

April Conservation Matters

Position announcement: TWRI director

The search is underway for a director of the Texas Water Resources Institute (TWRI). The position vacancy is posted on the Texas A&M AgriLife [Great Jobs website](#).

This position will lead the Texas Water Resources Institute (twri.tamu.edu) which focuses on water-related applications, including water quality, supply, and water use in Texas, the U.S., and internationally. The director will provide intellectual, philosophical, and strategic leadership to system faculty, and the institute's scientists, staff, and students to meet teaching, research, and extension missions. The director will be responsible for developing optimum tactical and strategic responses to water-related issues and opportunities and will manage the human and fiscal resources, including leading a contract and grants program that elevates water-related efforts throughout the Texas A&M University System.

This position requires a Ph.D. and fifteen years of relevant post-Ph.D. experience with a documented record of distinction in teaching, research, and/or extension, along with experience leading and managing interdisciplinary water-related programs and teams. Preference will be given to candidates with a Ph.D. in water-related science, engineering, policy or management and who are recognized experts in the field.

Visit the [Great Jobs posting](#) for more details.

Dr. Roel Lopez is currently TWRI interim director as well as director of the Texas A&M Institute of Renewable Natural Resources and will continue in the later role following the hiring of a new TWRI director. The institutes will continue to work together and share staff and services.

10 simple ways to celebrate Earth Day in Texas

By Leslie Lee



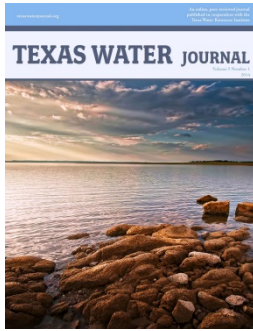
Tomorrow, **April 22**, is Earth Day, and if it snuck up on you this year, we've got you covered. Pick from these ten simple ways to commemorate Earth Day, and learn how you can help conserve land, water and wildlife in Texas.

1. Take the [40 Gallon Challenge](#), pledge to conserve water and take action to change your water habits.
2. Attend the [Texas Water Journal forum April 22](#) in Austin and hear from water experts.
3. Use this [Water Conservation Checklist for the Home](#), provided by the Texas A&M AgriLife Extension Service.
4. [Subscribe](#) to [txH₂O](#) magazine to stay up-to-date on Texas water research and news.
5. Visit the [Trinity Waters Landowner Library](#) and learn how to manage your land for water and wildlife conservation.
6. Read about AgriLife Extension's [Reversing the Quail Decline Initiative](#) and how you can help conserve quail habitat.
7. Schedule a tour of the [WaterSense-labeled home](#) at the Texas A&M AgriLife Research and Extension Center in Dallas.
8. Visit [Texas Land Trends](#) and learn how land fragmentation is affecting the state.
9. Learn about the impact of your daily [water footprint](#).
10. Follow these [seven tips](#) for saving water in your home.

Reminder: Participate in survey and get free downloads

[Ross, please just use the same text and graphics from the last CM Survey reminder email, minus the "Please disregard..." and "Thank you..." lines, and with this above headline instead.]

Texas Water Journal hosting forum April 22 in Austin



The [Texas Water Journal](#), an online, peer-reviewed journal on Texas water issues, will celebrate Earth Day with their second Texas Water Journal Forum on water conservation **April 22** in Austin. The journal is published jointly with the Texas Water Resources Institute (TWRI).

The free forum will be from 6-7:30 p.m. in Room JBG 2.218 of Jackson Geological Sciences Building at the University of Texas. The university's Campus Environmental Center, a student organization, is coordinating the forum and the university's Environmental Science Institute is helping sponsor the event.

The forum will provide discussions from water conservation scientists and experts on current water conservation issues, said **Dr. Todd Votteler**, editor in chief of the journal and executive manager of science, intergovernmental relations and policy for the Guadalupe-Blanco River Authority.

"This second forum will focus on the current challenges to rural and urban water conservation, the role of the new State Water Implementation Fund for Texas and the role of science in informing water resources policy," said Votteler, who is moderating the panel. "We will also discuss Texas hydrology as it relates to water conservation."

Forum panelists include **Ken Kramer**, volunteer water resources chair and legislative advisor for the Lone Star Chapter of the Sierra Club; **Nora Mullarkey**, water contracts and conservation manager at the Lower Colorado River Authority; **Dr. Kevin Wagner**, TWRI associate director; and **Raymond Slade**, a certified professional hydrologist.

"The topic of water conservation is a very important one for our State and its future," Wagner said. "Water conservation is one of the most effective tools we have in the water toolbox to address the ongoing drought and the shrinking available water supplies in Texas."

A question-and-answer session will follow the panel discussion.

"We invite the interested public to join the panel as we explore the complexity and challenges in providing water for Texans in this century," Votteler said.

For more information, contact Votteler at thvotteler@gmail.com. To read the journal, go to texaswaterjournal.org.

Range and Wildlife Management Field Day set for May 6 in Coryell County

The Texas A&M AgriLife Extension Service is hosting a multi-county Range and Wildlife Management Field Day **May 6** in Coryell County for landowners interested in managing both wildlife and livestock on their ranches.

The multi-county Field Day is from 8 a.m.-1 p.m. at the Harman School Community Center, located about four miles off of Farm-to-Market Road 580 on Harmon Road. The program is free and includes lunch. After lunch, attendees will travel to the Hannah Ranch for rangeland demonstrations.

"Many landowners in Texas are beginning to see the value in managing for wildlife on their ranch," said **Brian Hays**, associate director of the Texas A&M Institute of Renewable Natural Resources (IRNR) and a speaker at the program. "Landowners interested in managing for wildlife can take advantage of various incentive programs to diversify their income through good land stewardship for livestock and wildlife."

Pasquale Swaner, AgriLife Extension agent for Coryell County, said various AgriLife Extension staff will discuss quail and turkey biology and management, feral hog biology and abatement, and rangeland evaluation during the morning session. A Texas Parks and Wildlife Department expert will speak on wildlife management planning and Proposition 11, which allows landowners to retain their agricultural property tax valuation for wildlife management. A U.S. Department of Agriculture Natural Resources Conservation Service expert will discuss proper brush management techniques such as dozing, prescribed fire and herbicide application.

"A particular focus will be given to quail because of their popularity as a game species, the extreme decline they've seen recently and the fact that habitat that produces quail also supports scores of other wildlife species in the rangelands of Texas," said **Mike Marshall**, AgriLife Extension associate for IRNR. "We will also focus on feral hog abatement, as hogs have detrimental impacts on the wildlife landowners manage for."

At the Hannah Ranch, attendees will observe demonstrations on calculating stocking rates, plant identification, habitat assessment and feral hog trapping.

Swaner said three Texas Department of Agriculture continuing education units will be offered.

Lunch will be provided by Coryell County from a Texas Department of Agriculture County Hog Abatement Matching Program, or CHAMP, grant. To register for the field day, contact AgriLife Extension offices in Coryell County at 254-865-2414, Hamilton County at 254-386-3514 or Lampasas County at 512-556-8271 by **May 2**.

Soil and Water Stewardship Week is April 27-May 4

The Texas Water Resources Institute has partnered with the Association of Texas Soil and Water Conservation Districts, Texas Wildlife Association, Texas State Soil and Water Conservation Board and 23 other organizations to highlight the important connection between voluntary land stewardship and sustaining water availability as part of Soil and Water Stewardship Week, **April 27-May 4**.

This year's theme for the statewide campaign is "Land Stewardship: Providing Water for Texans."

"With this campaign, the institute, along with the other groups, hopes to bring more awareness and support to voluntary land stewardship," said **Dr. Kevin Wagner**, the institute's associate director.

"How landowners manage their resources on private lands directly impacts the water resources available for public use," Wagner said.

"Responsible and sustainable land stewardship increases the ability of open land to absorb rainfall, replenish aquifers and ensure that water drains slowly and steadily into springs, streams, rivers and lakes, reducing run-off and helping to prevent flooding," Wagner said.

Wagner said effective stewardship practices include prescribed grazing management by ranchers, the use of cover crops by farmers, wildlife habitat enhancement and the targeted removal of invasive brush species.

"Voluntary land stewardship is an efficient, cost-effective, and sustainable way to 'create' more water for homes, businesses, recreation, agriculture and wildlife," said **Johnny Ussery**, chair of the stewardship committee for the Association of Texas Soil and Water Conservation Districts.

Ussery said soil and water conservation performed in urban areas can also help supplement land stewardship efforts in rural ones.

"Urban Texans can become involved by practicing effective land stewardship at home, and in their neighborhoods, schools, and businesses," Ussery said. "Small efforts, such as using plants in our home landscaping that require little water, can add up to major water conservation when practiced by millions of people across the state."

Other partnering organizations in the public awareness campaign include Ducks Unlimited, Nature Conservancy of Texas, Texas A&M Forest Service, Texas Agricultural Land Trust, Texas Department of Agriculture, USDA Natural Resources Conservation Service, Texas Parks and Wildlife Department, Texas Coalition Grazing Lands Conservation Initiative, Texas Association of Dairymen, South Texans' Property Rights Association, Independent Cattlemen's Association of Texas and South Texas Cotton and Grain Association. The Texas Forestry Association, Texas HORSE, Texas Deer Association, Plains Cotton Growers, Inc., Texas Poultry Federation, Texas Corn Producers, Texas Wheat Producers Board and Association, Taking Care of Texas, Trinity Waters, Texas Pork Producers and Quail Coalition are also partners in the campaign.

The partners developed a white paper on land stewardship and can be [read](#) here.

IRNR hosting GIS course May 13–14

The [Texas A&M Institute of Renewable Natural Resources](#) will conduct an [Introduction to ArcGIS 10](#) training course **May 13–14** in College Station.

The course will be 8:30 a.m.–5 p.m. both days in Room 200 of the Centeq Building, 1500 Research Parkway in Texas A&M University's Research Park.

The course teaches the range of functionality of the software and the essential tools for visualizing, creating, managing and analyzing geographic data, according to **Amy Snelgrove**, a program manager for the institute and course instructor. Snelgrove has both Certified GIS Professional and Comptia Certified Technical Training certifications.

"The exercises of this hands-on course emphasize practice with ArcMap and ArcCatalog to perform common GIS tasks and workflows," Snelgrove said. "Students will learn the tools for creating and managing geographic data, displaying data on maps in different ways, and combining and analyzing data to discover patterns and relationships. By the end of the course, they will be prepared to work with the software on their own."

The course fee is \$500 and includes refreshments, course materials and a certificate of completion.

Registration is available at inr.tamu.edu/arcgis. Classes are limited to 10 participants. Snelgrove said two additional 2014 dates have been set for the course: **July 29–30** and **Oct. 8–9**. On-site training can also be scheduled by contacting her at amy-snelgrove@tamu.edu.

Watershed Planning Training Program selected as TEEA finalist



The [Texas Water Resources Institute](http://www.twr.org) was recently selected as finalist of [the Texas Environmental Excellence Award](#) in the education category for its [Texas Watershed Planning Training Program](#).

Created by the Texas Legislature in 1993, the Texas Environmental Excellence Awards honor individuals, organizations and businesses that protect the state's human and natural resources while ensuring clean air, clean water and the safe management of waste.

Presented annually by the Governor of Texas and the [Texas Commission on Environmental Quality](#) (TCEQ), the award winners and finalists will be recognized during the commission's annual awards banquet as part of its Environmental Trade Fair and Conference at the Austin Convention Center, on **May 7** in Austin.

"Our Texas Watershed Planning Program trains water professionals new to watershed planning so they can promote sustainable and proactive approaches to managing water quality," said **Dr. Kevin Wagner**, TWRI's associate director. "Along with a week-long short course, the program supports web-based resources, a listserv, biannual Watershed Coordinator Roundtables and additional water quality and modeling training courses to provide additional support and forums for continued dialogue. Together, these elements enable effective solutions to common watershed issues."

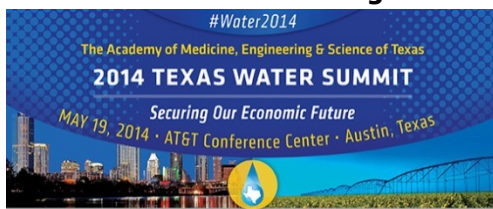
"This program has not only improved Texas watershed planning and implementation efforts, it has been a resource nationally," **Wagner** said. "Approximately 15 percent of the participants in the short course are from other states, because no other courses are available except for EPA's on-line modules."

Nikki Dictson, Texas Water Resources Institute Extension program specialist and coordinator of the program, said to-date the program has conducted seven short courses for 228 water professionals, held 10 roundtables and held 15 other watershed-related trainings. "We have had more than 1,270 attendees at the various events of this program, ensuring watershed protection efforts are adequately implemented and improving water quality restoration efforts statewide," she said.

To learn more about the program and sign up for future trainings, visit watershedplanning.tamu.edu.

The program was initially funded by TCEQ with a Clean Water Act nonpoint source grant from the Environmental Protection Agency. It is currently funded by the [Texas State Soil and Water Conservation Board](#) with a Clean Water Act grant.

Texas Water Summit coming to Austin May 19



The Academy of Medicine, Engineering and Science of Texas will host the [2014 Texas Water Summit](#) **May 19** at the AT&T Conference Center in Austin.

The program's theme is "Securing our Economic Future," and according to organizers, the summit will focus on the near-

doubling of the state's population over the next 50 years and how to meet the water needs of the economy that is expected to support that population. The event will engage key individuals in agriculture, oil and gas, the power industry and manufacturing about identifying and meeting water needs.

Featured speakers include **Elizabeth Fazio**, J.D., LL.M., committee director of the Texas House of Representatives Committee on Natural Resources, **Laura Huffman**, Texas state director for The Nature Conservancy, and **Carlos Rubinstein**, chairman of the Texas Water Development Board.

General registration is \$95 and student registration is \$50. Visit www.tamest.org/events/2014-water-summit.html for more information and to register.

Wildlife Society recognizes Texas A&M AgriLife publication, achievements



At the annual meeting of the [Texas Chapter of the Wildlife Society](#) in Austin in February, the chapter celebrated its 50th year and recognized several Texas A&M University and Texas A&M AgriLife faculty and staff with honors.

The Outstanding Technical Publication award went to **Blake Alldredge**, Texas A&M AgriLife Extension Service associate, who led the development of [Native Grassland Monitoring and Management](#). The publication was a product of the [Trinity Waters](#) program and was co-authored by **Dr. Larry Redmon**, professor and state forage specialist in Texas A&M's Department of Soil and Crop Sciences, **Dr. Megan Clayton**, assistant professor in Texas A&M's

Department of Ecosystem Science and Management and extension range specialist, and **Dr. Jim Cathey**, extension wildlife specialist and associate professor and associate department head in the Department of Wildlife and Fisheries Sciences at Texas A&M. **Dr. Dale Rollins**, professor and extension wildlife specialist, received the Outstanding Achievement award.

Arroyo Colorado fishing tournament and Stormwater Runoff Conference raise awareness



The Lower Rio Grande Valley - Texas Pollutant Discharge Elimination System (LRGV-TPDES) Stormwater Task Force hosted its 16th Annual Lower Rio Grande Valley Storm Water Runoff Management and Planning Conference **April 8-11** on South Padre Island. The conference included sessions on stormwater regulations, permitting changes, watershed protection plans, floodplain management, low impact development, nonpoint source pollution and other water

research.

The conference culminated in the Second Annual LRGV-TPDES Stormwater Task Force Fishing Tournament to benefit the [Arroyo Colorado Conservancy](#) on **April 12**. The Stormwater Task Force founded the fishing tournament last year to raise awareness about the impairments and issues facing the Arroyo Colorado, said **Jaime Flores**, Arroyo Colorado watershed coordinator. The tournament is "a great way for stormwater professionals, engineers, city officials and others to network and get to know one another while enjoying some friendly competition," Flores said.

"We had some really nice fish weigh in last year to take the top prizes," he said. "This year the tournament was no different, with some really solid fish coming in to the weigh-in."

IRNR and TWRI researchers in the news

Recent interviews with researchers from the Texas Water Resources Institute and Texas A&M Institute of Renewable Natural Resources have highlighted the impact of their work on endangered and invasive species.

In honor of World Wildlife Day, **Tiffany McFarland**, IRNR research associate, was interviewed by Rethinking Green, an eco-friendly talk show recorded live from 6 to 7 p.m. Wednesdays at the SEAD Gallery in downtown Bryan. She spoke on IRNR's Research and Management System for Endangered Species (RAMSES) program, which collects the knowledge necessary for the recovery of threatened and endangered species and informs landowners and policy makers on management practices that promote sustainable populations. Listen to her interview [here](#).

Mike Marshall, IRNR extension associate, was recently interviewed by Dr. Larry Butler, host of the show, "Out on the Land," a weekly, half-hour television series that includes video segments from a variety of farms, ranches and other lands. Marshall explained the best management practices that Bruce Berg, owner of the Rocosa Ridge Ranch in north Central Texas, has used to ensure suitable habitat for the black-capped vireo and golden-cheeked warbler on the ranch.

In a three-part video posted on YouTube, **Lucas Gregory**, TWRI project specialist, discusses the progress and remaining challenges for the Center for Invasive Species Control's project to control giant salvinia. The project uses giant salvinia-eating weevils and chemical control to try to stop the aggressive growth of the plant on Caddo Lake. Watch [Part One](#), [Part Two](#) and [Part Three](#).

Ogallala Aquifer Program receives secretary's honor award

By Katie Heinrich



The [Ogallala Aquifer Program](#) (OAP) received the U.S. Department of Agriculture (USDA) Secretary's Honor Award in December 2013. The honor was given to OAP "for sustaining rural prosperity across the drought-prone Southern High Plains by finding solutions to problems from declining water availability for the Ogallala Aquifer," the award stated.

The program is composed of a research consortium between the USDA - Agricultural Research Service (ARS), Kansas State University, Texas A&M University through Texas A&M AgriLife Research and Texas A&M AgriLife Extension Service, Texas Tech University and West Texas A&M University.

The Texas Water Resources Institute serves on the leadership team for the program.

The 10-year-old program has contributed to the conservation of the aquifer through major advances in on-farm water conservation activities while also promoting agriculture, according to OAP.

Major accomplishments of the program include advancements in the design and management of subsurface drip irrigation. Regional acres using this technology have doubled since 2003. Additionally, development of soil moisture sensors has provided real-time, accurate data on total soil water availability.

Extension programs offered through the program have educated farmers on water conservation practices, and media stories have also informed the public about the aquifer's importance to state and national food and fiber production.

Irrigation scheduling using evapotranspiration data has reduced water application by 15 percent over the past 10 years, saving farmers approximately \$200 million in production costs.

OAP's research has also impacted Texas water policy by contributing to the development of Region A (Texas Panhandle) Water Plans.

Regional water planners examined the impact of implementing water conservation practices that are based on OAP research. These practices include continued adoption of efficient irrigation systems like center pivot and subsurface drip irrigation; irrigation scheduling based on crop needs using sensors that detect crop water stress and/or the integration of weather data; and use of crop varieties that have lower water requirements.

Adoption of these practices is projected to reduce irrigation demand so that supply will exceed demand from 2050 to 2060. Such conservation efforts, based on technologies and knowledge from the OAP, are expected to maintain and expand the \$4 billion agricultural economy of the Texas Panhandle, as documented in the current Region A Water Plan.

The [Ogallala Aquifer Program](#) is funded by a USDA ARS research initiative.

Three riparian and stream ecosystem workshops coming up



The Texas Water Resources Institute's [Texas Riparian and Stream Ecosystem Education Program](#) will host three workshops in April and May for residents interested in land and water stewardship.

April 24 in Weslaco, a free workshop for area residents interested in the Arroyo Colorado watershed will be hosted by the Texas A&M AgriLife Extension Service in Hidalgo County from 8 a.m.-4 p.m. The morning session will be at the Texas A&M AgriLife Research and Extension Center,

2415 E. U.S. Highway 83 in Weslaco, and the afternoon session will include a field site tour along the Arroyo Colorado.

A workshop for residents in the Cedar Bayou watershed is set from 8 a.m.-4 p.m. **May 8** in Mont Belvieu. The morning session will be at the McLeod Community Center, 10717 Langston Drive, and the afternoon session will include an outdoor stream walk along the bayou. The free workshop will be co-hosted by the AgriLife Extension office in [Chambers County](#), [Houston-Galveston Area Council](#) and the [Cedar Bayou Watershed Partnership](#).

The AgriLife Extension office in [Kerr County](#) and the [Upper Guadalupe River Authority](#) are co-hosting a workshop **May 13** in Kerrville for residents in the Upper Guadalupe watershed. It is set from 8 a.m.-4 p.m. with the morning session at the Upper Guadalupe River Authority Lecture Hall, 125 Lehmann Drive, and the afternoon session along the river.

"Trainings for both workshops will focus on the nature and function of stream and riparian zones as well as the benefits and economic impacts from proper functioning riparian systems," said **Nikki Dictson**, Texas Water Resources Institute Extension program specialist and coordinator of the program. A riparian zone is the land area adjacent to the bank of a stream, creek or river.

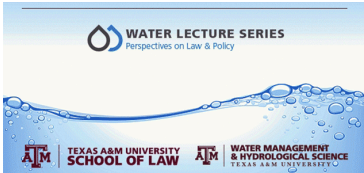
Dictson said workshop topics will include riparian and watershed management principles, water quality, riparian vegetation, hindrances to healthy riparian areas, stream processes, management practices and local resources.

"The goal is for participants to better understand riparian and watershed processes, see the benefits of healthy riparian areas and know what resources are available to prevent degradation while improving water quality," Dictson said.

The riparian education program is managed by the [Texas Water Resources Institute](#), part of [Texas A&M AgriLife Research](#), [AgriLife Extension](#) and the [College of Agriculture and Life Sciences](#) at [Texas A&M University](#). It is funded through a Clean Water Act grant provided by the [Texas State Soil and Water Conservation Board](#) and [U.S. Environmental Protection Agency](#).

For more information, contact Dictson or visit texasriparian.org.

Water lessons from Australia to be presented at April lecture series



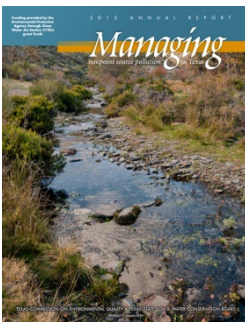
The [Texas A&M University School of Law](#) and [Texas A&M's Water Management and Hydrological Science Program](#) are sponsoring a [Water Lecture Series on Perspectives on Law and Policy](#), and upcoming lectures will feature keynote speaker **Mike Young**, chair in water and environmental policy at the University of Adelaide in Australia.

Young will discuss "Water Scarcity: Is Texas Missing an Opportunity? Lessons from Australia" at 12:30 p.m. **April 25** at the Texas A&M School of Law in Fort Worth. **April 28**, Young will speak on "Allocating and Sharing Water: Lessons from Australia" at 2:40 p.m. in Scoates Hall, Room 208, on the Texas A&M campus.

Young is also Gough Whitlam and Malcolm Fraser Chair in Australian Studies at Harvard University and honorary professor at the University College London.

To attend, RSVP to events@law.tamu.edu by **April 22**. For more information on the lectures, visit law.tamu.edu/WaterLectureSeries.aspx.

Learn how Texas manages nonpoint source water pollution in latest TSSWCB report



The [Texas State Soil and Water Conservation Board](#) (TSSWCB) and the Texas Commission on Environmental Quality recently released the [2013 Annual Report on Managing Nonpoint Source Water Pollution](#). Highlights in the report include annual load reductions of nitrogen, phosphorus and sediment and success stories from water bodies across the state.

The federal Clean Water Act requires states to develop a program to protect the quality of water resources from the adverse effects of nonpoint source water pollution. The Texas Nonpoint Source Management Program, updated in 2012, is the state's comprehensive strategy for addressing nonpoint source water pollution, according to TSSWCB.

Each year, Congress appropriates federal funds to states through the U.S. Environmental Protection Agency under the Clean Water Act 319(h) Nonpoint Source Grant Program, and Texas uses these funds to administer and implement the Texas Nonpoint Source Management Program

Many local, regional, state and federal agencies play an integral part in managing nonpoint source pollution, especially at the watershed level, according to TSSWCB.

The report emphasizes the state's efforts during fiscal year 2013 to collect data, assess water quality, implement projects that reduce or prevent nonpoint source pollution, and educate and involve the public to improve and maintain the quality of Texas water resources.

Multiple projects and programs that are managed or assisted by the Texas Water Resources Institute are featured in the report, including the [Texas Watershed Planning Training Program](#), [Lone Star Healthy Streams](#), [Arroyo Colorado Watershed Conservancy](#), [Texas Well Owner Network](#) and [Carters Creek Watershed TMDL Implementation Plan](#).

The report is [available for download](#), and hard copies are available from TSSWCB upon request. For more information about the report, contact **Ashley Wendt** at 254-773-2250 or ashley.wendt@tsswcb.texas.gov. See the full TSSWCB [news release](#) for more details.

Tony Allan of London Water Research Group lecturing at TAMU April 29

Professor **Tony Allan**, head of the London Water Research Group in the Department of Geography at King's College London, will present a public seminar titled "[Who Determines the Demand for Food and Who Manages Water?](#)" **April 29** at 3 p.m. in Room 208 of Scoates Hall on the Texas A&M University campus. The presentation is hosted by the Texas A&M Department of [Biological and Agricultural Engineering](#).

Allan will discuss how food demand impacts sustainable management of the water resources on which food security depends. For more details, see the [seminar flyer](#).

Dallas Texas A&M AgriLife center brings WaterSense to metroplex



More than 800 people from Dallas and surrounding cities attended the recent WaterSense event at the [Texas A&M AgriLife Research and Extension Center](#) held in conjunction with World Water Day and national "Fix a Leak Week."

Presented in partnership with Dallas Water Utilities and the U.S. Environmental Protection Agency (EPA), Region 6, the program highlighted various water education and conservation efforts of the center's Urban Water Program, as well as other water-saving programs and research being conducted at the center.

"The most popular part of this event was the open house tour for the public of our two on-site WaterSense display residences, a house and a multi-family dwelling, both of which are on the center's grounds," said **Clint Wolfe**, urban water program manager for the Dallas center.

As urban water program manager, Wolfe facilitates the activities of a team of water resources professionals at the center to assist with research and outreach programming in the areas of water quality and conservation, as well as watershed planning.

He said the event marked the public grand opening of the center's [WaterSense](#) multi-family structure and gave attendees the opportunity to tour both that structure and the nearby WaterSense-labeled home.

WaterSense is an EPA partner program that emphasizes "saving water and protecting the environment by choosing WaterSense-labeled products for the home, yard and business, along with taking simple steps to save water each day." It estimates that WaterSense-labeled homes use 40 percent less water than the average home, saving about 50,000 gallons a year for a family of four.

"The home and apartments serve as working models to demonstrate to visitors just how easy water conservation can be," Wolfe said. "These WaterSense-oriented dwellings provide hands-on learning

opportunities in areas such as hot water on-demand systems, water-efficient faucets and fixtures, water-efficient landscaping and irrigation systems, rainwater harvesting and rain garden design.”

He said through this event and many other ongoing center programs, people can learn about readily available technology to help them lower their overall water use and some simple behavioral changes they can make to save water and money.

Wolfe said in 2013 the Urban Water Program reached an estimated 50,000 people from the metroplex and surrounding areas through a variety of educational and informational events, including classes, professional trainings, youth events, do-it-yourself rain barrel workshops and WaterSense-labeled home tours.

For more information on the center’s urban water conservation efforts and for water-saving tips, go to dallas.tamu.edu, and read the full AgriLife TODAY [news release](#). For more information on WaterSense, visit epa.gov/watersense. The WaterSense-labeled home was also featured in the [Fall 2013 issue of tXH₂O magazine](#).

Texas A&M doctoral student receives UCOWR national award

Each year, the [Universities Council on Water Resources](#) (UCOWR) hosts a competition for Best Dissertation in Water Resources. **Mario Fernandez**, doctoral student in Texas A&M University’s Department of Agricultural Economics, has won the award in the Water Policy and SocioEconomics category for his dissertation, [Decadal Climate Variability: Economic Implications for Agriculture and Water in the Missouri River Basin](#).

The award will be presented at UCOWR’s [annual conference](#) in June. **Dr. Bruce McCarl**, Texas A&M distinguished professor, regents professor and Texas A&M AgriLife faculty fellow, served as Fernandez’s committee chair.

New TWRI and IRNR publications

Natural Resources Training Courses

Texas Riparian and Stream Ecosystem Workshop – Arroyo Colorado	April 24
Texas Riparian and Stream Ecosystem Workshop – Cedar Bayou Watershed	May 8
Introduction to ArcGIS 10	May 13–14
Texas Riparian & Stream Ecosystem Workshop – Upper Guadalupe River	May 13
Introduction to ArcGIS 10	July 29–30

New IRNR and TWRI Projects

Watershed Characterization, Public Outreach and Education in the Brownsville-Resaca Watersheds of Cameron County

In an effort to most efficiently address the concerns and impairments, the Brownsville-Resaca watershed must be characterized to identify potential causes and sources. It is a goal of this project to identify existing data, identify data gaps, for characterization as well as identify a path forward in selecting an analytical method for estimating pollutant loads. Further, it is a goal of this project to engage, educate, and solicit input from stakeholders on what they believe goals, objectives, and indicators should be for addressing the impairments and concerns. Ultimately, it is the goal of this project to accomplish Element A and initiate Element E of EPA's Nine Elements for Watershed Plans found in the Handbook for Developing Watershed Plans to Restore and Protect our Waters.

Funded by: Texas Commission on Environmental Quality

Partners: Texas Water Resources Institute, Texas A&M AgriLife Research, Texas A&M AgriLife Extension Service District 10, Texas Institute of Applied Environmental Research, University of Texas at Brownsville

An Emission Comparison between Diesel Powered and Dual Fuel Powered Drilling Rigs

The Oil & Gas industry has been adopting cleaner generators and emission controls on engines for many years. In addition, several operators are now switching from diesel to natural gas to power upstream activities. However, how these new diesel engines, natural gas powered bi-fuel engines and emissions control technologies perform in the real world are less documented and assessed. In this study, we will use the state of the art emissions measurement instruments to provide a real world assessment of the emissions from both diesel engines and the natural gas bi-fuel engines. The study will include 4 components to which will: 1. Conduct measurement using Fourier Transform Infrared Spectroscopy (FTIR) to provide a direct measurement of NO_x, VOCs, CO and CH₄ from the exhaust of diesel engines and natural gas bi-fuel engines at Pioneer's drilling rig site. 2. Conduct measurement using Open Path Fourier Transform Infrared Spectroscopy (FTIR) to provide an ambient measurement of the downwind NO_x, VOCs, CO and CH₄ from diesel engines and natural gas bi-fuel engines at Pioneer's drilling rig site. 3. Conduct an advanced air emission inventory using the total diesel fuel consumption, the average Brake Specific Fuel Consumption (BSFC) and the diesel density to determine the approximate total Hp-hr per drilling job which will be multiplied by the tier rated emissions for the engine. The estimate will be for NO_x, VOC's CO, PM10 and PM2.5. 4. Conduct ambient particulate measurement using a portable sequential ambient particulate sampler that measures PM10, PM2.5 or PM-1 to provide an ambient measurement of the downwind emissions from diesel engines and natural gas bi-fuel engines at Pioneer's drilling rig site. Research Objective Develop a better understanding of engine emissions for oil and gas processes, especially to determine the amount of emissions reduced from switching away from diesel to natural gas bi-fuel engines. **Funded by:** Pioneer Natural Resources

Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research

Achieving Household Water-Use Efficiency Using Automated Metering Infrastructure

This project will investigate best technological approaches for achieving household water-use efficiency using automated metering infrastructure (AMI), also known as smart meters. Working with several cities in Texas, as well as AMI equipment manufacturers in the private-sector, comparative tests will be run across an anticipated test group of 50,000-75,000 homes to determine the most effective methods and software to communicate meter data to household water users to maximize water-use efficiency. Working with these public and private-sector partners will allow Texas A&M to establish itself as a leader in understanding the nexus between AMI technology and water efficiency, not only from a conservation standpoint, but also in rate structures, leak detection, and infrastructure optimization.

Funded by: Texas A&M AgriLife Research, Texas A&M AgriLife Extension Service and Texas A&M Engineering Experiment Station by the Texas Legislature

Partners: Texas Water Resources Institute, Texas A&M University's Zachry Department of Civil Engineering, Texas A&M AgriLife Research, Texas A&M AgriLife Extension Service and Texas A&M Engineering Experiment Station

State-wide Landscape Model Evaluating Quail Declines in Texas

The project objectives are to identify important links between state-wide land use changes, incidences of disease in different quail populations, declines in quail abundance. (2) provide management and policy

recommendations for county, regional, and state-wide conservation, (3) identify areas within the state to concentrate quail conservation efforts, particularly habitat restoration, targeted land acquisition, easements, partnerships, for both short-term and long-term management needs, at landscape and statewide scales.

Funded by: Texas Cooperative Extension

Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research, Department of Wildlife & Fisheries Sciences

FY2014 Annual Application under Section 104 of the Water Resources Research Act of 1984, as amended

This project provides funds for program administration and information/technology transfer of the Texas Water Resources Institute, which includes personnel time, printing of the txH2O magazine, travel funds for the UCOWR/NIWR meetings and dues and other miscellaneous travel funds for project meetings. In addition, one water assistantship student is funded for a project dealing with horizontal wells.

Funded by: U.S. Geological Survey

Partners: Texas Water Resources Institute, Texas A&M AgriLife Research, Department of Geology & Geophysics

White-winged Dove (*Zenadia asiatica*) Needs Assessment: Aggregating Information, Identifying Gaps and Synthesizing Current Knowledge

Currently, the range of the white-winged dove in the United States includes at least 20 states, with the highest levels of harvest occurring primarily in 5 states, Texas, New Mexico, Arizona, California and Florida, with ancillary data indicating that white-winged doves are harvested in with regular frequency in Oklahoma, Kansas, Missouri, Nebraska, Arkansas, Colorado, Nevada, Utah, all gulf coast states (Louisiana, Mississippi, Alabama, Georgia) as well as South Carolina, North Carolina, Indiana, Maryland, Kentucky, Ohio and Pennsylvania. Throughout their range, white-winged doves are habitat generalists and have adapted to a variety of environments ranging from desert-dwelling to urban areas (Cottam and Trefethen 1968, George et al. 1994, Schwertner and Johnson 2005, Veech et al. 2011). Thus, there is little consensus on white-winged dove conservation and management actions and data acquisition are primarily left to individual state agencies (Rabe and Sanders 2010). However, as white-winged doves are expanding and being represented in the bag in >20 states, and as management of migratory birds is a complex charge with multiple stakeholders each with specific needs and objectives, identification of the current population status and demography, as well as a rigorous evaluation of additional data needs is required to support conservation and management of white-winged doves across the United States.

Funded by: U.S. Fish & Wildlife Service, Department of Interior

Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research