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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

From the director: What we're all about

At the Texas A&M Institute of Renewable Natural Resources (IRNR) and the Texas Water Resources Institute (TWRI), we share a complementary mission: land and water conservation. We also share resources, multiple locations and the expertise of more than 50 full-time professionals and support staff.

We believe that the role of institutes in the Texas A&M University System is to advance the interdisciplinary approaches required to effectively address the complex natural resource challenges facing the world today. We bring together faculty, research scientists, county agents, agency partners and students, and we work holistically, combining sound and timely research, effective policies and appropriate outreach. Working together, we are able to accomplish what a single researcher or department could not do alone.

As we continue forward with these missions, we appreciate your support and are happy to share with you our 2012–2013 Annual Reports for both TWRI and IRNR. These materials are available at twri.tamu.edu/about and irnr.tamu.edu/about.

Watershed planning short course Nov. 4-8 in Bandera

The Texas Water Resources Institute (TWRI) is presenting this year's Texas Watershed Planning Short Course **Nov. 4-8** in Bandera.

The five-day course will be held at the Mayan Dude Ranch, 350 Mayan Ranch Road, about 47 miles northwest of San Antonio.

"Watershed protection plans and the stakeholder-driven watershed planning process instilled through the course have become the foundation for water quality improvement efforts in Texas," said **Dr. Kevin Wagner**, TWRI associate director and course leader.

Wagner said this course is one of the few in the country that builds upon the nine essential elements for watershed planning identified by the U.S. Environmental Protection Agency.

"Practitioners developing both watershed protection plans and total maximum daily load, or TMDL, implementation plans have participated in the course and are now using the techniques they learned during the course to address water quality issues statewide," he said.

In addition to EPA's nine elements, the course provides watershed coordinators and water resource professionals with guidance on stakeholder coordination, education and outreach; data collection and analysis; and the tools available for plan development.

“This information is presented through lectures and case studies,” said **Nikki Dictson**, AgriLife Extension program specialist for TWRI.

Wagner added that approximately 30 watershed planning efforts and almost a dozen more total maximum daily load implementation plans have benefited from the training. The plans have been financed by the Texas State Soil and Water Conservation Board and Texas Commission on Environmental Quality, the two state agencies responsible for Texas water quality.

Course registration is $375 and is open until **Oct. 30**.

Additionally, a block of rooms at the Mayan Dude Ranch has been reserved at a special rate of $121 per night, which includes lodging plus all meals, but reservations must be made by **Oct. 30** to receive this special rate. Participants are asked to identify themselves as short course attendees when making reservations.

The upcoming short course is the seventh such program to be held. The course is funded by the Texas Commission on Environmental Quality and the EPA.

For more information on the course, registration and lodging arrangements, go to watershedplanning.tamu.edu or contact Dictson at n-dictson@tamu.edu.

Get the latest information on Proposition 6

Texans will soon vote on nine proposed amendments to the Texas Constitution. Proposition 6 would establish a water implementation fund and if approved, the legislature has also authorized a one-time, $2 billion appropriation from the economic stabilization fund into the new fund to support the water supply projects detailed in the state water plan.

The Texas Water Development Board is the state agency tasked with developing the state water plan, and it has provided voters with FAQs on Proposition 6.

Another easy way to stay informed about Proposition 6 is to follow the ScoopIt page, Funding Texas Water, where the Texas Water Resources Institute posts relevant articles. **Dr. Calvin Finch**, director of the Water Conservation and Technology Center, also recently wrote about the proposition.

Early voting ends **Nov. 1** and election day is **Nov. 5**.

Learn social media basics at November training in San Angelo

How can natural resources professionals use social media to provide education? Find out at “Social Media 101 — Raising Stakeholder Awareness in an Information Age” training **Nov. 6** at the Texas A&M AgriLife Research and Extension Center, 7887 U.S. Highway 87 North, in San Angelo.

Hosted by the Texas A&M Institute of Renewable Natural Resources (IRNR), the training will be 9 a.m–3 p.m., with registration at 8:30 a.m. It will cover the basics of social media and its effective use in online communications.

“If you are in the role of outreach and information dissemination, you have a challenging mediascape to conquer,” said **Amy Hays**, IRNR program specialist and workshop trainer. “That challenge is finding a way to be heard against a tide of competing voices.”

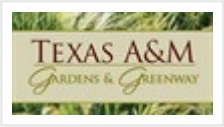
This training is designed to help those serving as advocates of natural resources and in positions of distributing information, such as coordinators and communications personnel in organizations, governments and other entities. Participants will learn how to incorporate social media as an outreach tool, learn creative ways to reach new audiences and how to use new and old social media tools, Hays said.

She said people need to ask themselves, 'How will people find our information first, and is that information valuable and reliable?'"

The training registration fee is $50 through **Nov. 1** and $60 after that date. The fee also includes lunch. Registration is available online at agriliferegister.tamu.edu.

The workshop is sponsored by the Sutton County Underground Water Conservation District. For more information about the event, contact Hays at 254.865.2061 or ahays@ag.tamu.edu. Information on other training programs coordinated by IRNR and the Texas Water Resources Institute is online at naturalresourcestraining.tamu.edu.

Gardens and Greenway project set for West campus is accepting donations



A portion of Texas A&M University's West campus is being transformed into a garden and greenway for students, faculty and visitors and will serve as an outdoor classroom for many academic disciplines.

The vision of Vice Chancellor and Dean **Dr. Mark Hussey**, the "Gardens and Greenway" project encompasses approximately 45 acres north of Kimbrough Boulevard behind the Texas A&M AgriLife Complex.

Private donors will fund 100 percent of its construction and maintenance, organizers said, and donations can be made online.

Texas A&M System's Board of Regents designated White Creek on the West campus and the surrounding riparian area as the West Campus Greenway in 1998. While the entire West Campus Greenway extends from the Horticultural/Forestry Sciences Building to the Bush Library property, the portion of the West Campus Greenway south of Kimbrough Boulevard is not currently included in the project.

The project was developed by **Dr. Jon Rodiek**, professor and coordinator of Texas's landscape architecture and urban planning program, and landscape architecture graduate students with input from faculty and students. **Dr. Doug Welsh**, a veteran horticulturist and Texas A&M professor emeritus, is the program coordinator for the project.

The Gardens and Greenway project will feature:

- The Grove Amphitheater
- Teaching gardens, schoolhouse and pavilion
- White creek restoration
- Post oak savannah restoration and wildflower meadows
- Rose garden and arbor
- Feed the World Plaza
- Outdoor living room for students
- Howdy Station visitor bus stop
- Coffee station and visitor entrance

Besides an outdoor classroom and leisure area, the greenway and gardens will serve as an outdoor entertainment venue for the performing arts, films, celebrations and social events, organizers said. The project will also preserve the natural creek habitat, which is critical to sustaining native flora and fauna, including nearly 50 bird species. The agricultural heritage and culture of Texas and Texas A&M will also be highlighted.

For more information on the project and ways to give, visit agrilife.org/texas-am-gardens-and-greenway-project.

South Texas soil testing campaign to run through February

For the next four months, growers in the Lower Rio Grande Valley can save money while helping the environment by taking advantage of a free soil testing campaign.

“Agricultural producers from Hidalgo, Cameron and Willacy counties are encouraged to submit soil samples for a free analysis to help them determine the amount of nutrients in their soils,” said **Ashley Gregory**, Texas A&M AgriLife Extension Service assistant for water programs in Weslaco.

Proper nutrient amounts and placement help in the reduction of nonpoint source pollution into the Arroyo Colorado and the Lower Laguna Madre, both important waterways in the Lower Rio Grande Valley, she said.

“By knowing how much fertilizer is already in the soil, many growers have been able to cut down on the fertilizer they apply. That can amount to a huge cost savings, especially with rising fertilizer prices,” she said.

The soil testing campaign began **Oct. 1** and will continue through **Feb. 28**. It is made possible by funding from a Clean Water Act grant provided the Texas State Soil and Water Conservation Board and the U.S. Environmental Protection Agency. It is administered through the Texas Water Resources Institute and the Arroyo Colorado Watershed Partnership.

The partnership consists of 700 people, representing federal, state and private organizations working to improve watershed health, integrate management and seek out watershed project funding.

Soil sample forms and sample bags can be picked up at AgriLife Extension offices in Hidalgo, Cameron and Willacy counties, or at the Texas A&M AgriLife Research and Extension Center, 2401 E. Highway 83 in Weslaco.

Conducted every year since 2001, the soil testing program has been very successful in helping growers know exactly how much residual fertilizer is already in the ground, Gregory said. More than 5,000 soil samples have been collected since the program started.

“Growers can return their soil samples to any of our offices for shipping to the Texas A&M Soil Testing Laboratory in College Station. The analysis is free and results are mailed directly to the grower,” she said.

For more information about the Arroyo Colorado watershed, visit arroyocolorado.org. For more information about the soil testing program, contact Gregory at 956-968-5581 or ahgregory@ag.tamu.edu.

Read full article at AgriLife TODAY, and watch an informative YouTube video on the soil testing program.

Free recap of Trinity Summit available

If you missed the Trinity River Land and Water Summit on **Oct. 2** in Athens, it’s not too late to catch a summary of the speakers, summit officials say. **Blake Alldredge**, Texas A&M AgriLife Extension Service associate in College Station, said a

complete summary of the summit along with the day's presentations are posted at trinitywaters.org/about-us.

The summit was conducted by AgriLife Extension and Trinity Waters with the goal of working with landowners and other stakeholders in the middle Trinity River basin to prioritize watersheds for future planning efforts and to develop monitoring strategies in those watersheds, Alldredge said.

"We had a great turnout and some truly outstanding presentations," he said. "**Bob McCan**, president-elect of the National Cattlemen's Beef Association of Victoria, and **Todd Staples**, Texas Agriculture Commissioner, were our keynote speakers.

"Both McCan and Staples said that private land stewardship results in greater land productivity and sustainability for landowners," Alldredge said. "They emphasised that such efforts can benefit the 45 percent of all Texans who depend on the Trinity River to meet their water needs. And an interactive presentation indicated that the vast majority of attendees was in agreement with them and saw the need for more watershed and water quality management education."

This summit was held as part of the Building Partnerships for Cooperative Conservation in the Trinity River Basin project, managed by the Texas Water Resources Institute and funded by the Texas State Soil and Water Conservation Board, through a Clean Water Act grant from the U.S. Environmental Protection Agency.

Check out the event recap at trinitywaters.org/about-us, and learn more from the full AgriLife TODAY news release.

Have a pond? Try these new apps from AgriLife Extension

The Texas A&M AgriLife Extension Service's Wildlife and Fisheries unit recently received a grant from the Renewable Resources Extension Act to produce several mobile phone and device applications (apps) for pond and fish management. Landowners can have instant access to valuable management tools, with the unit's first five apps now available for download:

- AquaPlant is designed to help pond owners and their advisors in the identification and management of aquatic vegetation. After identification of the aquatic plant is achieved with the visual index and description pages of AquaPlant, the user can then use the management section for each species to learn the correct treatment options including biological, mechanical and herbicide controls.
- AquaRef is an aquaculture and pond manager quick reference guide with an inclusive set of tables and conversion factors for aquaculture professionals. This guide includes pond filling time, pumping rate equivalents, discharge rates from standpipes, net mesh sizes for grading fish, length/weight relationships for fish, oxygen saturation points, pounds of fish that can be hauled at temperature, egg development stages, stocking guides, fertilization rates, and much more.
- PondCalc is a comprehensive tool for recreational pond users as well as aquaculture producers. This tool allows the user to quickly and easily calculate the surface area of any shaped pond and then calculate the number of acre-feet, all without having to do any math. These calculations allow the user to determine accurate pond area and volume for the application of chemical treatments and herbicides.
- AquaCide is an aquatic herbicide selection, effectiveness and restriction guide, a tool for recreational pond managers as well as aquaculture professionals. This comprehensive visual guide helps you select the most effective herbicides for all aquatic vegetation classes, including the most common North American algae and floating, submerged and emergent aquatic vegetation. Only herbicides that provide good or excellent control are provided for each species.

- AmmoniaCalc is an un-ionized ammonia calculator, useful for on-the-go aquaculture producers and managers, as well as home aquarium hobbyists. AmmoniaCalc allows the user to input simple, easily measured water chemistry measurements such as pH and temperature to instantly calculate the un-ionized ammonia concentration.

Future apps developed by the unit will include a stocking rate calculator for livestock on grazing lands and feral hog control options. For more information, visit wildlife.tamu.edu/mobile-apps.

Texas A&M creates Texas-size genomic grant program

Intending to empower the next generation of cutting-edge genomics research, members of The Texas A&M University System have contributed monies to create the largest internally funded genomics research grant program of its kind, officials said.

The funds, totaling $1.26 million, come from Texas A&M University and its College of Agriculture and Life Sciences, Dwight Look College of Engineering, Division of Research, Whole Systems Genomics Initiative and Texas A&M Health Science Center, along with the A&M System's Texas A&M AgriLife Research and Texas A&M Engineering Experiment Station.

"This is truly an exciting period at Texas A&M. We are bringing together world-class scientists from across the system to explore the very foundations of life and solve some of the greatest challenges facing mankind, from human health to world hunger. This program serves a unique role for our scientists, providing those all-important funds to grow our genomics and bioinformatics research programs," said A&M System chancellor **John Sharp**.

"Joint efforts such as this pave the way for basic and applied research discoveries that will benefit all of humankind."

Grants from the fund will target the generation of preliminary data, building collaborative teams and/or training programs in genomics and bioinformatics, according to **Dr. Charles D. Johnson**, director of Genomics and Bioinformatics Services for AgriLife Research, and associate director of the A&M System's Center for Bioinformatics and Genomic Systems Engineering.

The program will include a suite of four subcategories of grants. Each category focuses on a specific funding need: Texas A&M Genomics Seed Grant through the AgriLife Genomics and Bioinformatics Service, Genomics Technology Seed Grant through the Engineering Experiment Station and Look College, Whole Systems Genomics Initiative Catalyst Grant, and Genomics of Plant Water Use Grant.

Details and request for proposals for the individual grant programs and eligibility requirements will be announced in the coming weeks.

Read the full article at AgriLife TODAY for more information.

Free Texas Watershed Steward workshops coming to the Houston area

Two free Texas Watershed Steward (TWS) workshops on water quality and availability issues in the Greater Houston Area will be held from 8 a.m. to 4 p.m. on **Nov. 5–6**.

The workshops are sponsored by the Texas A&M AgriLife Extension Service and the Texas State Soil and Water Conservation Board (TSSWCB) in coordination with the Houston-Galveston Area Council (H-GAC).

The **Nov. 5** workshop will be at the Houston Museum of Natural Science, 13016 University Blvd., Sugar Land. The **Nov. 6** workshop will be at the Spring Creek Greenway Nature Center, 1300 Riley Fuzzell Road, Spring.

Seating is limited, so attendees are encouraged to preregister at on the TWS website.

“The workshops are designed to help watershed residents improve and protect their water resources by becoming involved in local watershed protection and management activities,” said **Dr. Allen Malone**, AgriLife Extension agent for Harris County.

Malone said the workshops will include an overview of water quality and watershed management, and primarily focus on water quality issues in the Greater Houston Area, including current efforts to help improve and protect the health of important area water sources.

“Surface water in the Houston area is a critical resource for the area’s residents, economy and environment,” said **Justin Bower**, with the H-GAC’s community and environmental planning department.

The council oversees several programs aimed at characterizing and reducing pollution in Houston waterways, Bower said. It works in cooperation with local stakeholders, as well as local, state and federal governments.

“Along with the free training, participants receive a free copy of the Texas Watershed Steward Handbook and a certificate of completion,” said **Galen Roberts**, with AgriLife Extension and TWS program.

The program also offers seven continuing education units in soil and water management for certified crop advisors, seven units for professional engineers and certified planners, and seven continuing education credits for certified teachers. It also offers three general continuing education units for Texas Department of Agriculture pesticide license holders, seven for certified landscape architects and three for certified floodplain managers.

For more information, contact Roberts at 979.862.8070 or groberts@ag.tamu.edu. For more information on the H-GAC’s water resources programs, call 713.499.6653 or visit its website. The TWS program is funded through a Clean Water Act nonpoint source grant from the TSSWCB and U.S. Environmental Protection Agency.

Read the complete AgriLife TODAY article for more information.

Whooping cranes beginning fall journey to Texas

Endangered whooping cranes have begun their annual 2,400-mile fall migration from Canada to Texas. As the rare birds approach the Lone State, a citizen science initiative is inviting Texas residents and visitors to report “whooper” sightings.

Texas Whooper Watch is a volunteer monitoring program that is a part of Texas Parks and Wildlife Department (TPWD) Texas Nature Trackers program. The program was developed to help the agency learn more about whooping cranes and their winter habitats in Texas.

According to TPWD, since beginning the cranes’ slow recovery from a low of 16 birds in the 1940s, the birds have wintered on the Texas coast on and near Aransas National Wildlife Refuge. Recently though, several groups of whooping cranes expanded their wintering areas to include other coastal areas and some inland sites in Central Texas. This year, some of the whooping cranes from an experimental flock in Louisiana spent most of the summer months in Texas, and Whooper

Watch volunteers were able to provide valuable information to TPWD, Louisiana Game and Fish and the U. S. Fish and Wildlife Service about the birds.

This year biologists expect whooping cranes to start arriving in Texas in late October or early November. Texas Whooper Watch will also help improve the accuracy of surveys on the wintering grounds. The birds usually follow a migratory path through North and Central Texas that includes cities such as Wichita Falls, Fort Worth, Waco, Austin and Victoria. During migration they often pause overnight to use wetlands for roosting and agricultural fields for feeding, but seldom remain more than one night.

Citizens can help by reporting sightings of whooping cranes and by preventing disturbance of cranes when they remain overnight at roosting and feeding locations, according to TPWD. Sightings can be reported to whoopingcranes@tpwd.texas.gov or 512.389.TXWW (8999). TPWD asks observers especially to note whether the cranes have colored leg bands on their legs. Additional information, including photos of whooping crane look-alike species, can be found at tpwd.texas.gov/whoopingcranes and whoopingcrane.com/report-a-sighting .

Read the full TPWD news release for more information on the birds and how to volunteer with the watch.

Study evaluates exposure, adaptation to how climate change affects North American rangelands

A group of eight U.S. scientists, including Texas A&M University's **Dr. David Briske** and **Dr. Bruce McCarl**, recently published two assessments that identify trends and projections for climate change effects on rangeland and evaluate adaptation strategies.

"These papers offer an objective, comprehensive assessment of climate trends and contingency planning as it relates to North American rangelands," said Briske, a professor in the Department of Ecosystem and Science Management at Texas A&M.

Changes in mean climatic trend and increased variability will affect the ability of rangelands to provide ecosystem services and support human livelihoods, but in varied and geographically specific ways, Briske said.

Climate models project that the U.S. Southwest and Southern Plains will become warmer and drier, the Northwest will become warmer and drier during summer and experience less snowpack in winter and the northern United States and southern Canada will become warmer and wetter.

"Such developments will affect rangeland enterprises and productivity," said McCarl, a Texas A&M AgriLife Research economist.

The interacting effects of atmospheric warming, increased carbon dioxide concentrations and modified precipitation patterns will modify fire regimes, soil carbon content, and forage quantity and quality, according to the scientists. This will, in turn, affect livestock production, plant community composition, and the distribution of plant, animals and diseases.

Human actions to minimize negative impacts and to capture potential opportunities need to be geographically specific to effectively contend with these varied consequences, according to the authors. The study authors also indicate that specific actions to increase carbon sequestration are not an economically viable mitigation strategy because carbon uptake is limited by low and variable precipitation.

However, they concluded, numerous adaptation strategies, including changing perceptions of risk, greater flexibility in production systems and policy changes to emphasize climatic variability rather than consistency will prove highly valuable.

Livestock production systems also will need to adjust because of changing environmental conditions, according to the scientists. Some of the adaptations specific to livestock production may include flexible herd management, alternative livestock breeds or species, innovative pest management, modified enterprise structures and, in extreme cases, relocation. Increasing awareness of and preparedness for changing climatic trends and increasing climatic variability will promote both the supply of ecosystem services and the maintenance of human livelihoods in future climates.

The articles, “Climate Change and North American Rangelands: Trends, Projections, and Implications” and “Climate Change and North American Rangelands: Assessment of Mitigation and Adaptation Strategies” appear in *Rangeland Ecology and Management*, Vol. 66, No. 5, 2013.

Read the AgriLife TODAY article for more information.

New Publications / Papers

New TWRI and IRNR publications

Development of a Synergistic, Comprehensive Statewide Lone Star Healthy Streams Program, **K. Wagner,L. Redmon, J. Peterson**, TR-446, 2013.

Estimating On-site Sewage Facility Density and Distribution Using Geo-Spatial Analyses, **L. Gregory, B. Blumenthal, K. Wagner, K. Borel, R. Karthikeyan**, Journal of Natural & Environmental Sciences 2013 4(1): 14-21.

Natural Resources Training Courses

Texas Watershed Planning Short Course	Nov. 4–8
Social Media 101-Raising Stakeholder Awareness in an Information Age	Nov. 6