Texas A&M students walk with water buckets to raise awareness

Texas A&M University students recently carried buckets of water around campus to simulate the experience of walking to access clean water and to raise awareness of the one billion people in developing countries who struggle with clean water scarcity.

The event, called “Walk4Water,” was organized by Just4Water, a student nonprofit organization dedicated to providing self-sustainable water solutions to developing countries, said Adriana Huerta, head of the organization’s fundraising committee.

During the event held Nov. 19 at Rudder Plaza, students walking to class could stop by the booth and sign up for a walk led by organization members. Each participant carried a bucket around the plaza and the Memorial Student Center, a 15-minute walk that included brief stops to discuss water scarcity statistics and information.

Students also donated money to the cause, which will help fund the annual trips to developing countries in Latin America, Huerta said. Just4Water members travel to rural villages that lack access to clean water and help build wells.

Without wells, villagers in such areas must walk to the nearest river, fill a bucket with several gallons and carry it back home, she said. The precarious journey often takes place on mountainsides, and a spilled bucket means another trip back to the river.

The villagers’ only available sanitation method is boiling, which does not process the water enough for human consumption, Huerta said.

The organization also teaches the locals how to use the equipment so they can build their own wells and increase their self-reliance.

Last year, Just4Water partnered with Avodec, an organization in Nicaragua, said Marco Heras, president of Just4Water.

“The first water well we did was in a community. After we taught Avodec how to use our equipment, they did one at a hospital that was seeing 200 patients a month. But the hospital was only getting water three days a week,” he said. “Now they have water every single day and they are planning to expand their hospital.”

Engineering students who are part of the organization research the country’s soil and water characteristics prior to designing the community wells, Huerta said.

Additionally, Walk4Water is sponsored by First United Methodist Church of La Grange, The Barn at College Station, El Payasito Mexican Restaurant and Bahama Bucks, who matched $5 for every person who walked.

Although the event was an important fundraiser, the focus was to help A&M students understand the magnitude of the issue and to appreciate their own easy access to clean water, Heras said.

“We want the students at A&M to know how blessed and thankful they should be because they turn on the faucet and they have water right there,” Huerta said. “There are actually one billion people in the world who do not have access to drinking water. It is a huge number we just don’t consider at all.”

Heras said the best way to make an impact is through networking and raising awareness. “You don’t know if the next person you meet is going to be the one who will change the world,” he said. “That’s why we’re trying to get awareness on campus.”

After their walk, participants reflected on the experience and what it means to walk for water.

“It really changed my perspective,” said a Walk4Water participant. “I will be much more conservative with my water usage.”

Heras said Just4Water hopes to expand to the national level and be recognized as a nonprofit organization. Currently, the group is trying to start chapters through different universities in places as diverse as El Paso, Massachusetts Institute of Technology and Mexico City.

More than 200 students participated in the Walk4Water event, which raised $5,500 for the organization"s service trips.

Geographic Information Systems training course set for Jan. 27-28 in College Station

The Texas A&M Institute of Renewable Natural Resources will conduct an Introduction to ArcGIS 10 training course Jan. 27-28, 2016 in College Station.

The course will be 8:30 a.m.-5 p.m. both days at the institute, 1500 Research Parkway, Room 200, 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 instructor for the course.

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.

“The fee minus a nonrefundable processing fee will be refunded if the institute receives notice of cancellation at least six business days prior to the class start date,” Snelgrove said.

The registration form is available on the course’s webpage. Classes are limited to 12 participants.

Snelgrove said five additional 2016 dates have been set for the course: May 24-25, July 13-14 and Nov. 2-3 in College Station and March 30-31 and Sept. 20-21 in San Antonio. On-site training can also be scheduled by contacting Snelgrove at amy-snelgrove@tamu.edu.

Institute announces USGS 104G Water Resources National Competitive Grant

The Texas Water Resources Institute (TWR) announces the Request for Proposals for the FY 2016 National Competitive Grant Program by the U.S. Geological Survey in cooperation with the National Institutes for Water Resources.

Proposals are requested on the topics of improving and enhancing the nation's water supply and availability. Further information on these priority research issues is in the RFP.

Any investigator at an institution of higher learning is eligible to apply for a grant through the Water Research Institute (WRI) established under the provisions of the Water Resources Research Act of 1984. TWRI is Texas' representative WRI.

Proposals may be for projects of one to three years and may request up to $250,000 in federal funds. Proposals require a 1:1 match, thus successful applicants must match each dollar of the federal grant with one dollar from non-federal sources. Federal funds may not be used to pay for indirect costs, but matching funds can be used for indirect costs.

Proposals must be filed online by 4 p.m. Central Time, Feb. 25, 2016. The proposals must then be approved for submission to the National Competitive Grants Program by the Texas Water Resources Institute by no later than 4 p.m., March 17.

Additional information about proposal content, format, review process and registration with the NIWR system is available in the RFP or on TWRI's website.

Questions regarding this grant program can be directed to Danielle Kalisek at the Texas Water Resources Institute at dmkalisek@tamu.edu or 979.845.2781.

Bush School researchers report on connections among water, energy and food policy issues

Understanding public opinion and policy preferences as they relate to the nexus of water, energy and food (WEF) is the focus of a new study by a team of researchers from the Institute for Science, Technology, and Public Policy (ISTPP) at the Bush School of Government and Public Service at Texas A&M University.

WEF issues form a highly connected nexus, and combatting pressing issues related to any one of the resources requires a better understanding of these nexus relationships by policymakers and the public, according the school's news release.

"Water, energy and food are highly integrated systems – movement or changes in one segment changes the others," said Arnold Vedlitz, director of ISTPP.

"Public policymakers are going to have to make decisions about the allocation of resources in a manner that recognizes and preserves this system," Vedlitz said. "In order to help decision-makers in making these decisions and for the public to accept these decisions, the public needs to know and understand what's going on."

Kent Portney, a Bush School professor of public policy and an expert in environmental policy and sustainability, and Vedlitz, a professor of public policy and an expert in science and technology policy and natural resources management, led the project.

The research was presented at The Texas A&M University System Resource Nexus Water Forum held Nov. 17-18 in San Antonio. The research looked at public opinion regarding concerns about water, energy and food issues; policy preferences; and personal behavioral changes involving water and energy. A scientific survey conducted in August collected responses from a representative sample at the national level, state level in Texas and local level in Houston.

The researchers found that the recognition of risks related to the WEF nexus and the desire to have the government and the private sector work together to find solutions was similar across many demographic and political groups in the United States and Texas – with one exception.

“While party and ideology do not seem to drive the concern for water or energy or support for certain policies, there is a strong partisan divide when climate change gets introduced,” Vedlitz said. “When considering how climate change gets discussed and the roadblocks to enacting policy the climate change issue creates, it will be important to frame the discussion about the WEF nexus so that the divide that surrounds climate change is not passed on to the nexus issue.”

The Texas A&M System Resource Nexus Water Forum was the first public outreach meeting of the Area 41 Institute, a recent initiative created by Texas A&M System Chancellor John Sharp intended to provide solutions to major issues faced by the state of Texas. The initiative provides research drawn from across various colleges and institutes within the Texas A&M System that can be used by decision-makers trying to tackle issues related to transportation, water, energy and health care.

Read the full Bush School story.

Abstracts for presentations, posters for 2016 Southwest Stream Restoration Conference due Jan. 15

Natural resource professionals throughout the Southwest who are interested in presenting at the 2016 Southwest Stream Restoration Conference June 1-3, 2016, in San Antonio have until Jan. 15 to submit their abstracts.

The conference provides an opportunity for natural resource professionals to share ideas and lessons learned in stream and watershed restoration planning, assessment, design, construction and evaluation. The conference includes presentations, discussions, exhibits and workshops of local ecosystem restoration projects.

Conference topics of interest include restoring urban streams; innovation in restoration design and implementation; riparian restoration and management; watershed restoration to improve habitat; planning and permitting; and case studies and lessons learned. Other topics include ephemeral streams; best management practices; low water crossings (science); communities and streams; sediment and streambank erosion/protection of drinking water supplies; floodplain management; stream restoration and instream flows; post flood/fire hydrology effects on stream dynamics; and outreach and education efforts.

More information on abstract submissions can be found here.

Texas A&M University campus golf course strives to conserve, manage water

Since its multi-million dollar renovation in fall of 2013, the Texas A&M University Campus Course has used water-efficient practices and technologies to establish itself as not only a premier golf course but a leader in water conservation.

Management practices to reduce water demand include careful selection of turf varieties and efficient irrigation systems, said Steven Chernosky, golf course superintendent. “I really think that a golf course should be kind of the symbol for conservation,” he said.

The course grass is selected based on hardiness and watering needs, he said. All turfgrass grown on the course are Bermuda varieties, with Celebration Bermuda for the fairways, tees and roughs and MiniVerde Bermuda for the greens.

“It’s best fit for this area because it doesn’t require a lot of water and it’s a very aggressive grower,” he said. “It does really well in drought situations where we don’t have to overwater.”

Roughly 10 acres of the course have been transformed into naturalized areas that also help reduce water use, Chernosky said. Such zones are still fertilized and treated as turf but require significantly less water.

“We put out rye grass, and we kind of let it grow up,” he said. “We water it to get it germinated, then we can turn off about 150 sprinkler heads.”

Specific control over all 1,600 of the course’s sprinkler heads is what makes the irrigation system so efficient with its water use, Chernosky said. Water savings can quickly add up with each sprinkler head using approximately 30 gallons of water a minute.

“If we need to run one for 20 minutes, we can run the one next to it for five, if need be,” he said. If a wet area starts to form, Chernosky can shut off the sprinkler heads in that location from his office.

“In the morning when I come in, those will actually be flashing, whichever one is turned on,” he said, referring to the blue dots on his computer screen that correspond to the course sprinklers.

Chernosky said he uses weather readings from the Texas ET Network as well his own observations to make adjustments to the irrigation system accordingly. Such strategic control can aid in reducing unnecessary water use and increase efficiency. “I drive to work sometimes and I see sprinklers going off in the rain,” he said. “Luckily I know here, they’re not.”

As an added protection, the system is designed to shut off when it senses a major pressure drop from a pipe break. The pipes are also made of HDPE, high-density polyethylene, which is a heavier plastic than commonly used PVC, or polyvinyl chloride, Chernosky said.

HDPE pipes are typically used for gas lines due to their ability to withstand ground shifting. “Unless you dig it up with a tractor or hit it with a trencher, more than likely you shouldn’t have any breaks,” he said, jokingly.

Eventually, the golf course irrigation system will run off a weather station to further increase water conservation. The sprinklers’ software can be programmed to water the course based upon data it receives from the station, mainly evapotranspiration (ET) measurements, he said.

The station will send the information to the computer, combine the ET rate with the irrigation rate of the sprinklers and give a recommended run time, Chernosky said. “By having the ET rate, we have a better idea of how much water is actually needed to replace what was lost since the last irrigation cycle.”

A rain sensor will be installed along with the weather station, providing even more technical control over the irrigation. The sprinklers can be shut off after a certain amount of rainfall or irrigate at less than maximum flow, depending on how the golf course management programs it, Chernosky said.

“You will be able to tell the system, after four hours, come on at this percentage,” he said. “So instead of running at 100 percent, it can run at 50 or 60 percent, based on ET calculations.”

The team also uses two types of soil moisture meters every day to check the greens and make sure no overwatering is occurring.

Efforts to increase water conservation are part of the recommendations by the South Texas Golf Course Superintendents Association to improve golf management practices across the state. Following Georgia's decision to restrict water usage on golf courses after its major drought from 2007-2009, Texas golf administrators applied similar regulations to their greens, Chernosky said.

Adjusting water use is not only critical for regional drought recovery and prevention, but, according to Chernosky, can be very beneficial for the business. "The price of water has gone up so high," he said. "We can spend a lot of money on water if we're not careful."

Reflecting on the general perception that golf courses are major water wasters, Chernosky said he is proud of his irrigation methods. "I'm proud of the water we have, and I don't want to just throw it out and waste it," he said. "I try to educate others on that as well."

For more on the golf course's water conservation practices, see the txH_2O story, "Charting a new course: Renovated campus golf course prioritizes water conservation."

AgriLife Extension publications outline agriculture impact to Ogallala Aquifer

Six publications analyzing the water use of the crop and livestock industry in the Southern Ogallala Aquifer region have been completed by Texas A&M AgriLife Extension Service specialists.

Water use in the southern Ogallala region has greatly exceeded the recharge rate for the past several decades, leading to a steady decline in the aquifer, said Dr. Steve Amosson, Regents Fellow and AgriLife Extension economist in Amarillo.

This decline and water use in the agricultural sector had many stakeholders questioning whether the economic benefits to the region's economy justified the agricultural operations water use, Amosson said.

The objectives of the study, supported by the federally funded Ogallala Aquifer Program, was to evaluate the impacts the various agricultural sectors are having on the Ogallala Aquifer, both in water use and economic impact, he said.

The publications outline the beef, swine, dairy, small grains, feed grains and cotton sectors in the region, he said.

All six publications, which include in-depth results and analysis of each of the industries, can be found in the Texas A&M AgriLife Extension Bookstore. They can be downloaded free or hard copies can be purchased for $5 each.

"The water use of the agriculture sector is substantial but so is the economic impact," Amosson said. "It is important to realize the economic impact on the area far exceeds the individuals directly involved in the production. Several satellite businesses have been attracted to the region because of these production sectors including fertilizer dealers, cotton gins, feed dealers and packing plants to name a few, which adds to the impact."

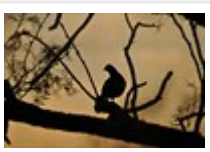
Contributing to the studies are Dr. Bridget Guerrero, former AgriLife Extension program specialist and now a West Texas A&M University assistant professor; various AgriLife Extension specialists; and commodity organizations.

The region is semiarid, primarily dependent on the Ogallala Aquifer for water. The aquifer stretches from the Dakotas to the southern plains of Texas and comprises approximately 174,000 square miles. The Southern Ogallala Region is defined in this study as the 97,000 square miles of the aquifer from the northern border of Kansas to just north of the Midland-Odessa area and includes parts of five states.

The region consists of 19.7 million acres of cropland and more than 6.4 million acres enrolled in the Conservation Reserve Program; the rest is rangeland. Of the cropland, 7.3 million acres are irrigated and 12.4 million acres are dryland. The primary irrigated crops grown in the region are corn, wheat, cotton and sorghum.

Read the complete AgriLife Today story.

Distinguished Lectureship in Quail Management set for Jan. 8 in Dallas



The Texas A&M AgriLife Extension Service will conduct the Distinguished Lectureship in Quail Management from 9:30 a.m. to 12:15 p.m. Jan. 8 at the Dallas Convention Center.

Dr. Dale Rollins, AgriLife Extension statewide coordinator for the Reversing the Quail Decline Initiative, said the program is being held in conjunction with the Dallas Safari Club's annual convention.

Admission to the quail lectureship is free, but admission to the Safari Club's trade show is $20.

"This year's keynote speaker is Dr. Bill Palmer with Tall Timbers Research Station in Tallahassee, Florida," Rollins said. "His topic will be 'Restoring Quail Populations: From Quail Plantations to National Forests.'"

Rollins said Palmer is the president and CEO of the Tall Timbers Research Station and Land Conservancy. His research interests include northern bobwhite quail management on public and private lands, behavioral ecology and population dynamics with an emphasis on predator-prey relationships. He has more than 50 research publications to his credit and guided development of the national quail restoration plan.

"We started the lectureship series in 2008 to keep 'students of quail' updated by leaders in quail research and management, and Dr. Palmer epitomizes those credentials," Rollins said. "Tall Timbers is recognized throughout 'quaildom' for their achievements of cutting edge research and sustained contributions to our knowledge of quail management.

The agenda features two presentations by Palmer with the remainder of the morning devoted to updates from the Rolling Plains Quail Research Foundation and from AgriLife Extension's Reversing the Decline of Quail Initiative.

The lectureship is sponsored by the Rolling Plains Quail Research Foundation and is funded in part through the legislatively funded Reversing the Quail Decline Initiative, in cooperation with AgriLife Extension, the Dallas Safari Club and the Quail Coalition.

For more information, contact Rollins at 325.653.4576, d-rollins@tamu.edu.

Read the AgriLife Today story.

Planners aim for coastal growth in all the right places

When it comes to helping coastal communities be more resilient to weather hazards, ideas don't need to be sandbagged, experts say.

That's why the Federal Emergency Management Agency (FEMA) has granted $750,000 to the Texas Coastal Watershed Program, which already is experienced in working with city leaders along the Texas coast and other Gulf states.

“We’re the first cooperating technical partner in this region that FEMA has funded to go in a new direction with community outreach,” said Steven Mikulencak, Texas A&M AgriLife Extension Service program specialist with the program.

Mikulencak said the project will reach out to municipalities before a storm to devise ways to prevent loss of lives and property through better planning and overall community improvement.

“People tend to think about hazards in terms of emergency response,” said Dr. John Jacob, AgriLife Extension specialist and director of the Texas Coastal Watershed Program. “This is more about ‘deep’ resilience long-term. It turns out that those things that improve a community’s quality of life – things like walkability and more parks and vibrant spaces – will also make a community more resilient in terms of coastal hazards and any number of other problems.”

The project, which is jointly administered with Texas Sea Grant at Texas A&M University, includes three components: county resiliency support, training for city leaders and a digital scenario-mapping workshop for citizens and officials. It is part of FEMA’s Community Engagement and Risk Communications program for Region 6, which includes Texas, New Mexico, Oklahoma, Arkansas and Louisiana. Initially, the project will target municipalities in eight Texas coastal counties, Mikulencak said.

The project will help communities identify municipal planning options – including community design – that mitigate coastal hazards to pair those with state and federal resources, he said.

The training segment will include instruction on legal and regulatory issues for city planning, as well as policies that can reduce risks for floods and other hazards, while building a better community, Mikulencak said. The growth scenario-planning workshop will teach people how to use a hands-on tabletop electronic tool known as CHARM, Community Health and Resource Management, to visualize the impact of various planning choices.

The team will be working with communities one-on-one to get a better understanding of what their priorities are in terms of planning, development and growth, Mikulencak said. That information will be used to prepare a score or framework for the coast, which in turn will enable them to align better with state and federal resources for those priorities.

“Coastal growth in all the right places” is the operative term, Jacob said.

“If we are putting homes in the wrong place, this is not a good practice,” he said. “If we can avoid a hazard to begin with, that changes the equation for response and recovery, and it changes the need for expensive infrastructure projects. Our niche, in looking at resiliency from a planner’s perspective, is really about good policy and good planning choices and educating communities about the risks.”

The Texas Coastal Watershed Program is a joint effort of AgriLife Extension and the Texas Sea Grant Program.

Read the full AgriLife Today story.

Journal publishes new paper on Texas water policy and weather

The Texas Water Journal recently published “Texas water policy appendix: the weather” by Carlos Rubinstein in its Volume 6, Number 1 issue.

In the paper, Rubinstein examines weather events over the past 150 years that have resulted in policy changes at the state and federal level. These changes, Rubinstein writes has helped the state “prepare for, respond to, and prevent weather disasters.”

“Recent droughts and floods have demonstrated that traditional infrastructure must work in tandem with early forecasting and warning systems, which will require effective policies at both the state and federal level to support them along with citizen engagement,” he writes.

The Texas Water Journal is an online, peer-reviewed journal devoted to the timely consideration of Texas water resources management, research, and policy issues from a multidisciplinary perspective that integrates science, engineering, law, planning and other disciplines.

The journal is published jointly by the Texas Water Journal, a nonprofit organization, and the Texas Water Resources Institute.

Texas Well Owner Network publication wins educational materials award

The educational publication “Texas Well Owner Network: Well Owner’s Guide to Water Supply” has received a 2015 Extension Education Community Education Materials Award from the American Society of Agronomy.

The award was presented at the 2015 ASA Educational Materials Awards Program held recently in Minneapolis.

Texas A&M AgriLife Extension Service personnel identified in the award presentation were Dr. Diane Boellstorff, specialist; Dr. Mark McFarland, former associate department head and program leader, retired; and program specialists Kristine Uhlman, Drew Gholson and John W. Smith, all from College Station. Also noted was Ryan Gerlich, program specialist with the biological and agricultural engineering department.

“Texas Well Owner Network: Well Owner’s Guide to Water Supply” was selected from 66 entries in six topic areas setup to recognize excellence in Extension materials.

“It’s an honor to have this publication recognized, especially since household well owners in Texas are responsible for ensuring that their well water is safe to drink,” Boellstorff said. “Our goal was to provide them with a practical, useful, science-based guide to use to help ensure their water quality.”

She said the publication discusses common factors that affect well water quality and quantity, including common contaminants in well water in Texas, water testing methods, treatment options, well siting and recommendations for protecting well water quality.

“There is also information on aquifers, watersheds, and federal, state and local regulations,” she said.

The Texas Well Owner Network was developed to respond to the state’s water quality needs through the management and protection of private water wells under the control of the landowner. The network has been supported by Clean Water Act nonpoint source grants from the Texas State Soil and Water Conservation Board and U.S. Environmental Protection Agency. The National Integrated Water Quality Program of the U.S. Department of Agriculture’s National Institute of Food and Agriculture also supported the network. The Texas Water Resources Institute manages the grants.

A major goal of the network is to deliver a science-based, community-responsive educational program focusing on protecting human health, groundwater quality and aquifer integrity, Boellstorff said. Another is to enhance awareness of water quality issues and increase knowledge of best management practices.

The guide and other educational materials can be found on the TWON's website.

Read the complete AgriLife Today story.

Natural Resources Training Courses

- Texas Watershed Coordinator Roundtable: Addressing Wildlife and Exotic/Invasive Species in Watershed Planning, Monday, Jan. 11, 2016, College Station, TX
- Introduction to ArcGIS 10, Jan. 27-28, 2016, College Station, TX
- APEX modeling workshop, Jan. 26-28, 2016, Temple, TX