



THE MEADOWS CENTER FOR WATER AND THE ENVIRONMENT

*No natural resource is more important to our future than water. **Water** is what we do.*

RESEARCH | STEWARDSHIP | EDUCATION | SERVICE



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FOR WATER AND THE ENVIRONMENT
TEXAS STATE UNIVERSITY



WATER IS WHAT WE DO.

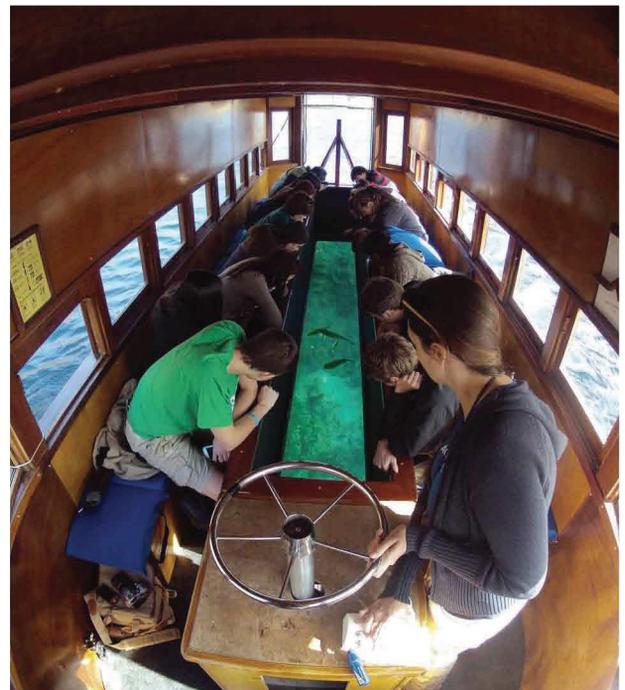
SINCE 2002, The Meadows Center for Water and the Environment's faculty and staff have brought multi-disciplinary expertise to complex, real-world, water-related challenges. We are geographers, biologists, engineers, social scientists, urban and regional planners, strategists, and experts in community engagement and public policy. We are dedicated to helping our partners find economic, social, cultural, and environmental resilience.

In 2012, The Meadows Foundation contributed a transformational gift to Texas State University, providing endowments for three chairs, two professorships, research and scholarships. This gift has proven invaluable to our team and to the organizations and the people we serve. And as a result of that partnership, today our work stretches from West Texas to West Africa.

The Meadows Center is the only organization of its kind in Texas. Our headquarters are located on the site of an environmentally, culturally, and archaeologically significant resource, Spring Lake, which serves as a living laboratory, a community center, and an irreplaceable educational resource.

As a vital part of Texas State University, The Meadows Center brings together departments and research centers to both engage in scholarly inquiry and to provide practical science-based opportunities for faculty, staff, and students. Further, we are committed to sharing that knowledge and information with the community at large.

Our future depends on water. The Meadows Center is steadfast in its mission to find and share holistic, multi-disciplinary, practical, and science-based solutions to real-world challenges. Across Texas and around the world, our work is water. We do that work through research, stewardship, education, and service.





NO NATURAL RESOURCE IS MORE IMPORTANT TO OUR FUTURE THAN WATER.

Earth's Water Planet moniker is both earned and ironic. While water covers nearly three-quarters of the planet, some 99% of that water is in oceans or glaciers, or is otherwise inaccessible. So, all terrestrial life is dependent upon about 1% of world's water supply. Where that 1% percent is clean and accessible there is opportunity for commerce, culture, and coexisting human and natural communities.

THE URGENCY OF WATER

Fresh water is a finite resource. Its sustainability requires judicious management, particularly as pressures rise from agriculture, energy production, industrial uses, and human consumption.

- Over the past century the world population has tripled and water use has grown sixfold.
- In Texas, 2011 was the driest year on record and cost the agricultural industry \$7.62 billion. Other drought-related agriculture economic losses this century: 2009 (\$3.6 billion), 2008 (\$1.4 billion), 2006 (\$4.1 billion), 2002 (\$316 million), and 2000 (\$1.1 billion).

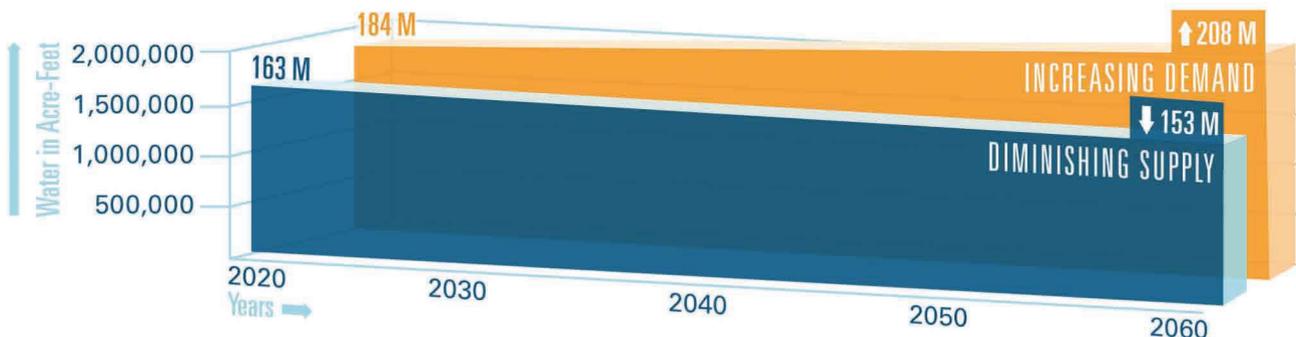
- Some 900 Texas cities may not have enough water by 2050.

In Texas, from 2010 to 2060:

- The population is expected to grow by 82%.
- Water demand is projected to grow by 22%.
- Existing water supplies are projected to drop by 10%.
- Failure to meet water needs could result in more than a million jobs lost and an annual income loss of \$115 billion.

Water is central to life past, present, and future. It is a nexus for economic development, energy production, and human and environmental health. Thus, The Meadows Center for Water and the Environment, along with leaders the world over, are contemplating a common challenge: *How do we manage our water for the health of our communities, the vitality of our commerce and culture, and the sustainability of our environment?*

PROJECTED TEXAS WATER SUPPLY AND DEMAND



Unmanned Autonomous Vehicle (UAVs)

We put unmanned aircraft to work for projects related to fisheries, wildlife, and watershed management and restoration. The versatility, low cost, instantaneous acquisition, and high-resolution multispectral digital imagery gives the UAV broad applicability.

Underwater Archaeology Exploration

We search for Henry Morgan's lost fleet. We explore caves in Mexico, shipwrecks elsewhere, and our own Spring Lake. We investigate archaeological sites to preserve an otherwise inaccessible cultural heritage. We learn how our predecessors interacted with water so that we can help shape how we interact with it today.

International Watershed Studies

We are dedicated to the sustainable management of the world's freshwater resources. Our team leads multi-disciplinary research projects that result in integrated, ecosystem-based management practices that meet human needs and maintain ecological integrity. In doing so, we address scientific, technical, governance, economic, and social issues related to water.

Texas Stream Team

Since 1991, Texas Stream Team has trained 8,000 citizen scientists who monitor some 450 sites along 83,000 miles of waterways in partnership with the Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency.

Watershed Services

We offer research, stakeholder facilitation, water quality monitoring, watershed modeling, GIS, planning, environmental assessments, and more. We help communities develop Watershed Protection Plans and partner on private sector corporate social responsibility and research and development projects.



RESEARCH

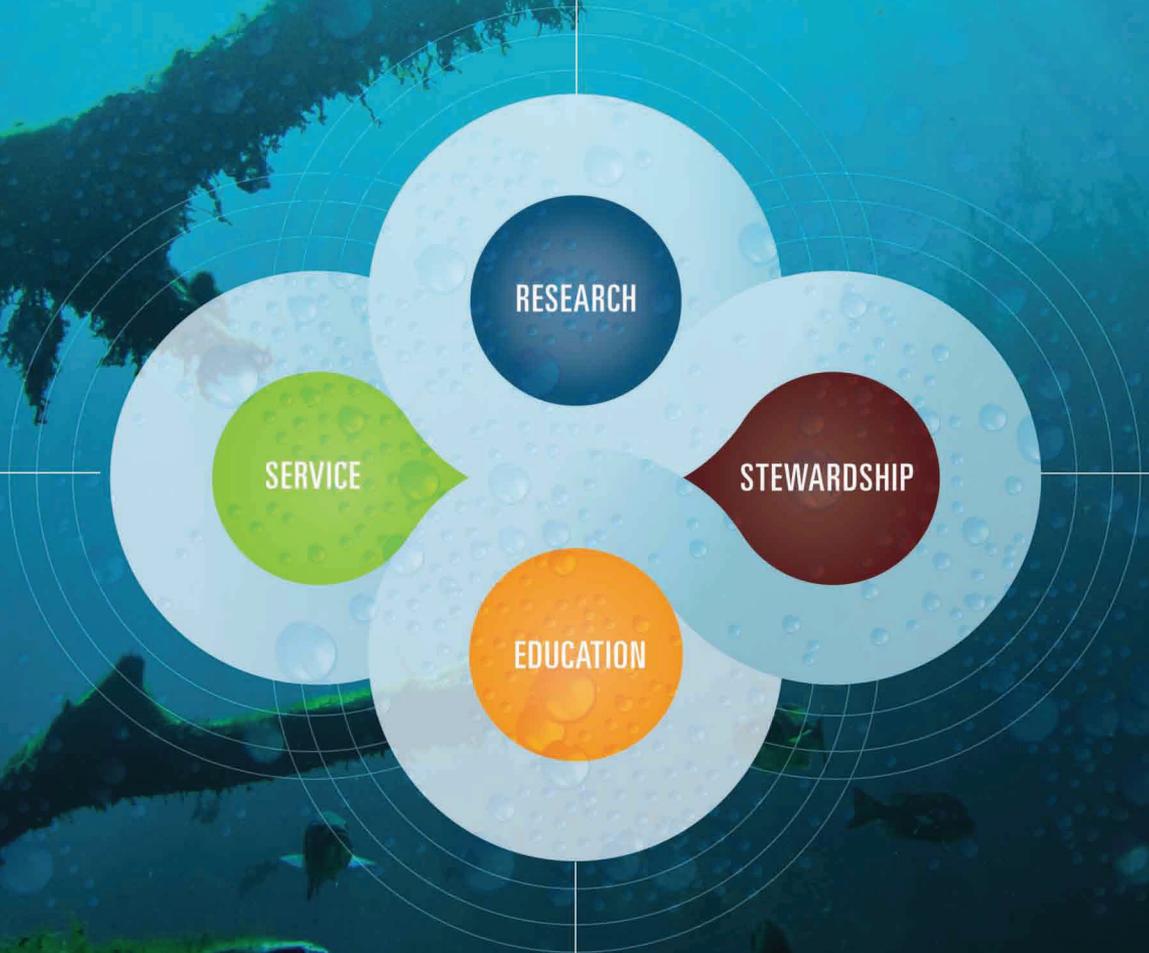
Research is the foundation of all we do. It informs our programs in stewardship, education, and service. We are renowned for our research into environmental flows and many other crucial topics. Our multi-disciplinary team brings diverse expertise to complex scientific and social questions. Our applied research is crucial for communities who are creating and implementing Watershed Protection Plans. We research the sustainable management of water systems for human prosperity and quality of life and environmental health. We address the balance of economic and environmental sustainability. Our stakeholders rely upon our research as they make critical water-focused decisions across Texas and around the world.



SERVICE

The Meadows Center is proud to share our culture of service with communities and organizations across Texas and around the world. The need of a stakeholder determines our approach, but we serve in many ways. We operate one of the largest, longest running, and most successful water quality citizen science programs in the country: Texas Stream Team. We serve on a range of relevant boards of directors, in steering committees, and in leadership roles for local, national, and international organizations. Stakeholders also have access to our collective expertise and resources through our Watershed Services initiative. In each instance, we bring a multi-disciplinary perspective, science-based solutions, and a dedication to the sustainability of our water resources.

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STEWARDSHIP

Spring Lake gives life to the San Marcos River, to San Marcos and downstream communities, and to The Meadows Center for Water and the Environment. Two hundred springs bubble up to form one of the largest aquifer-driven spring systems in the world. Human history here stretches back 12,000 years – making this possibly the longest continually inhabited settlement in North America. The lake is also home to eight threatened and endangered species, one of which – Texas Wild Rice – is found nowhere else on earth. Meanwhile, Spring Lake is a vibrant center and beloved resource for our community. We are honored to be the entrusted stewards of this place. It is at the heart of all we do. We are dedicated to understanding, protecting, and sharing it.



EDUCATION

The Meadows Center engages more than 125,000 people each year in environmental education and outdoor learning activities at Spring Lake and elsewhere. Our learning programs engage people of all ages, teach them about Spring Lake and the importance of water to all living things, and inspire them to become stewards of our natural resources. Our programs offer access to glass-bottom boats–, Discovery Hall, Wetlands Walk, a 251-acre Spring Lake Natural Area, scuba open water checkout dives, special events, citizen science training, and more. We are proud to give people from all walks of life access to nature so they may experience the physical, emotional, academic, and social benefits thereof.

Spring Lake Management

We oversee the Spring Lake Management Plan, which is designed to protect healthy ecosystems, provide research and educational opportunities, and offer access for service activities. As active partners in the Edwards Aquifer Habitat Conservation Plan, we help ensure minimum continuous spring flows of the Comal and San Marcos Springs.

Diving

Our diving program partners with select scuba divers to protect and preserve Spring Lake's abundant natural, historical, and cultural resources. We train citizen scientist divers and, in return, they volunteer their time to one of the most unique habitat restoration projects in the country.

Field Trips & Private Interpretive Tours

We have customized field trips to help most any group – from pre-school to post-retirement – explore Spring Lake. We make sure these interpretive outings meet each group's specific goals for experience and learning.

Glass-Bottom Boats

Since 1946, people have come from across the country to explore Spring Lake on a glass-bottom boat. These historic boats are ever the visitor favorite and are integral to the Spring Lake tradition.

Texas+Water

Published every month by The Meadows Center, the Texas Water Resources Institute and the Texas Water Journal, the Texas+Water online newsletter provides timely and insightful information about one of the most important issues of our time: water.

*The following books are among those we have sponsored
or were written by our faculty and staff:*

Canoeing and Kayaking Houston Waterways by Natalie Weist

Exploring the Brazos: From beginning to end by Jim Kimmel

Flash Floods in Texas by Jonathan Burnett

Freshwater Fishes of Texas by Chad Thomas, Tom Bonner & Bobby Whiteside

Green in Gridlock: Common goals, common sense, and compromise by Paul Hansen

Hillingdon Ranch: Four seasons, six generations by David Langford & Lorie Cantu

Money for the Cause: A complete guide to event fundraising by Rudy Rosen

Neches River Users Guide by Gina Donovan, Richard Lange & Adrian van Dellen

On Politics and Parks by George Bristol

Paddling the Guadalupe by Wayne McAlister

Paddling the Wild Neches by Richard Donovan

Paddling Texas by Shane Townsend

River of Contrasts: The Texas Colorado by Margie Crisp

Southern Plains Bison: Resurrection of the lost herd by Andrew Sansom

Texas Riparian Areas, edited by Dr. Thomas B. Hardy and Nicole Davis

Texas Water Atlas by Lawrence Estaville & Richard Earl

*The Living Waters of Texas by Ken Kramer, David Langford, Dianne Wassenich, Myron Hess,
Janice Bezanson, Mary Whitworth, Susan Kaderka, Ben Vaughn, Mary Kelly & Ann Hamilton*

The San Marcos: A river story by Jim Kimmel

Water in Texas: An introduction by Andrew Sansom



We offer our sincerest gratitude to **The Meadows Foundation** and to the many other individuals, donors and partners who share in our work and in our successes. We thank you all and would like to highlight just a few:

The Andover Group	Harry L. Willett Foundation	The Meadows Foundation	The Texas Tribune
Becky & David Gochman	The Harte Institute for Gulf of Mexico Studies	Michael & Pamela Reese	Texas Water Development Board
Burdine Johnson Foundation	Harte Research Support Foundation	National Fish & Wildlife Foundation	Texas Water Resources Institute
City of San Marcos	Hoblitzelle Foundation	National Geographic Society	The Trull Foundation
City of Wimberley	Houston Endowment	National Park Service	TLL Temple Foundation
Clayton Fund	Jacob & Terese Hershey Foundation	The Nature Conservancy	U.S. Department of Agriculture
Cockrell Investment Partners, LP	Jacobs Technology	One Texas Water	U.S. Environmental Protection Agency
Colorado River Watch Network	James A. "Buddy" Davidson Charitable Foundation	Oshman Foundation	Waite Institute
Communities Foundation of Texas	James M. Schultz	Peter & Mary Faye Way	Way Family Foundation
Coypu Foundation	John Bunker Sands Wetland Center	REI	William & Pamela Harte
The Cynthia & George Mitchell Foundation	Karen & George C. "Tim" Hixon	The Reese Foundation	William M. Hitchcock
Dan Pearson	Kathie & Edwin L. Cox, Jr.	San Marcos River Foundation	William Reeves Fine Art
Diageo North America, Inc.	Lee & Ramona Bass Foundation	Sara Stumberg Walker Fund	The Winkler Family Foundation
Don Henley	Leonard & Karen Huber	Sheila & Walter Umphrey	
Dougherty Foundation	Livingston Lures	The Student Conservation Association	
Dr. Charles Garrison	Louis H. Stumberg Fund	Texas Commission on Environmental Quality	
Ducks Unlimited	Magnolia Charitable Trust	Texas Historical Foundation	
Edwards Aquifer Authority	Matt & Peggy Winkler	Texas Parks & Wildlife Department	
Gordon A. Cain Foundation	Matthew & Jodi Edgar	Texas Pioneer Foundation	
Guadalupe-Blanco River Authority			

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The Meadows Center for Water and the Environment
MeadowsCenter.TxState.edu | (512) 245-9200