CONTINUING A LEGACY OF LEADERSHIP

The Meadows Center
for Water and the Environment
Texas State University

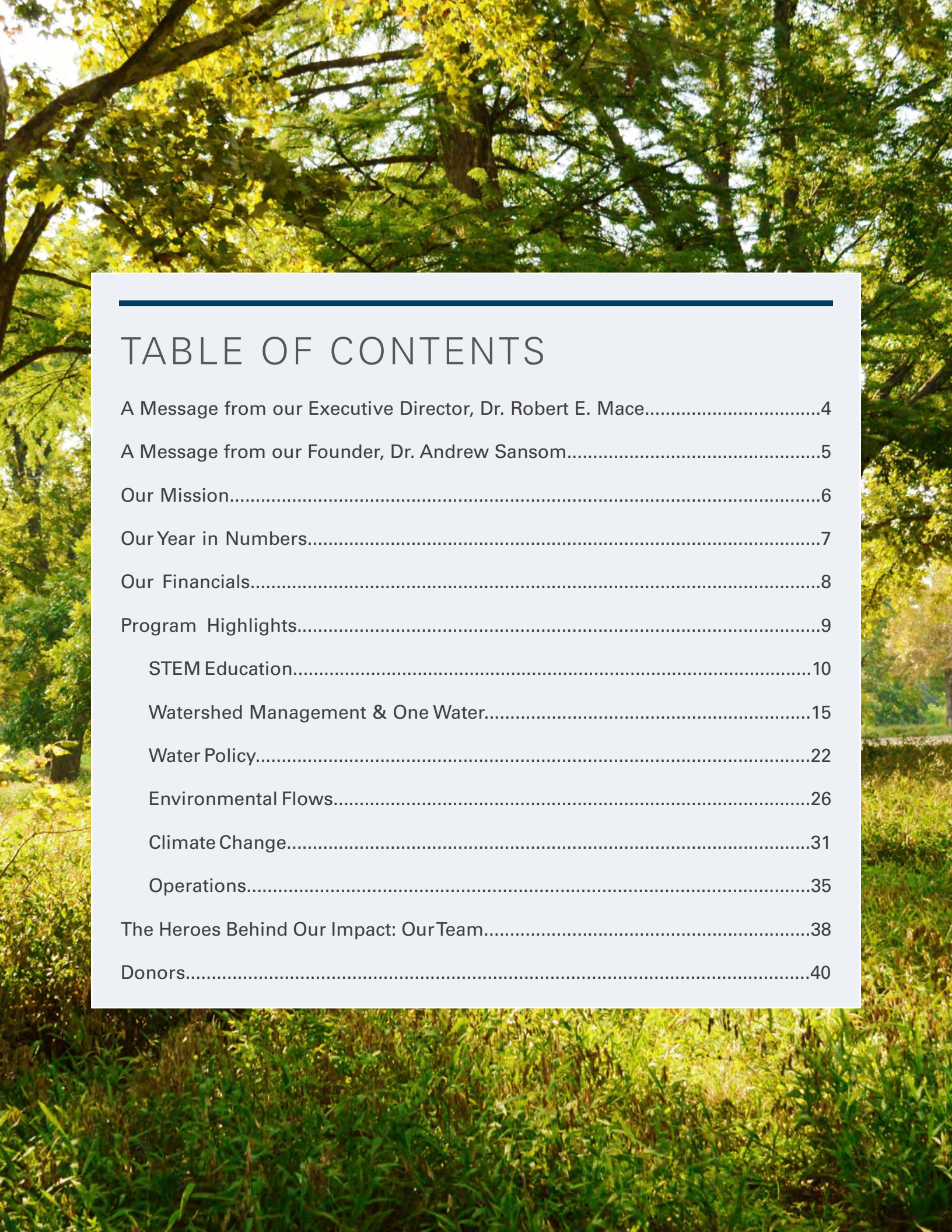
2019-2020
ANNUAL REPORT

MEMBER **THE TEXAS STATE UNIVERSITY SYSTEM**

With the theme "Continuing a Legacy of Leadership," this year's annual report not only highlights some of the accomplishments that reflect the culmination of our founders' original vision, but also shares the plans we have underway to sustain our momentum and grow our organization to meet even greater challenges.

Rapid population growth, land development, climate change and other factors will intensify stresses on water and the environment over the next 50 years. The Meadows Center for Water and the Environment—through research, education, leadership and stewardship initiatives—works to both lead and cultivate broader leadership on conservation.

In an effort to provide a more comprehensive experience and to reduce printing, we are moving more information to our digital Annual Report. Please enjoy the digital report online at **2020AnnualReport.MeadowsWater.org**.



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A MESSAGE FROM OUR EXECUTIVE DIRECTOR

I think I now know how Tim Cook felt when Steve Jobs handed the reigns of Apple to him. Jobs, of course, co-founded the iconic computer company and was a visionary, resulting in some large New Balance sneakers to fill. In my case, I am also taking the reins from a founder and a visionary, the incomparable Andy Sansom. And friends, he wears some large cowboy boots.

Tim Cook and I have been fortunate in our transitions in having the support of the founders, working with an accomplished and competent team, and benefitting from supporters like you. Furthermore, I have the precious luxury of still having Andy here to talk to and learn from, and for that I am immensely grateful.

The Meadows Center has accomplished much since its creation by Texas State University in 2002 with Andy at the helm. But there is so much more to do.

At Spring Lake, we are re-imagining our facility with an interpretive research laboratory that uses technology to excite our youngest Texans about water and the environment and with increased accessibility so anyone who wants to experience Spring Lake can.

In the Hill Country—literally in our back yard—we are working with local partners to address the natural resource challenges from rapid development, including building a school that uses 90 percent less source water, protecting surface-water quality, and understanding options for wastewater treatment.

In Texas, we are working to advance science and policy on sustainability, environmental flows, water resources management, and climate change. And we are striving to publish our work in national and international journals, sharing what we have learned with the broadest of audiences.

The pandemic has been challenging, especially for our educational programs, which are primarily funded through service fees. Thanks to the creativity of Center staff, the university, and critical assistance from our donors, we have been able to keep our educational programs intact.

The world is literally changing before our eyes and while the Meadows Center will keep focus on the conservation fundamentals for water and the environment, I will be working with our team to enhance our abilities and products to help lead Texas to be ready for challenges we've not yet even fully grasped. And while I can't predict the future, I can promise that in an uncertain world, for as long as we have your support, we will continue to be here — working to understand and protect the vital resources we can't live without.

Your friend in water and the environment,

DR. ROBERT E. MACE

A MESSAGE FROM OUR FOUNDER

Every morning for the last 15 years, as I have walked up the steps of Spring Lake Hall each day to the offices of The Meadows Center for Water and the Environment, I have pinched myself. To be able to work on the shores of the second largest spring in the western United States and one of the oldest continuously inhabited sites in North America has been an immense privilege. But the opportunity to work alongside a passionate and talented group of scientists, educators, activists and students has been an even greater honor.

When I left the Texas Parks and Wildlife Department after fourteen years and moved into a tiny restored house in San Marcos and struggled each day just to keep the doors open, I could never have imagined that the leadership of Texas State University would one day assign my colleagues and me the challenge and the absolute joy of being the stewards and the interpreters of the San Marcos Springs or that a transformational gift from the Meadows Foundation would enable us to become a significant contributor to the future of Texas' critical water resources and its environment.

Today, in large part due to the inspiration we receive each day from our surroundings and from the generosity of so many who have chosen to support our work, the Meadows Center is making a difference in our State. From the demonstrable improvements in water quality and supply across the state to our former students who are now senior officials in state government, state park superintendents and groundwater district managers, our people are making a difference.

Meadows Center Executive Director Robert Mace and his team have not only inspired me but also thousands of children who visit the Springs each year including many who then choose to attend Texas State and often careers in conservation.

It has been an honor to serve with them,

DR. ANDREW SANSOM

OUR MISSION

The Meadows Center for Water and the Environment is committed to inspiring research, innovation and leadership that ensures clean, abundant water for the environment and all humanity.

We envision a world where all people understand and embrace the value of water and environmental stewardship.

The Meadows Center fulfills its mission by integrating activities across four pillars of action: research, leadership, education, and stewardship.

Our work in each of these pillars begins at Spring Lake – one of the largest artesian springs in the world – and ripples outward across Texas and beyond.

$2,700,834

research dollars awarded to our faculty and staff

2,896

native species planted in Spring Lake and the Upper San Marcos River

RESEARCH

Conducting Solutions-focused Research

LEADERSHIP

Transforming Knowledge Into Action

EDUCATION

Encouraging Life-long Learning

STEWARDSHIP

Cultivating a Stewardship Ethic

OUR YEAR IN NUMBERS

7,169

volunteer hours dedicated to conservation

44,895

square meters of non-native species removed from Spring Lake and the Upper San Marcos River

$705,300

raised in donations to support our mission

16,504

school children and university students engaged in outdoor learning

129

University students supported through research and education projects

113

new volunteer divers trained to help preserve Spring Lake

55,211

total visitors to Spring Lake

3,393

Total water quality monitoring events collected across Texas

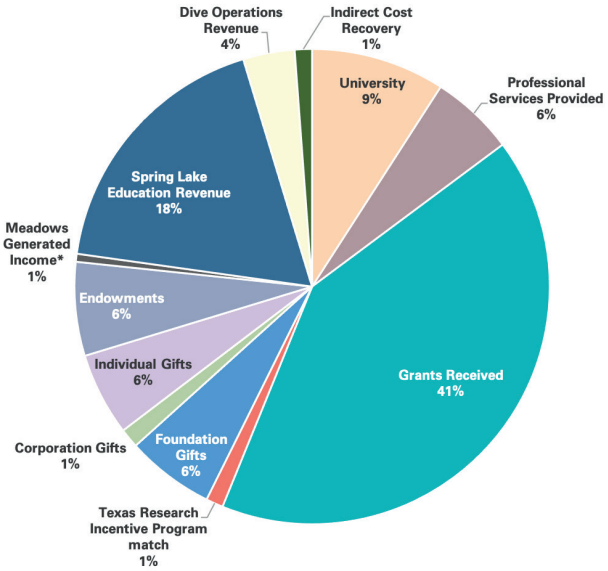
705

citizen scientists trained to monitor water quality for Texas Stream Team

OUR FINANCIALS

REVENUE

University	$349,794
Professional Services Provided	$219,271
Grants Received	$1,588,626
Texas Research Incentive Program Match	$45,000
Foundation Gifts	$230,426
Corporation Gifts	$50,742
Individual Gifts	$217,099
Endowments	$244,962
Meadows Generated Income*	$20,893
Spring Lake Education Revenue	$695,765
Dive Operations Revenue	$134,618
Indirect Cost Recovery	$45,151
Subtotal Encumbered Revenue	*$3,731,660*
*Subtotal Unencumbered Revenue***	*$110,691*
Total Revenue	**$3,842,351**



*Sources of income include sale of books, hats, T-Shirts, book royalties and services rendered.

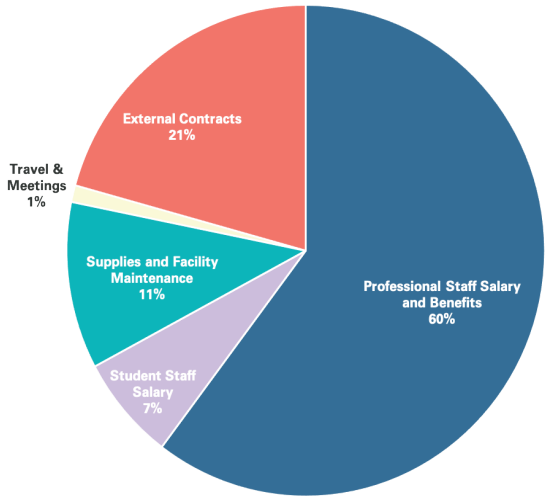
**Sources of unencumbered revenue: donations made generally to the Meadows Center, made for Spring Lake Operations, or dedicated for operation of the Texas Stream Team.

EXPENSES

Professional Staff Salary and Benefits	$2,087,433
Student Staff Salary	$239,474
Supplies and Facility Maintenance	$380,670
Travel & Meetings	$38,101
External Contracts	$717,375
Total Expenses	**$3,463,053**

Balance Carried Forward to Fiscal Year 2020* **	**$379,298**

***Balance reflects carry-forward of multi-year grants and contracts.



PROGRAM HIGHLIGHTS

We've selected just a few of the many accomplishments achieved by our team to provide a snapshot of our success and impact in the past year. On the pages that follow, you will read stories of our progress towards a water-resilient future as it relates to STEM Education, Watershed Management and One Water, Water Policy, Environmental Flows and Climate Change. You will also learn about some of the water heroes who helped make it possible.

STEM EDUCATION

On a bright, clear springtime morning, first one, then two, yellow buses pull into a parking lot tucked in near the banks of the headwaters of the San Marcos River. The buses have arrived at the Meadows Center on the Texas State University campus. When the doors squeak open, dozens of schoolchildren, accompanied by teachers and parents, spill out and are greeted by eager environmental interpreters who will lead them on a journey to learn about the importance of water and natural resources to all living things.

This is a normal day for our education team. Each year, we engage more than 120,000 visitors in outdoor learning programs at Spring Lake, encouraging life-long learning about the environment—and people's relationship to the environment. We view building meaningful connections with nature as a chief conservation strategy. Spring Lake serves as a living laboratory and irreplaceable educational resource for schoolchildren, university students and the public alike.

Texas State University mascot, Boko the Bobcat, joins students on the Meadows Center's Wetlands Boardwalk during their field trip at Spring Lake.

Leading Environmental Education with Creativity in the Wake of a Pandemic

The COVID-19 pandemic has caused educational leaders around the globe to make tough choices. For the Meadows Center, that tough choice came on March 13, 2020 when we had to close our doors to the public for the first time in our history.

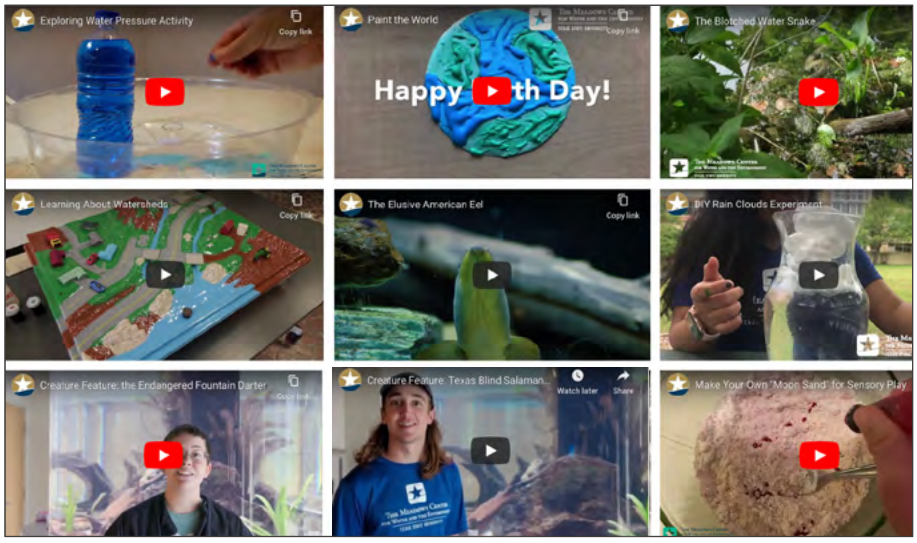
Our educational programming relies on tour and ticket sales and the closure hit during our busiest and most profitable season, resulting in 49% loss of normal revenues between March and August 2020. Nevertheless, our dedicated team rose to the challenge and found a way to continue their work connecting children and guests of all ages to nature through the creation of an online learning hub.

With hundreds of group tours and field trip classes canceled, our interpreters created online, interactive curriculum and made lesson plans available to everyone. The Meadows Center produced new virtual content each week, providing parents and students with hands-on, nature-based activities that are educational, creative and entertaining.

After a six-month hiatus and lots of planning to ensure the health and safety of staff and guests, we partially reopened Spring Lake on September 11, 2020. Entering uncharted waters and unsure of the response we would receive while operating in a pandemic, our team was astounded with the volume of interest and demand we received. Over 300 tours were book in less than a week after opening online glass-bottom boat tour reservations. This first phase of reopening is not the end of our journey, but is a promising step on the long road ahead to recovery.

We are forever grateful to the partners that have supported our educational operations during this unprecedented time, including the Jacob and Terese Hershey Foundation, HEB, the Shield-Ayers Foundation, Nestlé Waters North America, the Cynthia and George Mitchell Foundation and the Alice Kleberg Reynolds Foundation.

You can support the Meadows Center's educational programs by making a tax-deductible contribution to the Meadows Center Excellence Fund at http://Donate.MeadowsWater.org.



DIVE DEEPER

Visit our online learning hub to find educational videos and hands-on science activities that you can do at home: http://learninghub.meadowswater.org/.

Get details on our Spring Lake COVID Reopening Plan: http://covid-19updates.meadowswater.org/.

Increasing Equitable Access to the Meadows Center's Education Programs

We believe in the power of environmental education and have seen firsthand how our programs impact local communities. Connecting children and their families with the beauty and wonder of Spring Lake can have a lasting impact on their ecological behavior and foster a sense of responsibility for the natural world.

However, we've been unable to serve every member of our community. Barriers like cost and physical accessibility remain. This is why we have made it a priority to improve access to our facilities for students in underserved communities. Often, children in underserved communities encounter barriers to accessing experiences in nature. Meanwhile, teachers at many schools are having an increasingly harder time finding the funds to plan and pay for school field trips that foster nature play and learning.

Thanks to the generous support of HEB, the City of San Marcos, and the Burdine Johnson Foundation, over the past two years we have made measurable steps to expand access to our education programs for underserved children by providing them with free, or low-cost field trips to Spring Lake, giving them a one-of-a-kind experience at one of the most biologically diverse aquatic ecosystems in the country. In 2019 alone, we provided over 115 Title 1 schools with low-cost field trips, engaging with 2,236 students from underserved communities.

One of the Meadows Center's greatest responsibilities is preparing the next generation of conservation leaders. Our education program strives to ensure that all children, regardless of their socioeconomic status, can discover the beauty and wonder of the natural world around them.

Studying the Benefits of Mindfulness in Environmental Interpretation

Environmental interpreter leading a Guided Wetlands Tour at Spring Lake.

To really understand the leadership qualities of our education team, you need to meet the remarkable folks behind the scenes. We train and employ a team of 50+ Texas State students to serve as environmental interpreters to lead the nature experiences at Spring Lake and connect visitors to the San Marcos Springs through our interpretive education programs.

Environmental interpretation has long been recognized as a powerful tool for building long-lasting, purposeful nature connections. Likewise, practicing mindfulness while in nature and being fully present in the moment can increase one's ability to create these connections. While there are ample studies about mindfulness and nature connectedness, few studies have researched the relationship between mindfulness and environmental interpretation.

Our Chief Education Officer, Dr. Rob Dussler teamed up with Texas State's Dr. Anthony Deringer, Assistant Professor in the Department of Health and Human Performance, and embarked on a study to investigate the value of incorporating mindfulness training in our interpreter development programs and the practice of interpretation. Two themes have emerged from their research that suggest practicing mindfulness had a positive impact on participants: 1) mindfulness helped participants be more engaged and aware of the natural world around them and 2) mindfulness created more authentic interpretive experiences for participants.

Increased awareness and engagement also made our education student workers better interpreters. For example, the students reported noticing new wildlife and having novel nature experiences in areas of Spring Lake that they had visited many times during previous programming. Interpreters reported an excitement to share their newfound discoveries with visitors to Spring Lake and employ mindfulness techniques to promote these nature connections.

Results from the study illustrate the importance of creating intentional spaces within educational programs to slow down and be more immersive, allowing for new opportunities to connect with the natural world. To learn more about this study, read our article published in Volume 25 of the Journal of Interpretation Research.

DIVE DEEPER

Read more about our research related to mindfulness and interpretation: https://bit.ly/3gLhWtX.

Preparing the Next Generation of Conservation Leaders

Don and Reba Blaschke Scholarship for the Protection of the San Marcos River

The Meadows Center selected Haley Johnson, Texas State University graduate student, as the 2020 recipient of the Don and Reba Blaschke Scholarship for the Protection of the San Marcos River. Johnson's thesis research will study how pollution affects water quality in the San Marcos River and how to most effectively implement plans for best management practices to restore aquatic ecosystems, with an emphasis on researching the effects chemicals in plastics have on water quality and the damage they cause to aquatic life.

> *Through my research, I hope to uncover the amount of chemicals from plastics in the river and understand how they alter water quality, wildlife and the overall aquatic ecosystem.*
>
> HALEY JOHNSON

Nestlé Waters North America and Ozarka Brand Natural Spring Water "Every Drop Counts" Scholarship

We supported Nestlé Waters North America in coordinating a $10,000 scholarship to Texas State Wildlife Ecology graduate student, Matthew Stehle. His thesis project examines the ecosystem dynamics of spring systems, where temperature remains constant year-round and light availability changes seasonally. Specifically, he will explore how energy flows through these spring ecosystems between both high and low light availability to determine the aquatic invertebrate's habitat preferences, resource utilization as well as the diversity of invertebrate groups between different habitats. He hopes this research will help inform management of riparian vegetation and restoration efforts of the endangered Texas Wild-rice (*Zizania texana*).

> *Through my research, I hope to aid in conservation of our endangered species and to elucidate the individual effects of certain ecosystem drivers using model systems.*
>
> MATTHEW STEHLE

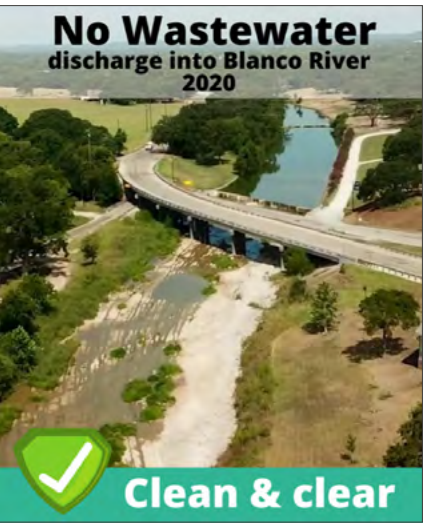
WATERSHED MANAGEMENT & ONE WATER

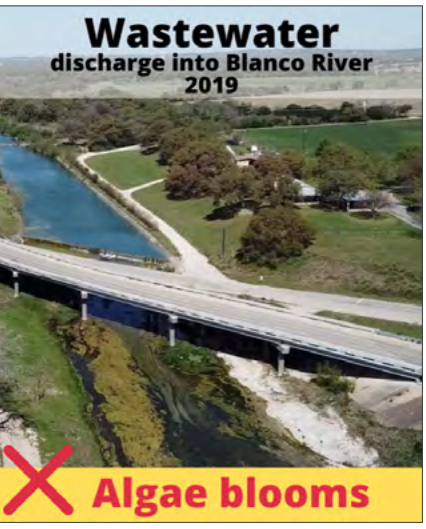
Confronting the state's staggering environmental threats requires not only new solutions but new ways of thinking. Our diverse team of innovators works across disciplines, sectors and boundaries to develop critical knowledge and practical solutions at the forefront of watershed sustainability. The Meadows Center serves as a convener, incubator and support system for a variety of watershed planning and research collaborations across the state to tackle the most pressing challenges facing us, and future generations.

Texas Stream Team trainer, Rachel Sanborn, teaches volunteers how to test for water transparency using a secchi disk.

Working Across Sectors to Lead Innovative Solutions for the Blanco River

The Blanco River is what many would describe as the definition of a beautiful, wild Texas Hill Country river. Springing out of the ground in Kendall County, the river begins its 87-mile course through Blanco and Hays counties before ending its journey as it joins with the San Marcos River.





The Blanco River's watershed supports an array of diverse wildlife, including rare, endangered and threatened species not found anywhere else on Earth. It recharges aquifers providing drinking water to thousands of Texans and bolsters the economic well-being for the communities located within the region.

Following the construction of a new wastewater treatment facility for the City of Blanco, in October 2018, the community began allowing treated effluent to flow directly into the Blanco River. While this method of wastewater disposal is practiced, and often encouraged, across the state, an increasing number of scientists, stakeholders and water-quality advocates view direct discharge as a significant threat to the sensitive aquatic ecosystems and karst aquifers that define the Texas Hill Country. By March 2019, the crystal-clear waters of the Blanco were replaced with foamy mats of algae downstream of the approved discharge.

This story is playing out across the region. The Texas Hill Country is one of the fastest growing regions in the state with new residents generating a whole lot of new wastewater. That wastewater has to go somewhere, and many times it is discharged directly into our waterways. However, there are alternatives.

Our Watershed Services team is leading the charge to a cleaner, healthier future for our Hill Country streams. In September 2020, Nick Dornak, Meadows Center Director of Watershed Services, joined with representatives of Wimberley Valley Watershed Association, Save our Springs and Protect Our Blanco to present a plan to Blanco City Council for the creation of a task force to study cost-effective wastewater options that provide for growth and development without discharge into the Blanco River.

The Task Force was unanimously approved by the Council and marks an important milestone toward a lasting solution for the Blanco River. The Task Force, facilitated by the Meadows Center, will include representatives and technical experts selected by the City of Blanco and Protect Our Blanco and will present no discharge options to the Blanco City Council in December 2020.

DIVE DEEPER

Blanco Growth and Development Without Discharge Presentation: https://bit.ly/2ThG7qb

Baylor Study Shows Discharge Contaminates Blanco River: https://youtu.be/abxeLoBTaLA

(Report) Preferred Wastewater Systems for the Texas Hill Country and Over the Edwards Aquifer: Economic and Environmental Considerations: http://bit.ly/2l8tjhq

Boosting Community Capacity to Protect and Steward Their Watershed

One hot and hazy summer day in 2017, Joanna Wolaver, former Executive Director of the Shoal Creek Conservancy, gazed across a sheet of murky water speckled with trash and slick algae along Shoal Creek, which runs through the heart of Austin, Texas. As the leader of an organization whose mission is to steward the Shoal Creek watershed, Joanna knew something had to change. She turned to the Meadows Center for assistance and The Shoal Creek Watershed Action Plan was born.

Empowering local communities and individuals to determine the future quality of their waterway and watersheds, like Shoal Creek, is perhaps the Meadows Center's most important endeavor related to watershed management.

We provide technical support and research to support communities in protecting and stewarding their water and natural resources by developing watershed protection plans — locally-driven strategies that address specific water quality issues identified in a particular watershed.

Once a watershed protection plan is approved by the Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency, the community often becomes the champion that implements the plan, and we step back to let our role evolve to a more technical and consultant role.

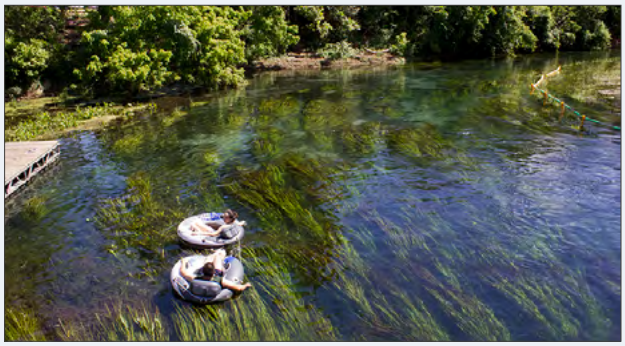
The creation of these locally-led watershed protection plans enable a suite of benefits. It allows communities to step in and do the work that's needed to ensure their water future is one they are proud of. It enables new partnerships at the watershed scale. It amplifies existing initiatives and harness the knowledge, expertise and passion already being demonstrated by so many Texans.

By unleashing this potential and leading the preliminary work required to build watershed protection plans, our Watershed Services team is creating a lasting legacy that all Texans can truly celebrate.

EXPLORE OUR WATERSHED PROTECTION PROJECTS

Cypress Creek

www.cypresscreekproject.net/



Upper San Marcos River

https://www.uppersanmarcosriver.org/

Shoal Creek

https://shoalcreekconservancy.org/watershedplan/

First One Water School in Texas Wins 2020 Rain Catcher Award!

Entrance of the new Blue Hole Primary School, which opened its doors to students in August 2020.

The Wimberly Independent School District made history last year with the construction of the first-ever One Water school in Texas, Blue Hole Primary School. This year, they were honored with a 2020 Rain Catcher Award from the Texas Water Development Board.

Spearheaded by our Director of Watershed Services, Nick Dornak, along with David Baker and Joe Day from the Wimberley Valley Watershed Association, the water-efficient design includes 200,000 gallons of storage to hold rainwater and 600 to 1,300 gallons per day of air-conditioning condensate. Utilizing the captured water to flush toilets and irrigate native landscape, along with an energy-efficient on-site wastewater treatment and reuse system, the school's One Water design is expected to reduce potable water consumption by 90% over industry standard construction specifications. Green infrastructure, exposed plumbing and an internet dashboard will provide built-in educational components for students, educators and visitors.

In addition to accomplishments above, this project is a game changer for resource-starved schools. The Wimberley School District estimates cost savings of more than $1,000,000 over the next 30 years in utility fees, as less water is being used to operate the school.

> *Blue Hole Primary represents what could be a generational shift in how we build in the Texas Hill Country. The process to integrate a One Water design into this beautiful campus was the culmination of years of applied research and stakeholder education efforts to create a community poised to adopt an innovative and transformative approach to sustainable development.*
>
> NICK DORNAK

CITIZEN SCIENCE LEADING THE CHARGE

Texas Stream Team Volunteers Monitor Threats to Texas Water

"I'm glad that there are other people like me, other volunteer citizen scientists, who are willing to test and make sure our waters are safe. Through the Texas Stream Team, we can catch a problem before they get to be out of hand," said Jim Jones, a seven-year Texas Stream Team volunteer in Northwest Bandera County. A conservationist by heart, Jim represents one of 11,000+ volunteers learning to monitor the health of the state's waterways through our Texas Stream Team program.

The Meadows Center's Texas Stream Team, one of the longest-running and most successful citizen science programs in the nation, leads a network of trained volunteers that have been collecting water quality and environmental data across Texas since 1991. These volunteers are proud water leaders in their communities, collecting meaningful, professional-quality water and environmental data and helping to promote watershed stewardship.

Recognizing that the private sector has a critical role to play in bridging the gap to address Texas' water challenges, our partners at Nestlé Waters North America are funding the Texas Stream Team to enhance long-term monitoring efforts in targeted regions of Texas, including near bottling plants operated by Nestlé Waters North America.

Additional citizen scientists will serve strengthen the first line of defense, creating baseline data for waterways that impact Texas communities and sounding the alarm should there be a concern with these precious freshwater resources. Our work will also include connecting with additional schools to provide training and resources to teachers to incorporating water quality education and monitoring initiatives into the classroom to foster ongoing, local stewardship and hands-on learning.

A Hub for Citizen Science in North Texas

The Trinity River flows 423 miles from the confluence of its Elm and West Forks near Dallas to the coast, making it the longest river having its entire course in Texas.

Citizen science volunteer programs are proven to be widely successful at engaging and educating people of all ages while also providing significant contributions to research, fostering community scientific literacy and increasing support of environmental management efforts. Yet, very few resources are devoted to these volunteer programs despite decades of success.

Lack of program funding, dedicated staff and centralized coordination have severely limited citizen science expansion in Texas. In order to increase these types of programs in the Dallas-Fort Worth Metroplex, our Texas Stream Team is working together with University of North Texas' Advanced Environmental Research Institute (AERI) and the Student Conservation Association (SCA) to build a North Texas Environmental Citizen Science Hub to unify and harmonize disparate efforts into a unified partnership.

The Hub will combine our organizations' resources and expertise to expand community engagement with water issues in North Texas, and ultimately build capacity for environmental citizen science projects statewide. This innovative partnership will unite regional players with proven success into a centralized powerhouse that can bring citizen science in Texas to the next level.

Research Validates Texas Stream Team Volunteers Collect "Professional-Quality" Data

Citizen science has become a powerful tool for scientific inquiry that can provide researchers and regulatory agencies with access to an array of data that would not otherwise be available due to time, geographic, or resource constraints.

While volunteer water quality monitoring data can provide valuable information for professional agencies and scientists, it has been relatively untapped, at least in part due to concerns about the accuracy of data collected by volunteers.

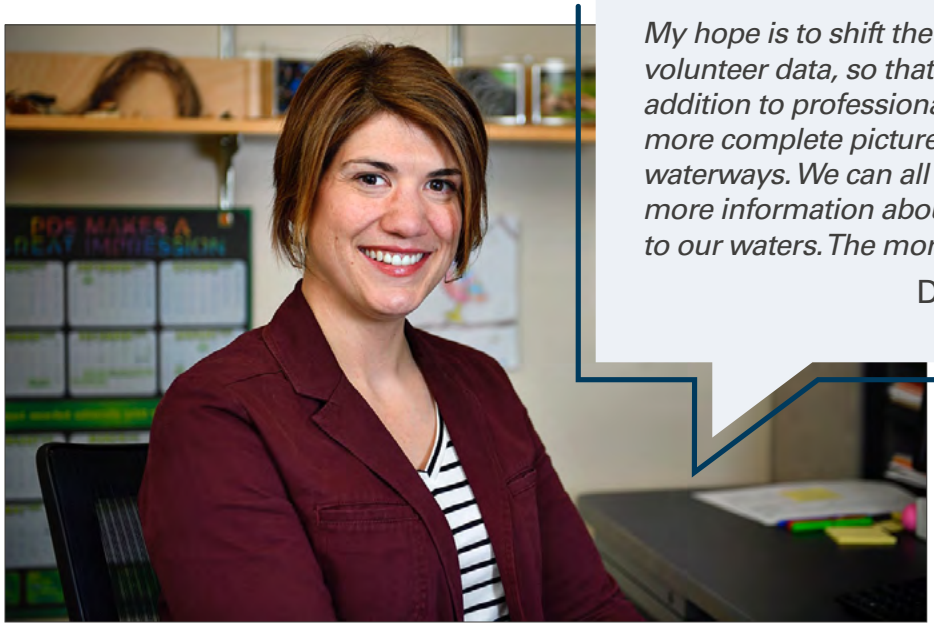
In a new paper published in the Public Library of Science, "Accuracy of long-term volunteer water monitoring data," a study led by University of North Texas Research Scientist and Meadows Center Fellow, Kelly Albus, compared large-scale water quality data from Texas Stream Team volunteers with professional data to assess the accuracy and applicability of volunteer data.

Results showed strong overall agreement in the data, an average of 81 percent, between volunteers and professionals for the entire statewide data set. According to Albus, these findings confirm that long-running volunteer programs can maintain excellent agreement with professional data over time.

Albus is hopeful that her study will open pathways for volunteer data to be used alongside professional data in expanded capacities, areas where it may be needed most. Volunteers are often first responders after disasters or are granted access to areas that regulatory officials may not, like private lands or businesses, which means these volunteer-generated datasets may provide new insights to researchers.

DIVE DEEPER

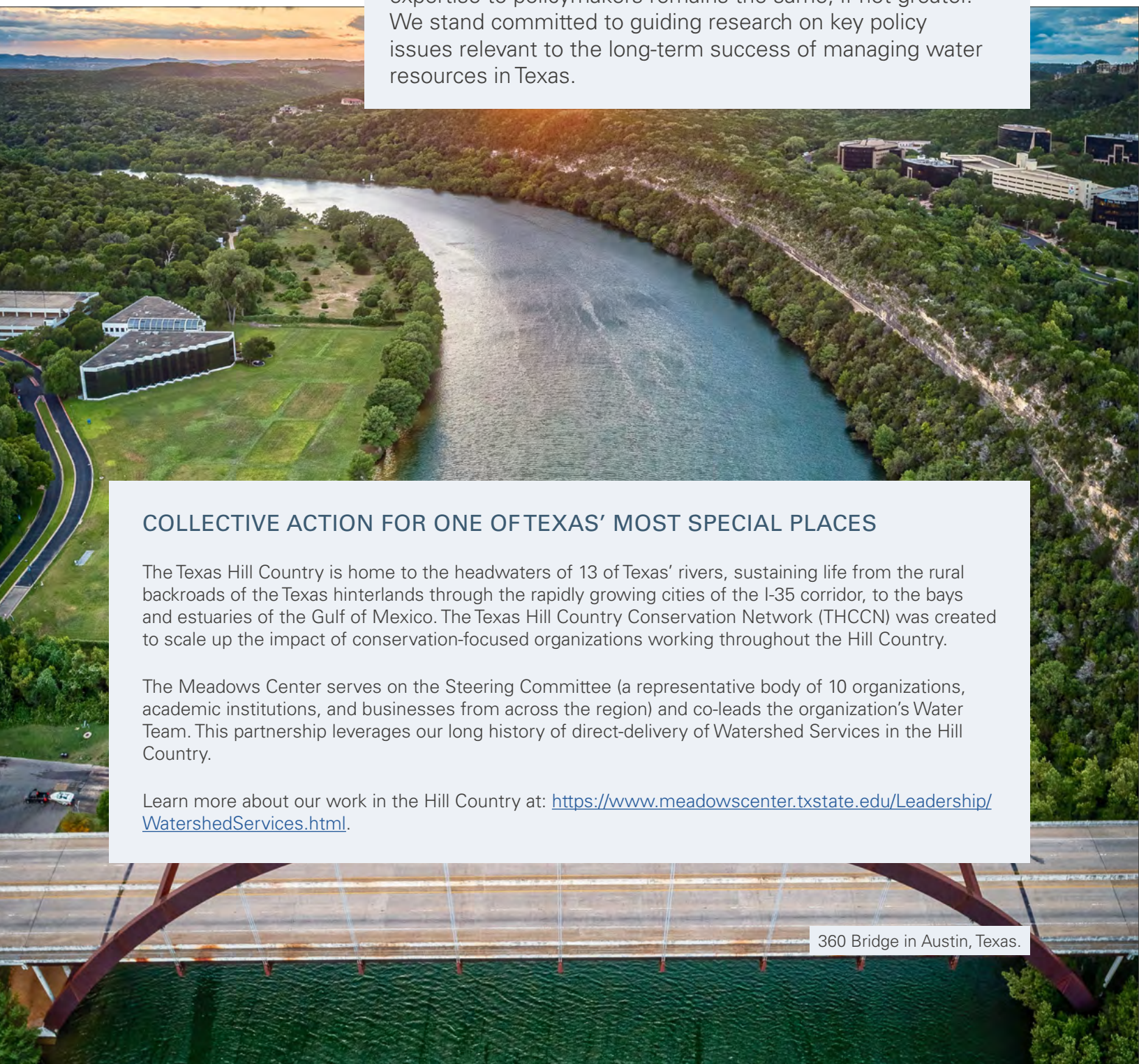
Read the full report from Dr. Albus online at: https://doi.org/10.1371/journal.pne.0227540.



> *My hope is to shift the view about volunteer data, so that it can be used in addition to professional data to provide a more complete picture of the state of our waterways. We can all work together to get more information about what's happening to our waters. The more data, the better.*
>
> DR. KELLY ALBUS

WATER POLICY

We believe that finding solutions to environmental problems involves exploring the 'who, how, and why' behind major developments in environmental science and policy. The environmental policy landscape in Texas is changing dramatically. Yet, the urgency and relevance of the Meadows Center's environmental research discoveries and expertise to policymakers remains the same, if not greater. We stand committed to guiding research on key policy issues relevant to the long-term success of managing water resources in Texas.



COLLECTIVE ACTION FOR ONE OF TEXAS' MOST SPECIAL PLACES

The Texas Hill Country is home to the headwaters of 13 of Texas' rivers, sustaining life from the rural backroads of the Texas hinterlands through the rapidly growing cities of the I-35 corridor, to the bays and estuaries of the Gulf of Mexico. The Texas Hill Country Conservation Network (THCCN) was created to scale up the impact of conservation-focused organizations working throughout the Hill Country.

The Meadows Center serves on the Steering Committee (a representative body of 10 organizations, academic institutions, and businesses from across the region) and co-leads the organization's Water Team. This partnership leverages our long history of direct-delivery of Watershed Services in the Hill Country.

Learn more about our work in the Hill Country at: https://www.meadowscenter.txstate.edu/Leadership/WatershedServices.html.

360 Bridge in Austin, Texas.

Creating a Home for Water Resource Economics Expertise in Texas

Economic information is one of the most critical factors in decision-making about the environment and natural resources. Looming over all issues related to the supply and demand for water is the absence of a true measure of its value.

The Meadows Center, in partnership with the Harte Research Institute for Gulf of Mexico Studies at Texas A&M-Corpus Christi, seeks to fill this gap with the creation of a new Mitchell L. Mathis Program for Environmental Water Economics to help Texans make better decisions about water.

The program will contribute to learning and research on the economics of water availability and quality and its impact on the economy.

The joint program will be led by Dr. David Yoskowitz, Senior Executive Director of the Harte Research Institute, who will serve as the inaugural scholar to support the program's development and application of new research methods toward water management and planning directed at resolution of water problems. The program will bring the next generation of socio-economic tools, education and outreach to address current water issues and future challenges, in a holistic manner.

Funding for the program was provided through generous contributions from The Meadows Foundation, the Cynthia and George Mitchell Foundation with matching funds from the Texas Research Incentive Program.

THE LEADER BEHIND THE NAME

The Mitchell L. Mathis Program for Environmental Water Economics is named after the distinguished environment and resource economist Mitchell L. Mathis. Mathis brought the important socio-economic aspects of water resource management to light with cutting edge environmental economics work. His work contributed important insights to the field of resource economics and the economic methodologies used to value natural resources and ecosystem services.

Learn about Mitch and the Environmental Economics Program online at: www.watereconomics.org/.

> *The solutions needed for the most pressing water challenges do not rest in one discipline. I am hopeful that by bringing together the energy harnessed in the academic, philanthropic and agency communities that Texas can continue to evolve its leadership in this area.*
>
> DR. DAVID YOSKOWITZ

Examining Regulatory Hurdles to Implementing One Water in Texas

One Water is a relatively new approach to managing water resources, but it is gaining momentum across the country. Many cities across the United States are thinking progressively and embracing the approach, however, the regulatory framework for managing water resources in many places, including Texas, was built under the traditional urban water model where water resources are segregated and rarely reused.

Traditionally, cities employ a "one-way use of water" approach, where freshwater from a reservoir or an aquifer is treated, conveyed to customers, used, then treated again, and ultimately discharged to a river. Increasingly, however, cities are recognizing that to develop sustainable and resilient water systems, they must treat all water within an urban environment as one resource and encourage the development of on-site, building-scale reuse systems, where buildings and communities become the water source. This holistic, often decentralized, approach to managing water is referred to as One Water.

Many of the laws and regulations that govern water use in the United States and Texas, however, were adopted under the traditional water management framework, where water management is centralized and regulations require that cities remove wastewater from an urban environment to protect public health.

The question is whether the traditional urban water model has created avoidable regulatory roadblocks to implementing One Water in the state. We teamed up with Vanessa Puig-Williams, Meadows Center Fellow and Director of the Environmental Defense Fund's Texas Water Program, to study the laws and regulations in Texas that govern water use. The findings showed that in order to facilitate development of One Water projects in Texas, the state's regulatory framework must transition to support decentralized strategies. The report suggested that policymakers need to tailor regulations to each water source and the specific end use as the types of treatment and the risk to public health varies with different source waters and the intended use.

DIVE DEEPER

Read the full report online at: https://gato-docs.its.txstate.edu/jcr:461305d9-e80e-47df-9b89-dc5b37c7193f.

WATER GRAND CHALLENGES

Leading the Conversation on Water Sustainability

In 2012, we launched a groundbreaking initiative known as Water Grand Challenges, bringing an influential and diverse group of thought leaders together to grapple with urgent issues outside the normal envelope of water policy makers.

The Water Grand Challenges Initiative continues to convene to find creative solutions for both short-term and long-term challenges that inhibit the sustainability of Texas' water resources for the future.

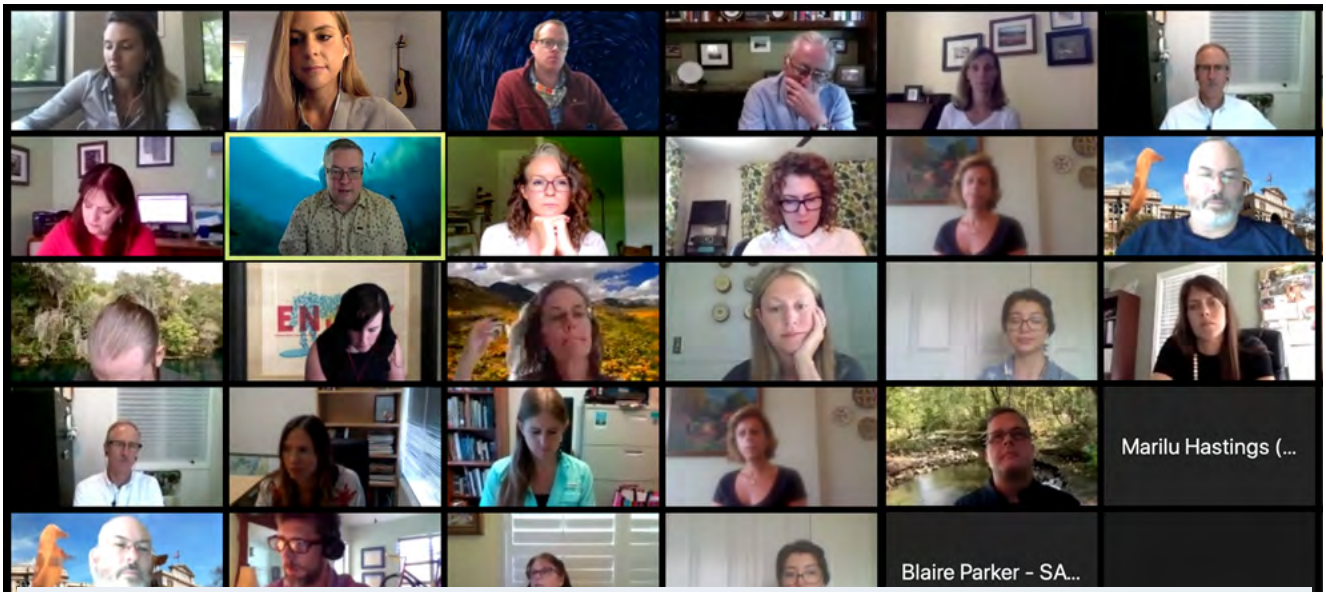
Last year, our efforts resulted in the identification of six Grand Challenges for water in Texas concerning (1) meeting supply needs, (2) protecting ecosystems, (3) achieving sustainability, (4) investing in infrastructure, (5) increasing public awareness and (6) protecting water quality.

This year, the working group also began looking at how climate change and racial equity and justice will influence our approach to these challenges.

With support from the Cynthia and George Mitchell Foundation, the Meadows Foundation and Nestlé Water North America, we developed theories of change for each challenge, identifying long-term goals and the near-term with quantifiable next steps to advance progress on each challenge.

Progress on long-term water challenge goals requires patience, strategy and a multi-faceted approach and science and analysis informs and supports policy change.

Our strategy is to develop independent and unbiased foundational white papers that clearly explain the science and policy behind the water grand challenges. These foundational white papers then become the tools for educating the public and policymakers and springboards for discussing water policy in the state.

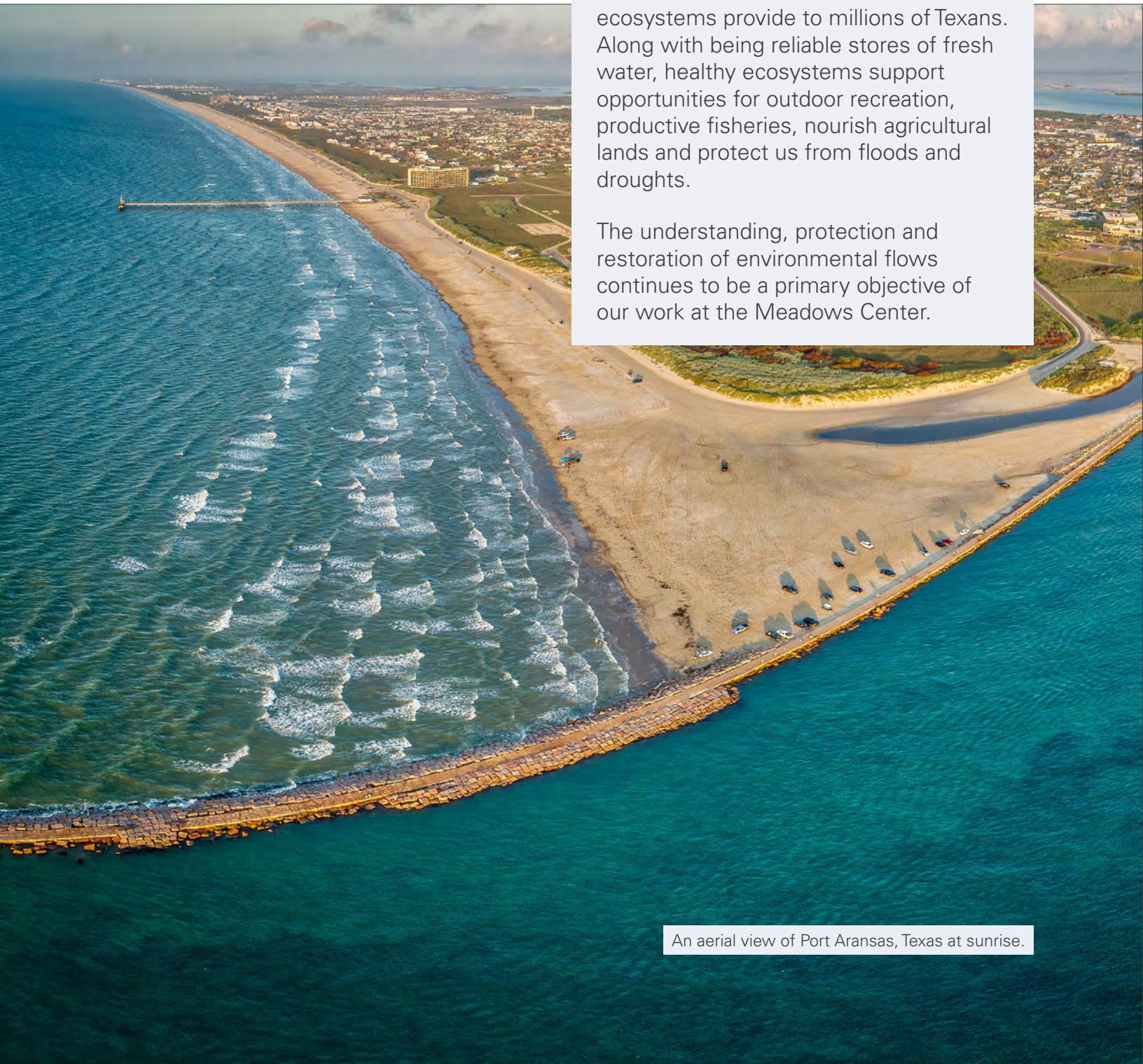


Despite setbacks brought on by COVID-19, our dedicated working group members convened virtually in Summer 2020 to continue their progress on the Water Grand Challenges Initiative.

ENVIRONMENTAL FLOWS

Rivers, lakes and wetlands support extraordinary diversity. However, water pumping, over-allocation and pollution are leading to freshwater biodiversity losses across the state. Accompanying these declines are severe losses in the services that freshwater ecosystems provide to millions of Texans. Along with being reliable stores of fresh water, healthy ecosystems support opportunities for outdoor recreation, productive fisheries, nourish agricultural lands and protect us from floods and droughts.

The understanding, protection and restoration of environmental flows continues to be a primary objective of our work at the Meadows Center.



An aerial view of Port Aransas, Texas at sunrise.

Application Excellence in Environmental Flows, Taking it to the XStream

Fall colors and Lake Fork along the Lick Creek Road near McCall, Idaho, in the Payette National Forest. Photo courtesy of the U.S. Forest Service, Flickr.

The work of the Meadows Endowed Professor for Environmental Flows, Dr. Thom Hardy, incorporates innovative environmental flows research and management that integrates ecological hydrological, environmental, and socio-economic practices. An example of how this professorship continues to support the national and international reputation of the Meadows Center as a leader in research and application excellence in environmental flows is our recent partnership with the U.S. Forest Service's National Stream and Aquatic Ecology Center.

In support of the National Stream and Aquatic Ecology Center's mission to develop reliable, effective, low-cost, time-efficient, and scientifically sound technologies for acquiring data or modeling environmental processes that allows resource specialists working on national forests to be more effective and efficient at performing analyses and interpreting data, we partnered to modernize hydraulic analysis software originally developed in 1992 (WinXSPro).

The resulting new cross-section hydraulic analysis software system (XStream) expands and improves the original capabilities and includes new analysis tools such as particle-size analysis, determining resistance equation suitability, monitoring channel changes over time, and comparing channel cross section and particle-size changes over time.

With a planned release for December 2020, XStream will allow Forest Service resource specialists to be more effective and efficient at organizing complex hydraulic and channel data, modeling, and interpreting channel cross section flow hydraulics, analyzing channel-bed material particle-size distributions, and monitoring channel changes over time.

The Forest Service and Dr. Hardy are already collaborating on additional tools to expand the capability of XStream even further, including designing channels for stream restoration projects, evaluating the mobility and stability of particles, and assessing water alteration impacts to aquatic habitat, riparian vegetation, and channel form.

Can Fort Stockton Reclaim its Title as Spring City of Texas?

Historic postcard images of Comache Springs in Fort Stockton, Texas.

Comanche Springs was once a 30 million gallon-a-day oasis located in the South Texas town of Fort Stockton, on the edge of the Chihuahuan Desert. This freshwater treasure provided a water supply to native populations, early settlers, and down-spring irrigators and supported a small but important desert ecosystem through the 1940s.

Yet, the springs were not immune to the effects of a growing state. Once one of the six largest springs in Texas, Comanche Springs quit flowing in the 1960s due to significant groundwater pumping upstream. Over the last decade, however, the once-quiet springs have begun flowing again in the late winter months, when the aquifer has rebounded from summer irrigation pumping – leading some people to ask, "Could Comanche Springs be permanently restored?".

The Meadows Center and Texas Water Trade teamed up to develop the first roadmap to restoring spring flows. While there is still more work and analyses to be done, the study recommends several hydrogeology, water market and policy strategies that can be achieved in the near-future to restore flow to Comanche Springs as well as funding sources to implement the strategies.

1. To bring back year-round flow, the study estimates that the daily flow to Comanche Springs must remain above 10 cubic feet per second and have an average annual springflow of 20 cubic feet per second to meet health and human safety and species requirements. To achieve the recommended springflow, pumping should be between 26,000 to 35,000 acre-feet per year to meet a daily minimum flow of 10 cubic feet per second.
2. Voluntary, market-based cooperation of groundwater owners in the Comanche Springs' contributing and recharge zones as a viable path forward to reduce groundwater pumping in the Edwards-Trinity Aquifer and, therefore, restore perennial flows.

Following the study, Texas Water Trade has raised almost $1.5 million in funds to establish a pilot market in Pecos County to incentivize on-farm water conservation and the Middle Pecos Groundwater Conservation District, the agency charged with managing and protecting groundwater in Pecos County, is currently improving the groundwater model.

The research was funded by the Fort Stockton Visitors Bureau, the National Fish and Wildlife Foundation and the Cynthia and George Mitchell Foundation.

DIVE DEEPER

Get the details about our work on Commanche Springs at: https://bit.ly/3miAepm.

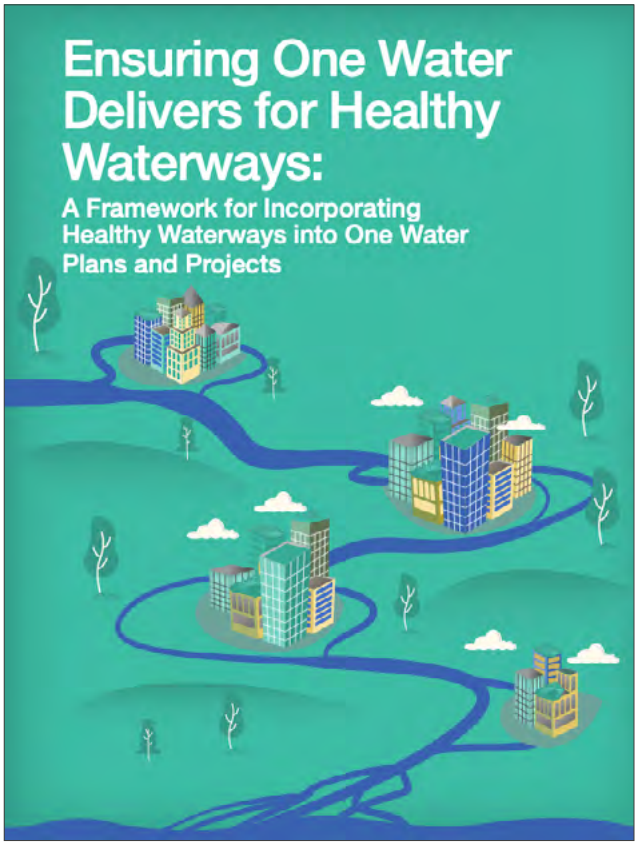
Providing a Planning Framework to Support One Water and Healthy Ecosystems

The One Water approach offers tremendous opportunities for improving how water is managed within communities. Using water efficiently and taking advantage of diverse, locally available water supplies are important goals. It is also important that the approach support communities in assessing how their water use affects the health of waterways, both upstream, where water is sourced, and downstream, where other communities and aquatic resources may be impacted.

Local water capture and reuse technologies are some of the most successful innovations featured in One Water plans and projects. However, they may also pose an inadvertent threat to river flows as maximum use of these sources can starve natural systems of needed flows and potentially reduce water available to communities downstream.

With funding from The George and Cynthia Mitchell Foundation, a research study conducted by Carrie Thompson, our Director of Operations, and leaders at the National Wildlife Federation's Texas Living Waters Project, and the Pacific Institute presents a planning framework to assist communities in implementing the One Water approach in a way that optimizes water supplies to cities and keeps water flowing for the creeks, rivers and bays that support healthy fish, wildlife and their habitats.

The principles set out in Ensuring One Water Delivers for Healthy Waterways are important to apply to any city's One Water efforts, but advancing this work nationally will require developing a community of practice built on successful implementation in myriad settings and at multiple scales. With climate and population growth putting increased pressure on water supplies, we can no longer afford to address urban water-supply in a vacuum, separate from water quality, healthy rivers and springs, biodiversity, and other features of a sound environment. They are all connected, and One Water gives us a playbook to address these issues collectively.



DIVE DEEPER

Read the full report at: https://texaslivingwaters.org/deeper-dive/healthywaterways/.

BEYOND SENATE BILL 3

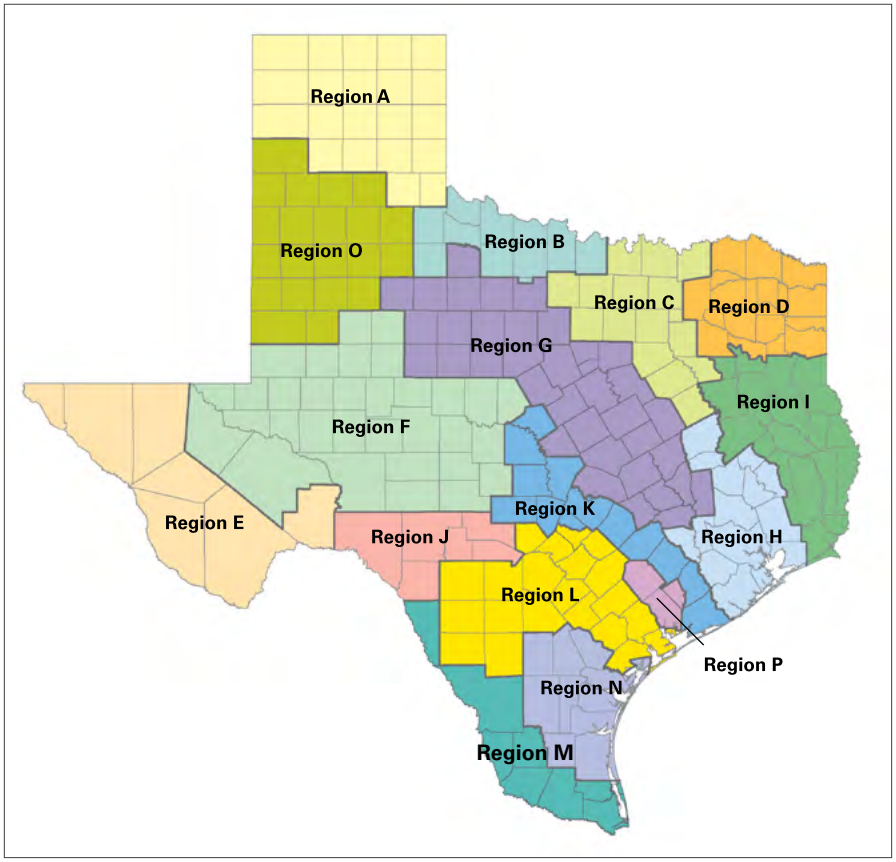
How to Achieve Environmental Flows in Texas

In 2007, the 80th Texas Legislature enacted Senate Bill 3 on the last day of session, the third far-reaching piece of water legislation after Senate Bill 1 passed in 1997 and Senate Bill 2 passed in 2001. Collectively, these bills changed how Texas plans for future water needs, regulates groundwater, promotes conservation, studies the need for environmental flows balanced with population needs and establishes environmental flow standards for Texas' rivers, bays and estuaries.

Senate Bill 3 created a process through which scientists, stakeholders, and the Texas Commission on Environmental Quality set environmental flow standards. Over 12 years have passed since Senate Bill 3 became law, allowing us to consider the efficacy of the enabling legislation and the resulting rules. In short, identifying and securing water for the environment has been difficult due to little, if any, unallocated water in the state's river basins and limitations in Senate Bill 3 and the Texas Water Code.

In a new study, Meadows Center Executive Director, Dr. Robert E. Mace; Meadows Center Fellow and Principal of RSAH20, LLC, Carlos Rubinstein; and Associate of RSAH2O, Curtis Seaton; identify seven options for stakeholders and the state to consider to increase the protection of environmental flows while respecting private property rights.

The report will be published by the Texas Water Journal later this year. If implemented, these options could allow Texas and Texans to more closely achieve the desired outcomes originally hoped for from Senate Bill 3.



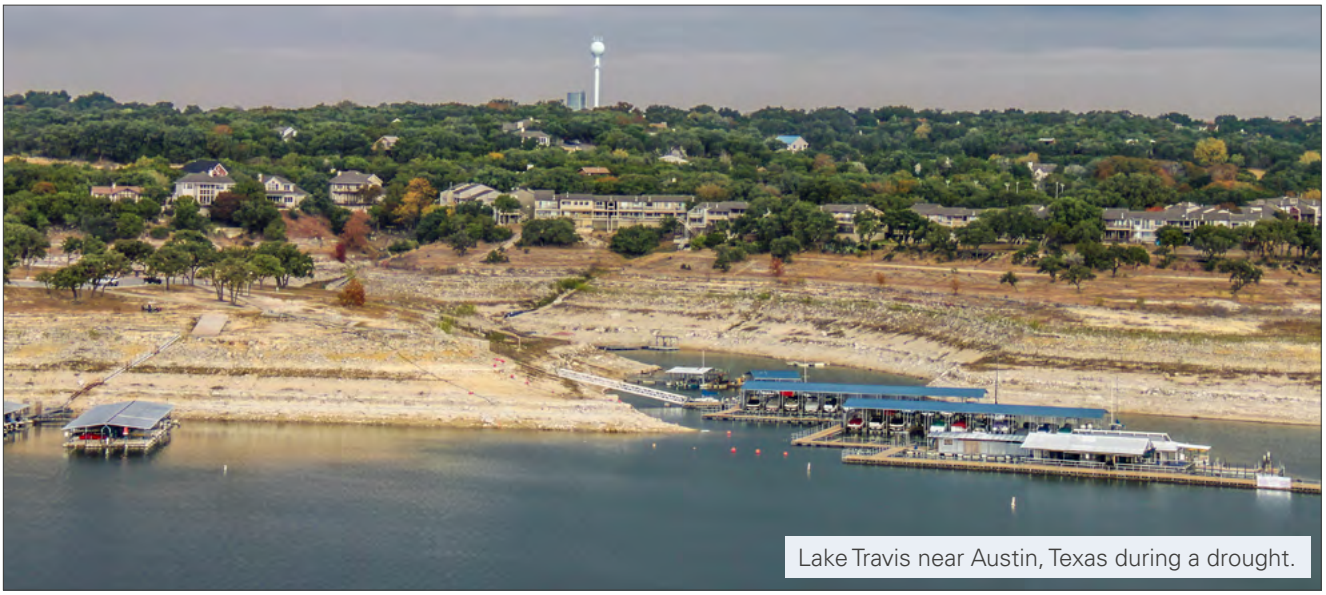
Did you know? Texas has 16 regional water planning groups tasked with developing 50-year water plans that consider all of the water use needs within their regions.

CLIMATE CHANGE

Extreme weather is here. The question is, what are we going to do about it?

At the Meadows Center, we are searching for answers and leading the conversation. Many of our goals for the next coming years focus on leading research to find solutions to the complex challenges posed by climate change.

What Do Researchers and Stakeholders Need to Know to Plan for Future Extremes?



Lake Travis near Austin, Texas during a drought.

Texans need to start making plans for a future that is different from what the state has faced in recorded history, which presents a unique challenge to long-range water planning for water managers and stakeholders, as well as unprecedented data needs. What information does the existing state of science provide that is relevant to water planning? What new information is critical for water planning? How can the gap between the available and needed information be closed?

Our Executive Director, Dr. Robert Mace, co-authored a paper, "Unprecedented Drought Challenges for Texas Water Resources in a Changing Climate: What Do Researchers and Stakeholders Need to Know?," with experts from several academic institutions to confront these questions by analyzing climate factors and drought projections for Texas to assess how the state's climate projections can best serve water stakeholder needs.

Findings indicate that climate models are robust in projecting drying of summer-season soil moisture and decreasing reservoir supplies for both the eastern and western portions of Texas during the 21st century. Projections also show drier conditions during the latter half of the 21st century than even the most arid centuries of the last 1,000 years.

To illustrate how accounting for climate and drought projections in long-range water planning may increase water resiliency, the paper presents case studies of four key stakeholder groups, agricultural producers, large surface water suppliers, small groundwater management districts and regional water planning districts. Researchers found that while stakeholders value the quantitative capability of climate model outputs, more specific climate-related information better supports resilience planning across multiple stakeholder groups. New suites of tools could provide necessary capacity for both short- and long-term, stakeholder-specific adaptive planning.

The paper marks an important first step in an ongoing multi-year project to facilitate knowledge coproduction among scientists and stakeholders.

DIVE DEEPER

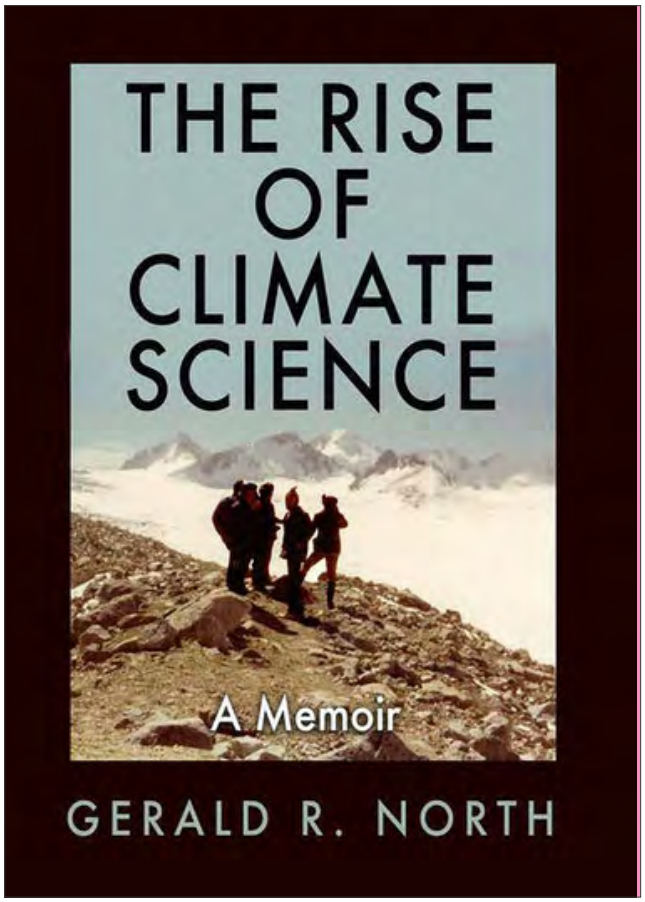
Read the full report at: https://doi.org/10.1029/2020EF001552/.

The Rise of Climate Science

The Rise of Climate Science is the newest addition to our Kathie and Ed Cox Jr. Conservation Leadership Book Series. In a career spanning four decades, the author, Gerald R. North, contributed groundbreaking research that continues to shape the modern field of climate science. However, the route he has taken was full of surprising twists and turns.

North recounts in detail his life in the vanguard of modern climate science. He offers an insider look at the academic research and government initiatives around global warming and what that means for the planet. He includes stories of conversations with top Soviet climate scientists at the height of the Cold War in the late 1970s—complete with clandestine electronic surveillance. He also describes the experience of testifying before Congress and engaging in public exchanges with those who doubted the reality of the phenomenon his research field described.

Climatology today has advanced into a mature phase. This book is an important contribution to understanding its development in the twentieth century and adds a distinctly human face and sensibility to the ongoing societal conversation around climate change and its implications for our future.



EXPLORE MORE TITLES FROM OUR BOOK SERIES

Since 2012, the Meadows Center has sponsored two book series focused on conservation leadership and river stewardship that serve as trusted sources of information on water and environmental topics. Each book includes a foreword written by our Founder, Andrew Sansom, and is published by Texas A&M University Press.

With a collection of 34 publications – from the Texas Water Atlas to Canoeing and Kayaking Houston Waterways – there is something for everyone to discover. So, the next time you're scouring Amazon for a book to add to your cart, make sure to take a whirl through our book list first!

Learn more online at: https://www.meadowscenter.txstate.edu/Publications/Books.html.

A SNEAK PEAK AT FUTURE RESEARCH INITIATIVES

The Climate is Changing….Why Aren't We?

Texas is in denial. From sweltering droughts to devastating floods, the impacts of climate change are becoming bigger and badder in our super-sized state. Despite conclusive evidence that temperatures are rising and that our weather is becoming more unpredictable, we, as a state, have not even looked at the issue, let alone planned for or responded to it.

We are bold and ambitious in seeking to turn Texas toward preparing for climate change where, at present, we are not. Our multidisciplinary approach of fusing the science with education, the public, policy, and decision makers ensures that the science is used to advance the general understanding of what climate change means for water in Texas and what Texas can do to address those impacts.

Our research and leadership will benefit all Texans because climate touches everyone and crosscuts all of the solution categories since climate and water is intertwined with the environment, health outcomes, and boosting the workforce.

DIVE DEEPER

We shared our vision this year in hopes of securing an historic prize to bring our vision for Texas to life. See our entry for the Lyda Hill Lone Star Prize competition here: https://youtu.be/4pBg1fY9L7k.

OPERATIONS

Stewarding the Meadows Center for a New Decade

The Meadows Center's staff, faculty and students represent a small but mighty team. You might be surprised to learn that nearly 90 percent of our funding is provided by federal and state grants, professional service contracts, donor support, and the revenues from our glass-bottom boat rides.

The COVID-19 Pandemic highlighted the urgency for organizational resiliency after we were forced to close our doors to the public for a six-month period forgoing the ticket sales that support our educational programming. As our organization grows in size and reach, we are working to strengthen our financial infrastructure and our internal systems to enable us to scale up our impact.

2020 Operations Highlights

The Meadows Center Excellence Fund

The Excellence Fund was established to accept gifts to further the mission of the Meadows Center, including supporting faculty and staff development and program and student support.

The administrative functions of the Meadows Center are currently supported by cobbling funding together from numerous grants and contracts, making it difficult to ensure basic center operations – especially during periods of unforeseen challenges. Securing reliable funding for core administrative activities is key to enabling us to achieve our research and educational goals and to enhance our reach. With so much of our funding tied to grants that support specific projects, this fund is one of the only tools we have that allow us to direct funds to our most urgent needs. We rely on this savings account to see us through "rainy days" – and pandemics!

In Fiscal Year 2020, we received generous donations, ranging from a monthly donation of $1 per month to an annual family donation of $50,000. The impact of these unrestricted gifts cannot be overstated, and we are grateful for each dollar received.

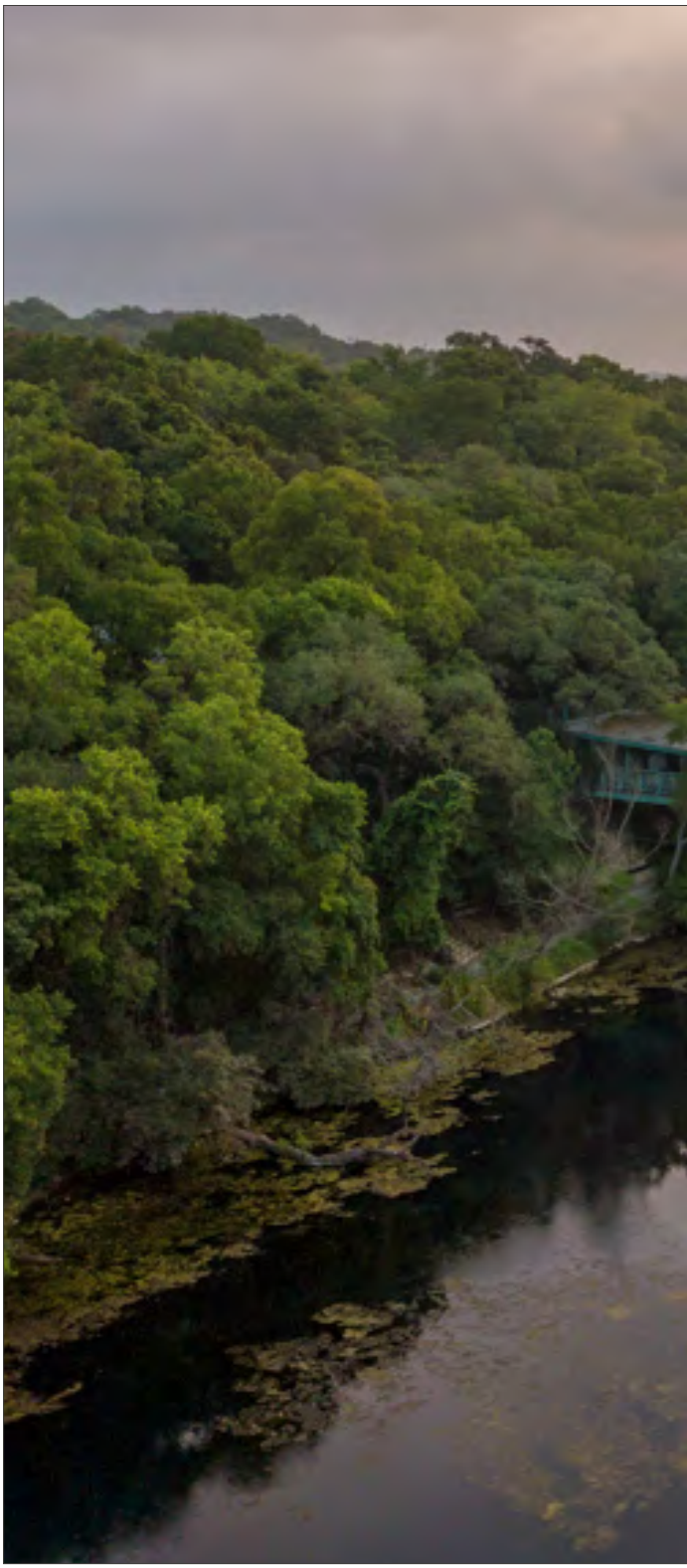
Donate online at: http://Donate.MeadowsWater.org.

Diversity, Equity, Inclusion

We are very proud of the diversity of our staff, but we recognize that we can do more to ensure equity and inclusion across our teams and partner networks. In the past year, we formalized our position on equity, diversity, and inclusion and developed a plan with clear metrics on what we will do to advance our position in this area. It's critical that we not only say and believe the words in our statement, but act on them.

Centering the Meadows Center in Spring Lake Hall

For the first time in our history, we were able to bring the entire Meadows Center team home to historic Spring Lake Hall. The relocation of our six Watershed Services staff from a building across campus and 21 staff working at Spring Lake is the first step in achieving our vision for the Meadows Center's Spring Lake campus – a sacred place where people connect with nature and research impacts outcomes for Texas and beyond.



WHY I GIVE...

We are inspired by and deeply grateful to The Meadows Center for Water and the Environment for their thoughtful and enthusiastic work to protect and understand our most precious resource, water.

We love their programs, such as the Texas Stream Team that educates and engages citizen scientists. Water is life! Water conservation, protection and wise stewardship is ALL of our responsibility. Thank you, Meadows Center!

PEGGY & MATT WINKLER

THE HEROES BEHIND OUR IMPACT

OUR TEAM


Robert Mace, Ph.D.
Executive Director

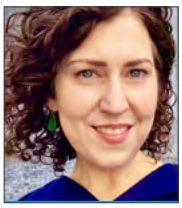

Andrew Sansom, Ph.D.
Founder

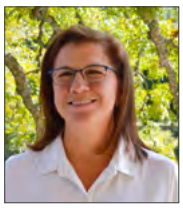

Thom Hardy, Ph.D.
Chief Science Officer


Timothy Loftus, Ph.D.
Water Resource Strategist


Rob Dussler, Ph.D.
Chief Education Officer

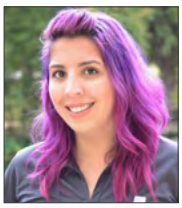

Nick Dornak, M.S.
Director of Watershed Services


Carrie Thompson, M.P.A.
Director of Operations


Sandra Arismendez, Ph.D.
Water Quality Monitoring Coordinator


Claudia Campos, B.S.
Admin. Coordinator


Leah Cuddeback
Program & Outreach Specialist


Synthia De Hoyos, B.A.
Procurement Specialist


Collin Garoutte
Research Associate


Sharla Gutierrez,
Business Manager


Susan Hankins, B.S.
Admin & Event Coordinator


Tom Heard, M.S.
Research Associate & Fish Biologist


Caleb Henderson, B.A.
Dive Coordinator


Anna Huff, B.S.
Communications Manager


Meagan Lobban, B.S.
Education Manager


Sam Massey
Glass-Bottom Boats Manager


Erica Jane Meier, M.S.
Admin. Assistant II


Aspen Navarro, M.S.
Program Coordinator


Laura Parchman, B.A.
GIS & Data Management Associate


Christopher Riggins, B.S.
Research Associate


Ryan Spencer, M.A.Geo
Research Coordinator


Miranda Wait, B.S.
Deputy Director of Spring Lake Operations


Jenna Walker, M.A.Geo
Deputy Director of Watershed Services


Aaron Wallendorf, B.S.
Lake Manager

STUDENTS, INTERNS & GRADUATE RESEARCH ASSISTANTS

Andrew Adams, Meadows Graduate Fellowship & Research Assistantship

Janai Adams, Admin Assistant

Isabel Araiza, Admin Assistant

Eryl Austin-Bingamon, Research Assistant

Jedavi Avila, Environmental Interpreter

Carson Barr, Research Assistant

Gracie Barret, Environmental Interpreter

Caitriona Bathea, Spring Lake Admin Assistant

Amanda Beck, Assistant Educational Tour Coordinator

Allison Bigler, Shift Supervisor

Shelby Chester, Environmental Interpreter

Adam Clair, Environmental Interpreter

Andrew Cook. Environmental Interpreter

Giselle Coronado, Social Media Intern

Cristian Cortez, Habitat Field Crew Student Worker

Christopher Crain, Aquarium & Shift Supervisor

Kaitlyn Eudy, Environmental Interpreter

Shelby Fisher, Habitat Field Crew Student Worker

Susan Fuentes, Admin Assistant

Nohemi Galaviz, Admin Assistant

Nicolle Garza. Visitor's Center Assistant

Richard Hall, Environmental Interpreter

Devin Hemker, Environmental Interpreter

Heather Hinchliffe, Habitat Field Crew Student Worker

Priscilla Inostroza-Hernandez, Dive Program Assistant

Martha Izaguirre, Retail Assistant

Anna Keyser, Visitors Center & Outreach Assistant

Clayton Klingberg, Shift Manager & Environmental Interpreter

Olivia LaGrone, Visitor's Center Assistant

Logan Leedham, Environmental Interpreter

Angel Lopez, Communications Assistant

Claudia Loera, Environmental Interpreter

Jesslyn Malnar, Retail Assistant

Christel Massaad, Environmental Interpreter

Gabriela Molina, Environmental Interpreter

Roberto Molina, Aquarium Technician

Jaime Murata, Research Assistant

Francisco Paredes, Environmental Interpreter

Liana Quiñones, Environment and Public Policy Intern

Morgan Richmond, Community Outreach Assistant

Annabelle Rodriguez, Community Outreach and Education Assistant

Yeyetzi Rodriguez, Research Assistant

Kevin Rubio, Habitat Field Crew Student Worker

Stephanie Rubio, Admin Assistant

Mario Amaro Salazar, Environmental Interpreter

Aliza Salinas, Habitat Field Crew Student Worker

Ethan Samelson, Environmental Interpreter

Madison Sanchez, Retail Assistant

Allyson Schlandt, B.S., Research Assistant

Jonnalys Lorraine Soto Arroyo, Administrative Assistant

Ty Stonecipher, Research Assistant

James Taylor, Environmental Interpreter

Jose Torres, Texas Stream Team Student Worker

Diego Torres-Martinez, Habitat Field Crew Student Worker

Faith Tund, Admin Assistant

Roberto Vasquez, Research Assistant

Christian Villarreal, Environmental Interpreter

Kimberly Yax, Educational Tour Office Assistant

Daisha Young, Administrative Assistant

MEADOWS CENTER FELLOWS

Kelly Albus, Ph.D.
Adjunct Professor, Biology For Educators - University of North Texas

Mike Abbott, Ph.D.
Fellow of the Meadows Center

James Dodson, M.P.A
Principal/Consultant, GroundswellTX

Mario Garza, Ph.D.
Principal Founder, Indigenous Cultures Institute

Ronald T. Green, Ph.D., P.G.
Technical Advisor, Earth Sciences Section - Southwest Research Institute

Frederick 'Fritz' Hanselmann, Ph.D., M.P.A.
Lecturer and Director, Underwater Archaeology and Exploration Program - University of Miami

Tom Hegemier, P.E., D.WRE, C.F.M.
Senior Project Manager, Doucet and Associates

Chris Horrell, Ph.D.
Research Associate

Sharlene Leurig
Chief Executive Officer, Texas Water Trade

Meredith Miller, M.S.
Director, William R. Sinkin Eco Centro

Vanessa Puig-Williams
Director, Texas Water Program - Environmental Defense Fund

Warren Pulich, Jr., Ph.D.
Coastal Ecologist

Walter Rast, Ph.D.
Director, International Watershed Studies

Rudolph Rosen, Ph.D.
Director, Institute for Water Resources Science and Technology

Carlos Rubinstein
Principal, RSAH2O, LLC

Shane Townsend, M.U.R.P.
Foreign Service Officer, Office of Agricultural Affairs, U.S. Embassy – Nairobi

Todd Votteler, Ph.D.
President, Collaborative Water Resolution, LLC

Douglas A. Wierman, P.G.
President Blue Creek Consulting, LLC

Introducing...the Water Wizards!

In 2019, we established the Water Wizards group to bolster our work with multi-disciplinary expertise across campus and to catalyze research on water and the environment. Our group of faculty members have expertise in a wide range of topics, such as hydrogeology, ecosystems, biology, environmental flows, water conservation, water quality, economics, and policy.

WATER WIZARDS

Christopher Brown, Ph.D.
Associate Professor, Department of Political Science

Joni Charles, Ph.D.
Associate Professor, Department of Finance and Economics

Richard Earl, Ph.D.
Professor, Department of Geography

Sangchul S. Hwang, Ph.D., P.E.
Associate Professor, Ingram School of Engineering

Keisuke Ikehata, Ph.D.
Assistant Professor, Ingram School of Engineering

Jason Julian, Ph.D.
Professor & Associate Chair, Department of Geography

Kimberly Meitzen, Ph.D.
Associate Professor, Department of Geography

Ken Mix, Ph.D.
Associate Professor, Department of Agricultural Sciences

Benjamin Schwartz, Ph.D.
"The Original Water Wizard"
Associate Professor, Department of Biology
Director, Edwards Aquifer Research and Data Center

THANK YOU TO OUR SPONSORS!

The Meadows Center gratefully acknowledges the gifts made by the following corporations, foundations, individuals and organizations in Fiscal Year 2020 (listed in alphabetical order). On behalf of our staff and students, thank you for strengthening our work.

FOUNDATIONS & CORPORATE DONORS

Burdine Johnson Foundation

The Cynthia and George Mitchell Foundation

Fifth Generation Tito's Handmade Vodka

H-E-B

Jacobs Well Daughters of the American Revolution

James A. Buddy Davidson Charitable Foundation

Micaelan and Graham Davis Fund

Nestlé Waters North America

San Marcos Lion's Club

Shield-Ayers Foundation

Trull Foundation

Way Family Foundation

Wells Fargo & Company

Wells Fargo Community Support Employee Giving

Winkler Family Foundation

INDIVIDUALS

Cynthia Agold
Gary Bailey
Richard Baish
Jimmie Batenhorst
Jennifer Beck
Allison Bigler
Brad Breed
Barbara Breier
Joe Brooks
Laura Butcher
Victoria Calder
Uriel Carpenter
Matthew Carson
Mary Cavitt
Hunter Close
Michael Cooper
Alexander Coss
Leah Cuddeback
Melody Cuny
Audrey Decker
Matthew DeFord
Matthew Dobbs
Darcy Downey
Marcus Dussler III
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Deanna Frazee
Bianca Galvan
Traci Garren
Nicholas Gravois
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Dennis Gutierrez III
Susan Hankins
Mark Hankins
Laura Hernandez
Meagan Hernandez
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Melissa Hyatt
Kyle Joseph
Brent Judd
Kelly King-Green
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Robert Mace
Tom Madden
John McBride
Kevin McCarty
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Joshua Thomas
Rebecca Torres
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Roger Wallace
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John Weaver
James Weber
Jamie Weir
Jesse Womack
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WHY I GIVE...

The Meadows Center is special, in my opinion, because of the passion of the people who run it. I am always impressed with their dedication to the environment and especially to the beautiful San Marcos Springs. H-E-B strongly supports environmental conservation and education because there is only one Earth, we need to protect her and raise that next generation environmentalists, scientists, and conservationists.

The Meadows Center does a fantastic job of reaching out to schools and engaging young minds from all walks of life. It is so important that we reach everyone we can to plant the seeds for the future.

Anyone that cares deeply for our natural world and is looking for good stewards of their donation, should look here. The staff is very mindful of your funding and is happy to show you exactly what you are supporting. Just ask the thousands of children who have been able to stretch their young minds and take a dip in caring for the world!

ROSEMARY MELODY & RICHARD MCDONALD

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