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

The Meadows Center
For Water and the Environment
Texas State University
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
SINCE 2002, The Meadows Center for Water and the Environment's faculty and staff have brought multidisciplinary 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, multidisciplinary, 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.
**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.
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.

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 & Kayaks

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

Trib + Water

Published every two weeks by The Texas Tribune and The Meadows Center, the Trib + 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 McAllister
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 Hes, Janice Bezanson, Mary Whitworth, Susan Kaderka, Ben Vaughan, Mary Kelly & Ann Hamilton
The San Marcos: A river story by Jim Kimmel
Water in Texas: An introduction by Andrew Sansom

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TEXAS STATE UNIVERSITY

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