October 2014

New Texas Land Trends report shows decline in rural working land acreage

Texas experienced a net loss of nearly 1.1 million acres of privately owned farms, ranches and forests from 1997 to 2012, continuing the trend of rural land conversion and fragmentation in Texas, according to a new Texas Land Trends report released by the Texas A&M Institute of Renewable Natural Resources (IRNR).

“More than 54 percent of this land conversion was related to development associated with population expansion in the state’s 25 fastest growing counties,” said **Dr. Roel Lopez**, IRNR’s director and a co-author of the report. “From 1997 to 2012, approximately 590,000 acres were lost from the agricultural land base in these counties.”

Developed by the institute, Texas Land Trends is an interactive website and database that consolidates and analyzes data about property values, land use, land ownership size and population growth in the state.

Primary data sources for Texas Land Trends are the Texas State Comptroller of Public Accounts and the U.S. Department of Agriculture National Agricultural Statistics Service’s Census of Agriculture. Data from the U.S. Census Bureau, USDA National Resources Inventory and the U.S. Department of Commerce Bureau of Economic Analysis–Regional Economic Information System is also used. Reports are published every five years, following release of the Census of Agricultural data.

IRNR recently analyzed the 2012 data and published the first in a series of reports based on the new information. Status update and trends of Texas rural working lands is a 5-year trends update on Texas rural working lands. Future reports will examine the status of Texas lands from the perspective of key issues, such as water and energy.

The new data will be incorporated into the interactive website by early 2015.

Lopez said the analysis of the new data showed that privately owned farms, ranches and forests account for 83 percent of the land in Texas and are increasingly threatened by suburbanization, rural development and land fragmentation driven by rapid population growth

“This dramatic loss and fragmentation of privately owned farms, ranches and forests — also known as working lands — is affecting the state’s rural economies,” he said. “The conservation of water and other natural resources is also being affected, as is the nation’s national security and food security.”

The report also highlights the state’s land values. **Todd Snelgrove**, IRNR’s associate director and a co-author of the report, said in 2012 the average appraised market value of Texas working land was $1,573 per acre, a 36-percent increase since 2007 and a 214-percent increase over the 15-year period. “The largest increases in land values were observed surrounding major metropolitan growth areas,” he said.

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Snelgrove said the goal of Texas Land Trends is to provide public and private decision-makers with information needed to plan for the conservation of Texas working lands.

“Texas Land Trends is a critically important data source for policy makers, conservation organizations, state agencies and federal agencies in terms of looking at what is happening to our land base in Texas,” he said.

Blair Fitzsimons, chief operating officer for the Texas Agricultural Land Trust (TALT), agreed.

“Farms, ranches and forests in Texas are undergoing a fundamental change, and Texas Land Trends provides a valuable source of information for anyone in the natural resources community,” she said.

“Through Texas Land Trends, we have been able to raise awareness that ‘Yes, we have a lot of land in Texas,’ but we are losing it at a faster rate than most other states in the country, and that loss is having profound impacts on our agricultural base, our water resources and our native wildlife habitat,” Fitzsimons said.

The new report and a fact sheet are available on the redesigned Texas Land Trends website. As new reports are issued, they will be available online.

Texas Land Trends was developed in cooperation with Texas A&M AgriLife Research, Texas A&M AgriLife Extension Service and TALT. It was funded by the Meadows Foundation, Houston Endowment, Mitchell Foundation, Hershey Foundation and Texas A&M AgriLife Extension Service.

Thursday in San Antonio: Lost Water Conference for water suppliers

The Edwards Aquifer Regional Water Conservation Program is sponsoring the Lost Water Conference **Oct. 30** in San Antonio for staff of municipal water utilities and other water suppliers in the Edwards Aquifer region. The conference will be from 9:30 a.m.-2:30 p.m. at the Edwards Aquifer Authority (EAA) offices, 900 E. Quincy St. in San Antonio.

Dr. Calvin Finch, of the Texas A&M Institute of Renewable Natural Resources and an organizer of the conference, said speakers will discuss lost, or non-revenue, water and identify lost water issues within the Edwards Aquifer. One of the institute’s urban water initiatives is to help manage the water conservation program for EAA.

“Lost water is the difference between water that water suppliers pump from the Edward’s Aquifer and the water sold to water users,” Finch said. “The fact that such a difference exists means that water purveyors are paying fees and electricity to pump water that is never sold.”

Finch said this event will help water purveyors understand lost water issues and the resources available from the Edwards Aquifer Habitat Conservation Plan’s regional water conservation program that can help communities save water.

Finch said the Edwards Aquifer Habitat Conservation Plan was developed to balance the protection of endangered species with water use in the Edwards Aquifer. The water conservation program, part of the habitat conservation plan, includes conservation activities targeted at municipal water providers and assistance through low-flow toilet programs, leak detection and other community specific efforts.

Lost water can result from leaks in the distribution system due to old or damaged pipes and pumps, inaccurate metering and accounting, non-metered water use and stolen water, Finch said.

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“In the Edwards Aquifer region, municipalities and industrial users pump approximately 280,000 acre-feet of water every year,” Finch said. “An average of 15 percent lost water would equal about 42,000 acre-feet of water, worth over $42 million, every year.

“Reducing lost water from 15 percent to 10 percent in the Edwards Aquifer region would save 14,000 acre-feet or 4.5 billion gallons of water every year,” Finch said.

Conference presenters and topics will include:

- **Dr. Kelly Brumbelow**, associate professor, Texas A&M University Zachary Department of Civil Engineering, on the definition of lost water
- **Ann Gabriel**, project manager, Texas Center for Applied Technology, on the Edwards Aquifer Habitat Conservation Plan and regional water conservation program
- Finch, on water loss services offered by the regional water conservation program

The conference will end with a question-and-answer session with representatives from EAA, Texas Water Development Board and the Texas A&M University System. Demonstrations will include trainings on leak detection and ultrasonic flowmeters.

The conference is free to attendees, and lunch will be provided. For additional information, contact **Amy Truong** at 210.277.0292, ext. 205, or Finch at 210.277.0292, ext. 205, or calvin.finch@tamu.edu.

Meet a Scientist: Rusty Feagin

When he was 12 years old, **Dr. Rusty Feagin** moved to Seabrook, a city along the Texas coast surrounded by industrial development. It was then that Feagin began to consider the importance of coastal health. “Living there brought environmental issues to the forefront of my mind,” Feagin said.

Feagin’s interest in the environment persisted throughout his teenage years, and in college he earned a bachelor’s degree in environmental studies from the University of California, Santa Cruz.

After graduating, Feagin returned to the Texas coast to work on public policy related to coastal restoration and management. Although he enjoyed aspects of this work, Feagin said he wasn’t happy working in politics. So, he turned to science.

While obtaining his doctorate in rangeland ecology and management from Texas A&M University, Feagin said he discovered that being a scientist was what he was meant to do.

Today, Feagin is an associate professor in the Department of Ecosystem Science and Management at Texas A&M, where he’s worked for the past 11 years. His research is primarily concerned with biological and physical changes to beaches, dunes and wetlands.

To look at changes in wetlands, Feagin uses spatial technologies, such as geographic information systems (GIS) and mapping. These analyses allow him to make inferences about areas that are too large to sample, he said.

“We’re looking at a bigger place than we can conceivably walk across,” he said. “We can look at huge landscapes that may be several miles of area or even bigger.”

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Feagin also researches the potential for coastal plants to reduce erosion. By collecting sediment that blows inland, plants contribute to the build-up of soil along the coast, known as accretion. This process can help combat coastal erosion caused by rising sea levels, he said.

This natural balance between erosion and accretion is often interrupted by human interventions, such as building sea walls, Feagin said. “Humans want things to be stabilized, whereas the world wants things to be dynamic,” he said.

Dr. Rusty Feagin

While some ecologists have said that plants can help protect coasts from natural disasters, Feagin said that this is neither an immediate benefit nor the primary reason people should conserve coastal communities. Wetlands and coastal plants may not be able to provide protection from a hurricane, he said, but they are still valuable for long-term conservation and for aquatic wildlife populations.This natural balance between erosion and accretion is often interrupted by human interventions, such as building sea walls, Feagin said. “Humans want things to be stabilized, whereas the world wants things to be dynamic,” he said.

Feagin also tests the effects of waves on coastal plants. To do this, he uses wave tanks that pass waves through a sample of the plants and sediment. Using this method, Feagin compared samples from man-made restored wetlands and natural ones. In his experiment, natural wetlands withstood waves better.

Plant roots do not keep the soil intact when waves are present, according to his research. Even small waves can break up the sediment. In fact, it is possible that roots might shake away some of the soil, he said. This is contrary to previous ecological research indicating that plants help keep soil intact in stationary water bodies, such as lakes.

The opportunity to challenge conventional knowledge is an aspect of the field that Feagin said he finds exciting. “The world of restoration and the need to restore the coast is becoming bigger and bigger,” he said. “And it’s a cool testing ground to test out a lot of ecological concepts.”

Feagin also teaches an introductory GIS class to graduate students and undergraduate students, and he is a faculty member in Texas A&M’s new Ecology and Evolutionary Biology graduate program.

For more information, visit Feagin’s webpage, watch this exclusive Conservation Matters video interview with him, or see the coastal ecologies website.

Experts release recommendations on water sustainability in Texas

A diverse group of water and energy experts, known as the Texas Roundtable on Water, has published a set of recommendations “to ensure the security and sustainability of water resources for the long-term economic and social viability of Texas,” according to the group’s news release.

“These leaders have worked to find consensus solutions that they can advance in order to spur legislative leadership, state agency, water stakeholders and the general public to make sorely needed changes in our state’s public policy and regulatory practices,” the release stated.

Jon Comola, founder of the Wye River Group, said many people in Texas are working to find practical solutions to the state’s water challenges, “but they’ve traditionally worked in silos.”

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Wye River Group is a nonpartisan, not-for-profit organization that tackles challenging public policy issues such as water, health and health care.

Comola said the Texas Legislative leadership invited the Wye River Group "to bring these fragmented interests together, pool talent and resources and hammer out workable solutions."

The roundtable includes 23 state water experts, including **Ken Kramer** with the Sierra Club; **Weir Labatt**, former member of the Texas Water Development Board; **Wayne Klotz** of Klotz Associates; **Robert King** of South-central Partnership for Energy Efficiency as a Resource; **Carole Baker** of the Texas Water Foundation; and **Myron Hess** of the National Wildlife Foundation.

"While the population in Texas continues to boom, the future water supply becomes more uncertain," Weir said. "If consumption continues at the same pace, and we don't come together to drastically change how we operate, our state will be in crisis mode before we know it."

Comola said the recommendations are intended to be adopted at multiple levels across the state and include strategies that the group will tackle in the upcoming legislative session as well as strategies that can be adopted at the regional and local levels.

The group developed recommendations and an abbreviated summary.

Land conservation easement workshop Nov. 3 in Floresville

The Texas Agricultural Land Trust (TALT), in cooperation with Green Spaces Alliance, San Antonio River Authority and the Texas A&M AgriLife Extension Service office in Wilson County, will present a conservation easement workshop **Nov. 3** in Floresville.

The workshop, "Protect, Conserve, Pass Down: A Strategy for Saving Family Lands," will be held from 9 am.–1:30 p.m. at the Floresville Event Center at 600 Highway 97 West.

"The workshop will focus on topics of interest to Wilson County landowners, including mitigating the impact of oil and gas production and of feral hogs, land trends in Wilson County, and the use of conservation easements as an estate tax and income tax planning tool," said **Bryan Davis**, AgriLife Extension Service agent for agriculture and natural resources, Wilson County.

He said other program items will include an introduction to conservation easements, a landowner panel discussion, a National Park Service update and optional tour of Rancho de las Cabras.

Cost is $15 per person, and lunch is included. For more information and to register, contact Davis at 830.393.7357 or by-davis@tamu.edu.

TWRI awards three Mills Scholarships

The Texas Water Resources Institute (TWRI) has awarded Mills Scholarships for the 2014-2015 academic year to three graduate students conducting water-related research at Texas A&M University.

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The scholarship winners are:

- **Charles Fontanier**, Water Management and Hydrological Sciences graduate program. Advisor: **Dr. Richard White**. Research: Improving professional and consumer lawn water management.
- **Hyun Woo Kim**, Department of Landscape Architecture and Urban Planning. Advisor: **Dr. Ming-Han Li**. Research: The role of low impact development practices in mitigating stormwater runoffs in urbanized watershed landscapes: SWAT simulation approach.
- **Anthony (Tony) Rodger**, Department of Wildlife and Fisheries. Advisor: **Dr. Kirk Winemiller**. Research: Flow dependent species: Life history and habitat associations in Texas Gulf Coast Rivers.

TWRI administers the Mills Scholars Program, an annual competitive scholarship program supporting graduate research in water at Texas A&M University, Texas A&M University-Galveston and Texas A&M University-Qatar. This program is funded through the W.G. Mills Memorial Endowment. Since 2001, TWRI has funded scholarships for 171 students involved in water-related studies.

The Mills Scholars Program will begin accepting applications for the 2015-2016 academic year in early 2015. For more information, see twri.tamu.edu/what-we-do/education/mills.

Texas A&M AgriLife Dallas center wins 2014 WaterSense Excellence Award

The Texas A&M AgriLife Research and Extension Center at Dallas has been recognized by the U.S. Environmental Protection Agency (EPA) with a 2014 WaterSense Excellence Award for Outreach and Education.

Clint Wolfe, the Dallas center's Urban Water Program manager, said the center has a long history of providing research-based educational programs on water use efficiency in the region.

Wolfe said in 2013 the AgriLife center's Urban Water Program conducted 243 water efficiency classes, reaching more than 12,000 individuals. It also provided 22 regional outreach events to more than 500,000 individuals, hosted 26 professional trainings for landscape and irrigation industry personnel and conducted 86 youth programs in the Dallas metroplex.

In addition, the center's urban water team constructed 4,800 rain barrels through the "Saving from a Rainy Day" class, saving an estimated 7.6 million gallons of potable water from being used on urban landscapes.

The team also transformed a 1980s house into the center's WaterSense-labeled home, which opened in March 2013. The interior was completely renovated, using many sustainable products, and the 6,850-square-foot landscape was revamped using hardscape, water-efficient turfgrass and planted beds.

The home's landscape showcases Palisades zoysia grass, a resource-efficient turfgrass developed at the center. The grass uses 50-percent less water than other traditional turfgrasses.

"The WaterSense-labeled home serves as an excellent real-world demonstration of water efficient products, plant materials and rainwater harvesting for homeowners," Wolfe said. "The home is also used weekly as a hands-on learning center for the educational classes that we offer."

WaterSense, a partnership program sponsored by EPA, seeks to protect the future of the nation's water supply by offering water-efficient products, homes and services. Since the program's inception in 2006, WaterSense has helped save 757 billion gallons of water and $14.2 billion on water and energy bills, according to EPA.

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For more information on the AgriLife center in Dallas and its urban water efforts, visit its website and read the full AgriLife Today news release.

For more information on the center's WaterSense-labeled home, read this Fall 2013 *txH_2O* story.

Abstracts invited for 2015 UCOWR/NIWR/CUASHI annual conference

The annual joint conference of the Universities Council on Water Resources (UCOWR), National Institutes for Water Resources (NIWR) and the Consortium of Universities for the Advancement of Hydrological Science, Inc. (CUASHI) will be **June 16-18, 2015**, at the Green Valley Ranch Resort in Las Vegas. The event's theme is "Water is Not for Gambling: Utilizing Science to Reduce Uncertainty."

Open to water managers, educators, researchers and other professionals, the conference will address challenges in water resources management, according to organizers. Panel discussions will address the question: Does our improved understanding of water resource policy, planning and modeling lead to better management of our water resources?

The deadline to submit abstracts for paper, panel and poster presentations is **Jan. 16, 2015**. Abstracts can be submitted online and should not exceed 300 words.

For more information, visit ucowr.org/conferences, or contact **Melissa Pind** at 618.536.7571, or ucowr@siu.edu.

Mohanty appointed hydrologic engineering and sciences chair

Dr. Binayak Mohanty, professor in the departments of biological and agricultural engineering and ecosystem science and management, was recently appointed the Texas A&M University College of Agriculture and Life Sciences Chair in Hydrologic Engineering and Sciences. This position recognizes Mohanty's role as a distinguished scholar in hydrologic engineering and sciences, according to the college.

In his 12 years at Texas A&M, Mohanty has conducted internationally recognized research in hydrology, soil physics, engineering, remote sensing, fluid mechanics and biogeochemistry. In particular, Mohanty's research has focused on vadose zone hydrology, the movement of water through the section of soil located above the water table. The vadose zone could hold keys to everything from drought mitigation to water contaminants tracking, food production and flood prediction, but it is not a simple place to understand, Mohanty said in a Fall 2012 *txH_2O* article.

Mohanty and his lab use a combination of ground-, air- and satellite-based remote sensing to study soil moisture and soil hydraulics. This research helps predict water movement and inform water and natural resources management practices around the globe.

Currently, Mohanty serves as advisor to several projects in India that focus on agricultural water management, urban flooding and hydrometeorology.

Learn more about Mohanty in this College of Agriculture and Life Sciences blog post.

New study: Forest sector contributes $30.3 billion to Texas economy

The Texas A&M Forest Service (TFS) has completed a new study of the economic contribution provided by fo wood-based industries in Texas. The report shows that the Texas forest sector continues to be one of the top

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manufacturing sectors in the state and contributed $30.3 billion in industry output, supporting more than 130,600 jobs, in 2012.

TFS periodically produces the report, Economic Impact of the Texas Forest Sector, to give citizens an idea of how the forest sector fits into the Texas economy. The latest report analyzes data collected from 2012, the most current available.

The current report is especially important because it shows where forestry in Texas stands as the economy rebounds from the 2007–09 recession, according to TFS. The recession had a profound adverse impact on the Texas forest sector, and although forest and forest product industries have not fully recovered, there are signs of improvement, TFS officials said.

Dr. Omkar Joshi, TFS forest economist, said that the forest sector is making steady progress, climbing from the lows seen during the recession.

“With the economy improving and the housing market getting better and better, we should continue to see the forest industry’s economic contribution to Texas increase,” he said.

View and download a copy of the full report and visit TexasForestInfo.com for additional information on economic impacts of the Texas forest sector, statewide trend analysis, directory of forest products industries, timber supply analysis, county- or region-specific distribution of forest products and economic values of the ecological goods and services provided by Texas forests.

New IRNR and TWRI projects: July - October 2014

Delivering Education Programs Focused on Stakeholder Needs to Address Agricultural NPS in the Arroyo Colorado Watershed
Funded by: Texas State Soil and Water Conservation Board
Partners: Texas Water Resources Institute, Texas A&M AgriLife Extension Service, Texas A&M AgriLife Research, AgriLife Extension District 12, Biological and Agricultural Engineering, Hidalgo Soil and Water Conservation District #319, TSSWCB Harlingen Regional Office

Statewide Bacterial Source Tracking Program for FY 2015
Funded by: Texas State Soil and Water Conservation Board
Partners: Texas Water Resources Institute, Texas A&M AgriLife Research, TAMU Department of Soil and Crop Sciences, University of Texas School of Public Health at El Paso

City of San Antonio Water Plan
Funded by: City of San Antonio
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Extension Service

Assessing the Conservation Status of Native Freshwater Mussels (Family: Unionidae) in the Trinity River Basin
Funded by: Texas Parks & Wildlife Department
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research

Supporting Total Maximum Daily Loads (TMDLs) and TMDL Implementation Plan (I-Plan) Development for Bacteria in the Tidal Segments of the Mission and Aransas Rivers and their Tributaries
Funded by: Texas Commission on Environmental Quality

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Partners: Texas Water Resources Institute, Texas A&M AgriLife Research, Texas Institute of Applied Environmental Research

Drought Survivability Study
Funded by: Texas Water Foundation
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Extension Service, City of Austin, City of Georgetown, San Antonio River Authority, San Antonio Water Systems

GIS Database Development and Support
Funded by: East Wildlife Foundation
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research

EWF Monitoring Program Design and Pilot Evaluation Phase 1 Year 2
Funded by: East Wildlife Foundation
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research, Texas A&M University at Kingsville

East Wildlife Foundation Wildlife and Vegetation Response to Experimental Grazing Regimes on the Lytton Pasture Pretreatment Data Collection
Funded by: East Wildlife Foundation
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research

Freshwater mussel survey of the Clear Fork of the Trinity River below the outlet works spillway at Benbrook Lake, Benbrook, Texas
Funded by: Corp of Engineers, Department of Defense
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research

Gulf Coast Prairie LCC FY 15 Support
Funded by: U.S. Fish & Wildlife Service, Department of Interior
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research

Technical Natural Resource Management Support for Joint Base San Antonio
Funded by: Corp of Engineers, Department of Defense
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Extension Service

Implementation Plan (I-Plan) Evaluation for the Total Maximum Daily Load (TMDL) for Dissolved Oxygen Lake O' the Pines
Funded by: Texas Commission on Environmental Quality
Partners: Texas Water Resources Institute, Texas A&M AgriLife Research

Leon River On-site Sewage Facility Financial Incentive Program
Funded by: Texas Commission on Environmental Quality
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Extension Service, Coryell County, Texas

Coordinating Implementation of the Leon River Watershed Protection Plan
Funded by: Texas State Soil and Water Conservation Board

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

Implementation of Intensive Water Quality Monitoring and Evaluation to Support the Lake O' the Pines National Water Quality Initiative (NWQI) – Phase I
Funded by: Texas State Soil and Water Conservation Board
Partners: Texas Water Resources Institute, Texas A&M AgriLife Research

Lower Keys Marsh Rabbits - Management Plan
Funded by: Corp of Engineers, Department of Defense
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research

Lower Keys Marsh Rabbits - Option Year 3
Funded by: Corp of Engineers, Department of Defense
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research

Approach to Address Bacterial Impairments in Basins 15, 16 and 17
Funded by: Texas Commission on Environmental Quality
Partners: Texas Water Resources Institute, Texas A&M AgriLife Research, Texas Institute of Applied Environmental Research, Texas Stream Team

Natural Resources Support Cannon AFB and Melrose AFB New Mexico
Funded by: Corp of Engineers, Department of Defense
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research

Natural Resources Support Holloman AFB-NM
Funded by: Corp of Engineers, Department of Defense
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research

Basin Approach to Address Bacterial Impairments in the Navasota River Watershed
Funded by: Texas Commission on Environmental Quality
Partners: Texas Water Resources Institute, Texas A&M AgriLife Research

Watershed protection plan development for the Navasota River below Lake Limestone
Funded by: Texas State Soil and Water Conservation Board
Partners: Texas Water Resources Institute, Texas A&M AgriLife Research, Department of Soil and Crop Sciences

Improving Water Productivity and New Water Management Technologies to Sustain Rural Economies – TAMU
Funded by: Agricultural Research Service, U.S. Department of Agriculture
Partners: Texas Water Resources Institute; Texas A&M AgriLife Research; Texas A&M AgriLife Research and Extension Centers at Amarillo, Lubbock and Vernon; Agricultural Research Service at Bushland and Lubbock

Slowing the Expansion of Woodlands and Increasing the Resilience of Grasslands in the Southern Great Plains
Funded by: National Science Foundation
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research

Integrated Movement Models for Rio Grande Wild Turkey Habitat Selection
Funded by: Texas Parks & Wildlife Department
Partners: Texas A&M Institute of Renewable Natural Resources, Texas A&M AgriLife Research

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Task Force Funds 2015

Funded by: Texas A&M University System

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

UT Lands Ecological Review - FY15

Funded by: University of Texas System, University Lands, Surface Interests

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

UT Lands Endangered Species Review

Funded by: University of Texas System, University Lands, Surface Interests

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

Endangered Species Research Projects for the Western Chicken Turtle

Funded by: Comptroller of Public Accounts

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

Distribution of Western Yellow-billed Cuckoos and Southwestern Willow Flycatchers in West Texas

Funded by: Texas Parks & Wildlife Department

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

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Natural Resources Training Courses

Introduction to ArcGIS 10	Jan. 20-21, 2015
Introduction to ArcGIS 10	March 11-12, 2015
Introduction to ArcGIS 10	May 12-13, 2015
Introduction to ArcGIS 10	July 8-9, 2015

New IRNR and TWRI publications

Texas Land Trends, Vol. 1, Issue 1: Status update and trends of Texas rural working lands, **R. Anderson, A. Engeling, A. Grones, R. Lopez, B. Pierce, K. Skow, T. Snelgrove**, 2014.

Sustainability of the Arroyo Colorado Watershed Partnership and Continued Implementation of the Arroyo Colorado Watershed Protection Plan Final Report, **J. Flores, A. Berthold**, TR-467, 2014.

Water Value and Environmental Implications of Hydraulic Fracturing: Eagle-Ford Shale, **W. Allen, R. Lacewell, M. Zinn**, TR-466, 2014.

Basin Approach to Address Bacterial Impairments in Basins 15, 16, and 17, **L. Gregory, M. Brown, K. Hein, K. Skow, A. Engling, K. Wagner, A. Berthold,** TR-462, 2014.

Best Management Practices for Water Quality: Agriculture in the Lower Rio Grande Valley, **A. Berthold**, EM-117, 2014.

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Watershed Monitoring Benefits Private Lands and Public Water Supplies, **B. Alldredge, J. Cathey, B. Fox, J. McAlister**, EWF-012, 2014.

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