online survey, available at available texas-sea-grant.tamu.edu. The program is currently developing its strategic plan for 2014–2017. As a "thank you," five people who complete the survey will be chosen at random to win $100 gift cards, according to Texas Sea Grant.

Texas Sea Grant's mission is to improve the understanding, use and stewardship of Texas coastal and marine resources. To achieve this mission, the program develops and supports research, education and outreach programs and partnerships, and relies on the public for knowledge, advice and guidance.

The survey covers coastal community growth and development, jobs and the economy, coastal and marine education, and coastal health, safety and beauty.

Based on the Land Grant concept, Texas Sea Grant is a partnership that unites the resources of the federal government, the State of Texas, universities across the state and marine-related industries to create knowledge, tools, products and services that benefit the economy, the environment and the citizens of Texas. Based at Texas A&M University in College Station, Texas Sea Grant is a non-academic research center in the College of Geosciences. It is also one of 32 university-based Sea Grant Programs around the country that are part of the National Sea Grant Network. The National Sea Grant Program is administered through the National Oceanic and Atmospheric Administration.

Texas AgriLife Research and Texas A&M investigate green roofs

Could green roofs help solve urban energy issues? Texas AgriLife Research horticulturist **Dr. Astrid Volder** thinks so. With Texas AgriLife Extension Service agents and Master Gardeners, a team of researchers and a commercial building company in Houston, Volder is studying the viability of green roofs.

"These green roofs actually will help mitigate problems in the urban areas like what people call having an urban heat island," Vodler said. "Urban areas are usually a lot hotter than rural areas, so having plants on your roof will actually facilitate cooling."

In the United States, the green roof industry grew by 28.5 percent in 2010, up from the 16-percent growth recorded in 2009, according to the annual survey by Green Roofs for Healthy Cities, a nonprofit network of public and private entities that promote research and implementation of such systems in North America.

"We're thinking that green roofs could be really, really good for Texas because of the insulating properties of t[illegible] could cool buildings," Volder said. "That could be wonderful in the summer for Texas buildings to provide add[illegible]

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and reduce energy usage."

But there's a challenge.

"The problem with Texas is finding plant species that can survive in such a harsh environment," the horticulture researcher said. "A plant growing on a roof is going to receive a lot of solar radiation, very high light conditions and not a lot of rain. And the plant is growing in maybe 4 inches of soil on the extensive-type green roof.

"My part is to look at what plants may work on top of a green roof and also how some of these plants contribute to some of the properties of the green roof," she added.

Texas A&M students are also pitching in to research the possibilities of green roofs.

Next fall, students from a variety of academic programs will begin collaborating on an interdisciplinary, three-year project to install and monitor a green roof and a living wall atop a campus building. This is an initiative aimed at preparing students to become leaders in energy conservation and resource management, said **Dr. Bruce Dvorak**, an assistant professor of landscape architecture who is spearheading the effort.

The project is funded by a $100,000 Texas A&M reallocation grant for enhancing students' preparation for the workplace and society through high-impact learning experiences.

"A living wall, said Dvorak, "is a vegetated wall designed to achieve benefits similar to green roofs, but much less is known about its performance."

Though alternative campus sites for the rooftop project are currently under consideration, once under way, Dvorak said, the effort will engage up to 1,000 students in three colleges from at least seven undergraduate programs, including architecture, construction science, environmental geosciences, environmental studies, landscape architecture, horticulture and meteorology.

The project will add to the findings from green roof research Dvorak began in 2009 atop the Langford Architecture Center.

For more information, read the original TAMU press release on green roofs, read about Volder's green roof research, watch Volder discuss her research and read more about Texas A&M's green roof project.

New Projects

The Texas Water Resources Institute and Texas A&M Institute of Renewable Natural Resources recently acquired funding for the following new projects:

Adaptable Wide State Seedbed System Combining Precision Fertilizer Placement, Conservation Irrigation Management with Reduced Tillage Practices for Long-Term Farm Sustainability
The goal of this project is to improve the sustainability of current high-yield, furrow-irrigated, narrow-row farming through the use of an easily adaptable crop practice. The project will research and inform farmers of a cultural practice alternative that should maintain current yields conserve soil moisture use less irrigation water, save nutrients, improve soil health, which in turn will decrease total inputs and reduce nonpoint source pollution runoff.
Principal Collaborators: Texas Water Resources Institute, Texas AgriLife Research and Extension Center at Weslaco
Funding Agency: USDA Southern Sustainable Agriculture Research and Education (SARE) program

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Developing a General Conservation Plan for the Golden-cheeked Warbler and Black-capped Vireo in Central Texas

Fragmentation and loss of breeding habitat continue to be the primary threats to for the federally endangered golden-cheeked warbler and black-capped vireo. Regional Habitat Conservation Plans (RHCP) have been created in several counties to facilitate economic development while addressing conservation of endangered species, including the warbler and vireo, but these efforts address only a small portion of the species' breeding ranges. We are working to develop a General Conservation Plan (GCP) to provide a comprehensive approach to facilitating planning for conservation, management, and economic development at the scale and pace of planning.

Principal Collaborators: Texas A&M Institute of Renewable Natural Resources, Texas AgriLife Extension Service, Environmental Defense Fund, Interagency Task Force on Economic Growth and Endangered Species, Texas Comptroller of Public Accounts, Texas Parks and Wildlife Department, and Texas Watershed Management Foundation

Funding Agency: U.S. Fish and Wildlife Service

Analysis of Water Use and Water Consumption of Texas Power Plants

The Electric Power Research Institute has developed significant information on water conservation technologies for power plants, including costs, performance and impacts under a wide variety of site characteristics. The purpose of this study is to apply these results to the Texas generation fleet, and to consider the unique resource limitations, Texas climate variations and regulatory constraints that Texas power generation providers must adhere to for water withdrawals and water consumption. The study will meet the need for a stable dataset that outlines water use, water consumption and water conservation within the power generation sector and provide rigorous analysis of the water conservation options that are economically viable.

Principal Collaborators: Texas Water Resources Institute, Texas AgriLife Research, Texas Center for Applied Technologies

Funding Agency: Electric Power Research Institute (EPRI)

New Publications/ Papers

TWRI and IRNR publications

Arroyo Colorado: A Compilation and Evaluation of Prior Studies and Data, Cecilia Wagner, Texas Water Resources Institute, TR-421, 2012

Extension publications

Managing Crop Nutrients Through Soil, Manure and Effluent Testing, Mark L. McFarland, Tony Provin, Sam E. Feagley, Texas AgriLife Extension Service, E-536 (revision), 2012

Wildlife Services, Texas AgriLife Extension Service, L-1915, 2012

Feral Hog Laws and Regulations, Jared Timmons, James Cathey, Nikkoal Dictson, Mark L. McFarland, Texas AgriLife Extension Service, ESP-420 (revision), 2012

Managing Feral Hog Damage, Texas Wildlife Services, Texas AgriLife Extension Service, L-1925, 2012

Peer-Reviewed publications

A Novel Songbird Nest Predator: The Greater Arid-land Katydid, K.N. Smith, J.W. Cain, M.L. Morrison, R.N. Wilkins

Estimating breeding season abundance of golden-cheeked warblers in Texas, H. A. Mathewson, J. E. Groce, T. M. McFarland, M. L. Morrison, J.C. Newnam, R. T. Snelgrove, B. A. Collier, R. N. Wilkins

Predicting patch occupancy in fragmented landscapes at the rangewide scale for an endangered species: an example of an American warbler, B. A. Collier, J. E. Groce, M. L. Morrison, J. C. Newnam, A. J. Campomizzi, S. L. Farrell, H. A. Mathewson, R. T. [illegible] Carroll, R. N. Wilkins

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Utilization of a species occupancy model for management and conservation, T. M. McFarland, H. A. Mathewson, J. Groce, M. L. Morrison, C. Newnam, T. Snelgrove, K. Skow, B. Collier, R. N. Wilkins

Win-stay, lose-switch and public information strategies for patch fidelity of songbirds with rare extra-pair paternity, A. J. Campomizzi, M. L. Morrison, J. A. DeWoody, S. L. Farrell, and R. N. Wilkins

TWRI and IRNR Training Courses

SWAT for Beginners	May 21–22
Bacterial Detection and Tracking Symposium	May 22
Advanced Data Processing for ArcSWAT	May 23
SWAT for Advanced Users	May 24–25

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