

TWRI

ANNUAL REPORT 2013



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TWO INSTITUTES, ONE MISSION: LAND AND WATER CONSERVATION

The Texas Water Resources Institute (TWRI) and the Texas A&M Institute of Renewable Natural Resources (IRNR) share the expertise of more than 50 full-time professional and support staff, resources and multiple locations around the region and nation. In 2013 alone, the Institutes obtained 57 new projects and brought in more than \$10 million in funding to The Texas A&M University System.

Our role is to advance the interdisciplinary approaches required to effectively address complex natural resource challenges. Since land and water activities are intrinsically linked, the Institutes collaborate on a wide range of issues. We partner with departments, research and extension centers and various organizations to offer a more complete and effective approach to addressing the critical natural resource-related issues of our time.

We bring together research scientists, students, county agents, program specialists, agency partners and others to address complex natural resource issues holistically, with sound and timely research, effective policies and extension and outreach activities.

Working together, we accomplish what a single principal investigator or department could not normally do alone.

Securing and managing ample, clean water is one of the most significant challenges facing Texas today. We need strategic and innovative solutions for major water quantity and quality problems across the state. Economic growth, ecological sustainability, public health and continued food production across the state depend on sustainable water supplies.

At TWRI, we help solve these pressing water issues by providing needed expertise and interdisciplinary partnerships. We also deliver important water information to citizens and professionals. Our work centers around three program areas.

Established in 1952, TWRI was designated as the water resources institute for Texas in 1964 by the Texas Legislature and Texas Governor after Congress passed the Water Resources Research Act of 1964. Today, we are one of 54 institutes in the National Institute for Water Resources, funded by the U.S. Geological Survey.

WHO WE ARE

We are a unit of Texas A&M AgriLife Research, the Texas A&M AgriLife Extension Service and the College of Agriculture and Life Sciences at Texas A&M University, and we work together and share staff with IRNR.

LOCATIONS

To assist in our regional partnerships and projects, our faculty and staff are located at multiple offices: College Station, Karnack, Gatesville, San Antonio and Weslaco.

**WATER QUALITY
IMPROVEMENT**

**WATER SUSTAINABILITY
AND SECURITY**

**WATER RESOURCES
OUTREACH AND TRAINING**

\$3,324,096

**TOTAL TEXAS WATER RESOURCES
INSTITUTE FUNDING IN 2013**

WATER QUALITY IMPROVEMENT

Our *Water Quality Improvement Program* helps stakeholders identify, develop and implement effective management strategies to address local water quality concerns. Throughout Texas, we assist communities with water quality evaluations, watershed assessments and watershed-based plans. We partner with AgriLife Extension professionals to successfully engage the public in identifying and implementing effective strategies, and we work together to demonstrate and evaluate innovative best management practices.

WATER SUSTAINABILITY AND SECURITY

Our *Water Sustainability and Security Program* centers on securing municipal, industrial and agricultural water supplies. Sustained and secure water supplies are vital for economic growth, ecological sustainability, public health and food production. Increased demand, declining supplies, prolonged drought and invasive species threaten these supplies.

To secure water for the future, Texas needs new technologies, increased conservation, policy innovations and diverse sources of water. We collaborate with researchers and extension professionals throughout the state and the nation and work with local, state and federal organizations and agencies to provide science-based solutions to these problems and the education and outreach required to ensure their use.

WATER RESOURCES OUTREACH AND TRAINING

Our *Water Resources Outreach and Training Program* meets the needs of both interested citizens and water resources professionals and students. Research has shown that the more Texans know about their water resources, the more likely they are to participate in water conservation and protection. Our training programs for the public convey best management practices essential to managing our water resources.

Water professionals need knowledge about emerging water resources management tools to address critical water issues, and our courses effectively transfer new science and technology from universities to these professionals.

We also raise public awareness about water resources and the importance of practicing good water stewardship through our publications, social media channels and websites.





PROJECT HIGHLIGHT: CENTER FOR INVASIVE SPECIES ERADICATION

Our Center for Invasive Species Eradication focuses on research, demonstrations, educational programs and direct treatment activities of noxious non-native plant species impacting Texas waters. The center's first undertaking, the Caddo Lake Giant Salvinia Eradication project, is seeking integrated, multiagency management options for giant salvinia. This free-floating aquatic fern, native to South America, is an aggressive invader that can double in size in four to 10 days under favorable conditions and has infested Caddo Lake in recent years.

Project Impacts

- Established a salvinia weevil-rearing facility at the Caddo Lake National Wildlife Refuge
- Released approximately 100,000 weevils at two research sites in 2012 and 2013, with large populations successfully overwintering and weevil densities increasing by more than 50%, causing significant damage to salvinia
- Measured a decline of salvinia biomass of about 80 percent at one site
- Published *A Guide to Mass Rearing the Giant Salvinia Weevil for Biological Control of Giant Salvinia*
- Helped foster the development of a grass-roots effort at Caddo Lake to raise and release additional salvinia weevils

A group of people, including men and women of various ages, are gathered in a dense forest. They are mostly seen from the back, looking towards a man in a light-colored shirt and a white hat who appears to be speaking or presenting. The forest is lush with green trees and sunlight filtering through the canopy.

PROJECT HIGHLIGHT: TEXAS WATERSHED PLANNING PROGRAM

Our Texas Watershed Planning Program trains water professionals new to watershed planning to promote sustainable and proactive approaches to managing water quality. The weeklong Texas Watershed Planning Short Course provides guidance on stakeholder coordination and outreach, the U.S. Environmental Protection Agency's nine key elements of a watershed protection plan, data collection and analysis, and plan development tools. Web-based resources, a listserv and biannual Watershed Coordinator Roundtables provide additional support and forums for continued dialogue. Additional trainings support watershed planning efforts, including courses on water quality monitoring, watershed modeling and stakeholder facilitation. 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. Approximately 15% of the participants in the short course are from other states, because no other courses are available except for EPA's online modules.

Program Impacts

- Sponsored 7 short courses for 228 water professionals
- Held 10 roundtables with 668 water professionals
- Held 15 other watershed-related trainings
- Maintained Texas Watershed Planning website and listserv (410 subscribers)
- Totaled more than 1,270 attendees at various events for water professionals
- Named finalist for the Texas Commission on Environmental Quality Texas Environmental Excellence Award

2013: BY THE NUMBERS

EXTENSION PROGRAM
ATTENDANCE

5,624

RESEARCH AND EXTENSION
CONTACT HOURS

10,882

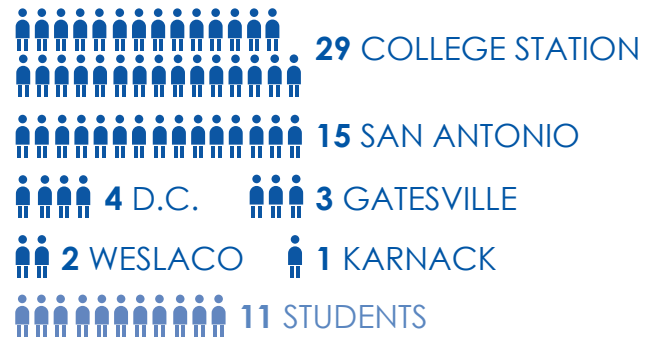
TXH₂O MAGAZINE
SUBSCRIBERS

3,375

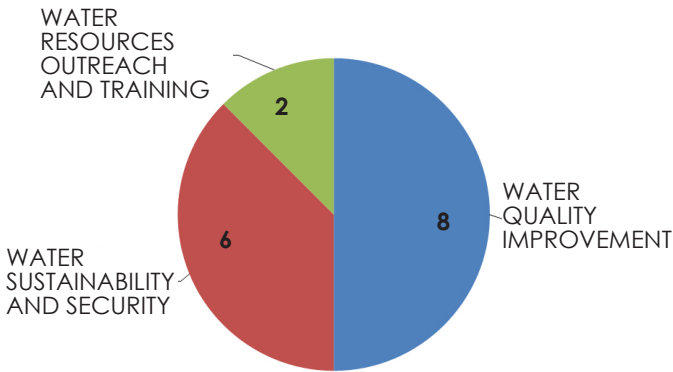
GRANTS AND CONTRACTS

	FUNDING	NUMBER OF GRANTS
RESEARCH	\$2,266,687	12
EXTENSION	\$1,057,409	4
TOTAL	\$3,324,096	16

54 TWRI AND IRNR STAFF MEMBERS



PROJECTS BY PROGRAM AREA



RESEARCH AND EXTENSION
PROGRAMS AND EVENTS

116

PEER-REVIEWED JOURNAL ARTICLES

5

NEWS RELEASES

67

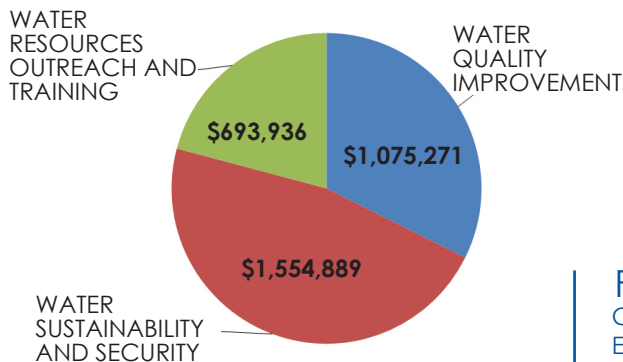
MEDIA MENTIONS

72

GRADUATE STUDENTS SUPPORTED

6

FUNDING BY PROGRAM AREA



FUNDING AGENCIES

COASTAL CONSERVATION ASSOCIATION, EAST WILDLIFE FOUNDATION, EDWARDS AQUIFER AUTHORITY, SAN ANTONIO WATER SYSTEM, TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, TEXAS STATE SOIL AND WATER CONSERVATION BOARD, U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL RESEARCH SERVICE, U.S. GEOLOGICAL SURVEY



TAKING THE LEAD IN WATER RESOURCES MANAGEMENT

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Texas Water
Resources Institute
make every drop count