



SEEKING SOLUTIONS

for the people & places of Texas



The Texas Living Waters Project is a collaboration of conservation groups working to ensure Texas has the water it needs for thriving communities and abundant fish and wildlife.



The Nature Conservancy



hill country alliance



GALVESTON BAY
FOUNDATION

DEAR FRIENDS AND SUPPORTERS OF THE TEXAS LIVING WATERS PROJECT,



It seems that every year brings new water challenges to Texas. 2022 was quietly one of the state's driest years in the past century. Counties such as Bexar and Erath received their lowest rainfall on record. Inflows to the Highland Lakes dipped far below even recent historical averages. Jacob's Well ceased flowing. It was a year that reminded us how much we both need and love freshwater in Texas.

While 2022 brought drought, it also brought a wave of new approaches, new investment, and new energy in the Texas water community. The Texas Living Waters Project is leading that wave and it's why we chose to center our annual report on the theme of solutions. As we all hope for drought relief in the form of a shift from La Niña to El Niño conditions, it's not only clear that more has to be done to ensure the future resiliency of our communities and unique natural heritage, it's also clear we have some key solutions at hand. I am proud of the work our team is doing to advance these solutions across Texas.

As part of this growing effort, we welcomed The Nature Conservancy in Texas to the Texas Living Waters family this summer. The Nature Conservancy is home to widely-respected water policy and natural resource professionals and we are so happy to be working with them on the important water issues we are facing in our state.

The National Wildlife Federation, the Lone Star Chapter of the Sierra Club, The Nature Conservancy in Texas, and our regional partners Hill Country Alliance and Galveston Bay Foundation all bring a wealth of collective capacity and expertise to our advocacy efforts. Among our many notable accomplishments this year, we produced, for the first time in the history of our partnership, a robust and public-facing water agenda for the Legislature. We are committed to educating legislators about both pressing water issues and the many emerging opportunities to address them.

As you will see in the following pages, Texas Living Waters is focused on urban water management, water for wildlife and climate resilience. Flowing through each of these areas is our team's commitment to addressing social inequities tied to water. Flood risk, water access, and water pollution remain profoundly unequal burdens in Texas. From our efforts to ensure access to resilient and affordable water supplies for everyone in our communities to our equity-focused engagement with Texas' Regional Flood Planning Groups, we continue to orient our work towards addressing the state's persistent water injustices. Each of these project areas are intricately connected and we cannot have success in one area without the other. Water, ecosystems, AND communities are forever connected.

While we are full of energy and optimism for the future of our work, I want to take a moment to acknowledge and appreciate the contributions that Ken Kramer has made to the Texas Living Waters Project and to water resource management in Texas for many decades. He was one of the founders of this partnership and his deep well of knowledge and passion for this topic has changed the course of water management in Texas for the good. He is stepping back from his role and we wish him the very best.

Please join me in congratulating the Texas Living Waters team on a job well done in 2022. I look forward to working with the best water team in Texas in 2023.

A handwritten signature in black ink, appearing to read 'Jennifer Walker'.

Jennifer Walker
Director, Texas Coast and Water Program
National Wildlife Federation

THE EXPANDING LIVING WATERS TEAM



National Wildlife Federation Texas Coast and Water Program

A founding member of the Texas Living Waters Project, National Wildlife Federation is the United States' largest private, nonprofit conservation organization. NWF has worked on Texas water and coastal issues for over two decades.



JENNIFER WALKER

Director,
Texas Coast and Water Program
National Wildlife Federation



AMANDA FULLER

Executive Director,
South Central Regional Center
National Wildlife Federation



ARSUM PATHAK, PHD

Adaptation and Coastal
Resilience Specialist,
Texas Coast and Water Program
National Wildlife Federation



DANIELLE GOSHEN

Water Policy and
Outreach Specialist,
National Wildlife Federation



JONATHAN SEEFELDT, PHD

Senior Communications Manager,
Texas Coast and Water Program
National Wildlife Federation



JORGE LOSOYA

One Water & Water Equity Fellow,
Texas Coast and Water Program
National Wildlife Federation

*Completed his fellowship in June 2022



The newest member of the Texas Living Waters Project, The Nature Conservancy in Texas has protected land and water in the state since 1964. To date, we've conserved nearly one million acres of land and more than 200 miles of rivers and streams.



SUZANNE SCOTT

State Director
The Nature Conservancy in Texas



KYLE GARMANY

Hydrologist,
The Nature Conservancy in Texas



RYAN SMITH

Freshwater Ecologist,
The Nature Conservancy in Texas



HILLARY LILLY

Director Of External Affairs,
The Nature Conservancy in Texas



SIERRA CLUB LONE STAR CHAPTER

A founding member of the Texas Living Waters Project, the Lone Star Chapter of the Sierra Club is the oldest grassroots environmental organization in Texas.



CYRUS REED, PHD

Conservation Director,
Sierra Club, Lone Star Chapter



ALEX ORTIZ

Water Resources Specialist,
Sierra Club, Lone Star Chapter



hill country alliance

The mission of the Hill Country Alliance is to bring together a diverse coalition of partners to preserve the open spaces, starry night skies, clean and abundant waters, and unique character of the Texas Hill Country.



KATHERINE ROMANS

Executive Director,
Hill Country Alliance



MARISA BRUNO

Water Program Manager,
Hill Country Alliance



GALVESTON BAY FOUNDATION

A longtime member of the Texas Living Waters Project, Galveston Bay Foundation is a conservation nonprofit that has served as guardian of Galveston Bay since 1987. Our mission is to preserve and enhance Galveston Bay as a healthy and productive place for generations to come.



BOB STOKES

President,
Galveston Bay Foundation



MIKAYLA PANARIELLO

Government Affairs Manager,
Galveston Bay Foundation

Consultants:



MYRON HESS

Principal,
Law Office of Myron Hess PLLC;
Tributary Consulting

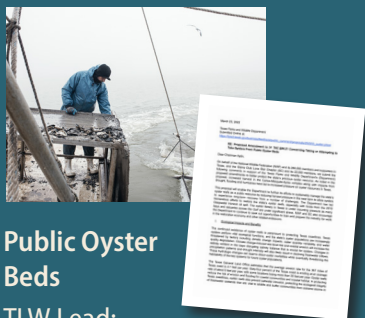


KEN KRAMER, PHD

Former Water Resources Chair,
Sierra Club, Lone Star Chapter
*Achieved Living Waters Emeritus
Status in 2022!

2022 AT THE CAPITOL...

In addition to frequent in-person testimony, the Living Waters team submitted extensive comments on a number of occasions in 2022. Here are some highlights:



Public Oyster Beds

TLW Lead: Amanda Fuller
 Addressed to: Texas Parks & Wildlife
 March 2022



Surface Water Quality Standards

TLW Lead: Alex Ortiz
 Addressed to: Texas Commission on Environmental Quality
 April 2022



Regional Flood Plan Comments (for 6 regions!)

TLW Lead: Danielle Goshen & Arsum Pathak
 Addressed to: RFPGs/Texas Water Development Board
 Oct 2022



Apr 27

Sunset Hearing on Texas Water Development Board

TLW Testimony from: Amanda Fuller, Danielle Goshen, Alex Ortiz, Katherine Romans, Jennifer Walker



Jun 22

Sunset Hearing on Texas Commission for Env Quality

TLW Testimony from: Danielle Goshen, Alex Ortiz, Myron Hess, Cyrus Reed, Katherine Romans, Jennifer Walker



Aug 23

House Committee on Natural Resources

Invited Testimony: Jennifer Walker on Water Infrastructure

Apr 21



House Ways & Means Committee

Testimony: Danielle Goshen on ARPA funding for water infrastructure

May 10



Senate Committee on Water, Agriculture & Rural Affairs

Testimony: Danielle Goshen, Jennifer Walker on water supply and flood infrastructure

Aug 23



House Committee on Natural Resources

Invited Testimony: Danielle Goshen on Texas Coastal Spine



IN THE MEDIA...

The Washington Post

Texas Plans a Texas-Sized Response to Rising Seas

By Francis Wilkinson | Bloomberg
May 1, 2022 at 8:58 p.m. EDT

In coastal Texas and many other places, walled cities are making a comeback. It's quite a turnaround, as the efficacy of defensive walls had declined precipitously since the age of the long bow. Barbarians still menace, of course. But the rekindled enthusiasm for defensive walls is a response to a different kind of threat.

San Francisco is contemplating a huge tidal wall across its bay to fend off sea rise and the attendant dosing of some of the world's most expensive real estate. Miami is weighing the damage a sea wall would do to tourist vistas against the damage a rising sea might do about a wall. New Orleans, after \$14 billion in levee construction, is an armored metropolis. Norfolk, Virginia, another low-lying city exposed to a surging sea, is spending a few hundred million federal dollars on a downtown sea wall. New York City, which has flooded in two devastating storms so far this century, is building a \$1.45 billion series of walls, floodgates and underground drainages, a modest down payment on the city's defense against rising tides and storm surges.

abc NEWS

New study shows water loss is a major issue in Texas

The lead author of the study shares ways utility companies can lessen the impact.



HOUSTON CHRONICLE

Clean water for Houston takes work

By Ayanna Jolivet Mecloud and Danielle Goshen

Life under a boil notice should make some basic priorities crystal clear. This week, after power failed at one of Houston's three main water purification plants, more than 2 million Houstonians were under their third boil water notice in two years. Such notices, even if only for a handful of days, are a crippling burden for a city — felt most acutely by the most vulnerable. Reliable drinking water for a metropolis of millions, built on bayous, is not a given. It's a collective achievement that requires constant attention. It takes a well-paid and trained workforce and a massive network of up-to-date infrastructure. It also

— helped push Congress to act. Despite the progress of the past few decades, there have been numerous industry-backed attempts to remove clean water protections. In the latest attack, the plaintiffs in *Sackett v. EPA* seek to limit which waters deserve federal protection under the Clean Water Act. If the Sacketts, two Idaho landowners, and their backers, are successful, many Houston-area streams and wetlands that provide flood control, recharge waters during drought, filter pollution and provide habitat will be put at risk of rapid degradation.

For Houston, that means not only more potential water supply contamination threats to our communities, but also further losses to

PBS



SEJ SOCIETY OF ENVIRONMENTAL JOURNALISTS



In April, National Wildlife Federation's Amanda Fuller spoke to reporters at the Society of Environmental Journalists annual conference about covering water infrastructure in Texas in the coming years. NWF also hosted a separate event for journalists covering Texas water issues at large.

Click on a news outlet to read their 2022 story featuring us:

Bloomberg

AXIOS

THE TEXAS TRIBUNE

Texas Public Radio

Houston Public Media

A SERVICE OF THE UNIVERSITY OF HOUSTON

PBS npr

CBS AUSTIN

San Antonio Express-News

kxan

TEXAS OBSERVER

BEAUMONT ENTERPRISE

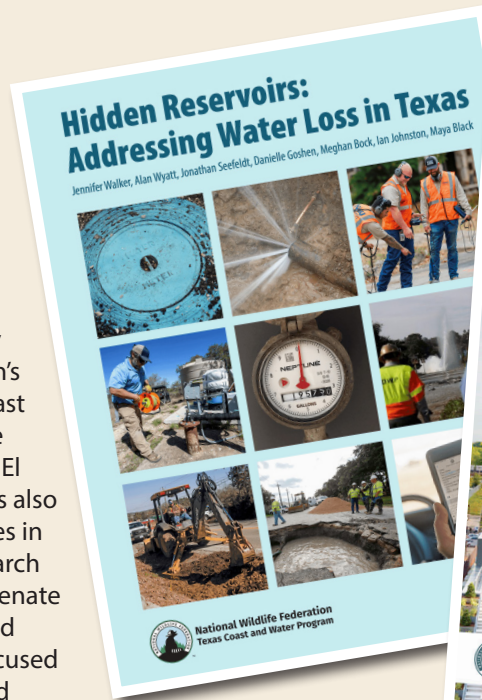
THE STRAITS TIMES

El Paso Times

INTEGRATING URBAN WATER

Turning water loss into a supply strategy

Building out new supplies of water is increasingly more expensive in Texas — there's only so much water to go around. Living Waters has long advocated for making the best and most efficient use of the water that we already have available in our communities. In one of the highlights of our year, we were able to quantify just how much water Texas could stand to gain by addressing water loss. National Wildlife Federation's *Hidden Reservoirs* study found Texas is losing at least 572,000 acre-feet of water per year, more than the 2020 annual water demand of Austin, Fort Worth, El Paso, Laredo, and Lubbock combined. The analysis also found that mitigation efforts could cut those losses in half. The Texas Legislature took notice of this research and invited testimony from the TLW team at the Senate Water, Agriculture and Rural Affairs Committee and House Natural Resources interim hearings that focused on water infrastructure. Both committees included mention of the report in their Interim Reports to the Legislature. In 2023, we will advocate for large investments to reduce water loss in Texas communities. Addressing aging infrastructure has the potential to unlock major new water supplies for the state.



▲ This year we published two of our most significant studies yet: a groundbreaking analysis of statewide water loss and a first-ever national blueprint for integrating water reuse into affordable housing development.

Developing water reuse for affordable housing

Water reuse helps reduce the water footprint of urban construction, but such projects are often confined to expensive corporate developments. In 2022, we helped bring affordable housing into the water reuse conversation. The National Wildlife Federation conducted nationwide interviews with community organizations, affordable housing developers, and water reuse experts to gather information and produce the first-ever guide to integrating water reuse into multi-family affordable housing projects. The guide makes the case that strategic integration of onsite water reuse can provide lasting financial and quality-of-life benefits to affordable housing residents and owners. We received interest from across the country and were invited to present at venues such as the National Blue Ribbon Commission on Onsite Reuse and the American Planning Association. The project is part of Texas Living Waters' ongoing commitment to ensuring that everyone in our community can have access to resilient and affordable water supplies.



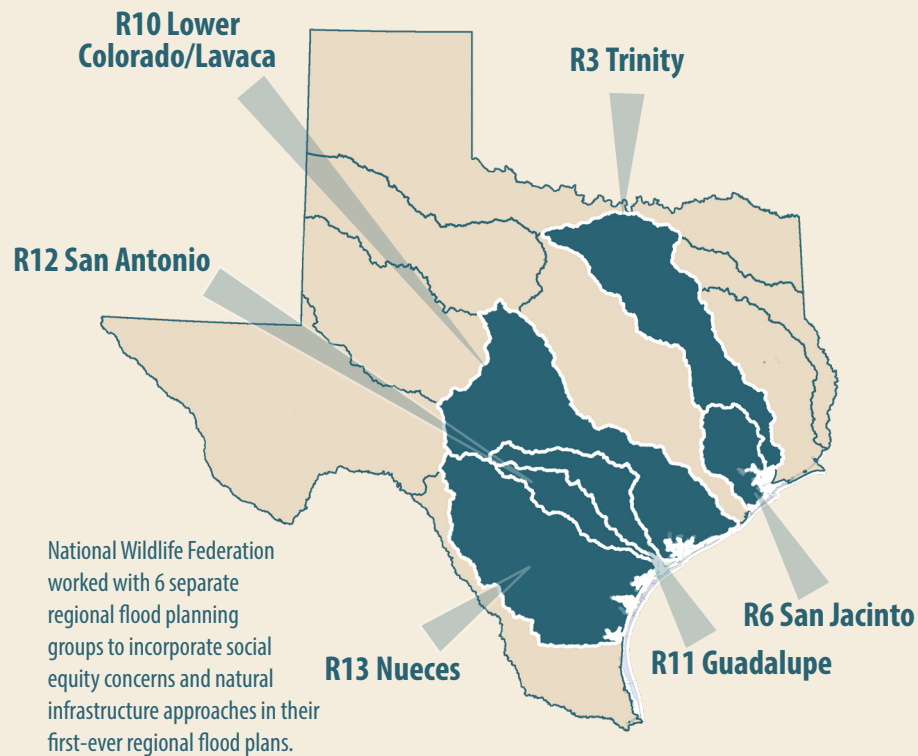
National Blue Ribbon Commission for Onsite Non-potable Water Systems



BUILDING CLIMATE RESILIENCE

Centering equity and nature in regional flood planning

In the aftermath of Hurricane Harvey, Texas lawmakers set in motion an expansive state flood planning process that is set to come to fruition in 2023. Throughout 2022, 15 Regional Flood Planning Groups across Texas raced towards the January 2023 deadline to submit their regional plans to the state. During this time, our team convened cross-regional dialogues, where we worked with environmental and public representatives from seven different regions, with the aim of increasing incorporation of nature-based solutions and equitable outcomes in the regional flood plans. By the end of 2022, our team had drafted and submitted public comments on six different regions. Now that the regions have all submitted their plans to the Texas Water Development Board, we look forward to working with the Board in developing a prioritization scheme that centers nature and prioritizes investments in areas that need it most. Further, through our work at the Capitol, we will be advocating for important policy changes, developed from recommendations across the regions, in order to improve communities' ability to mitigate and respond to flooding.

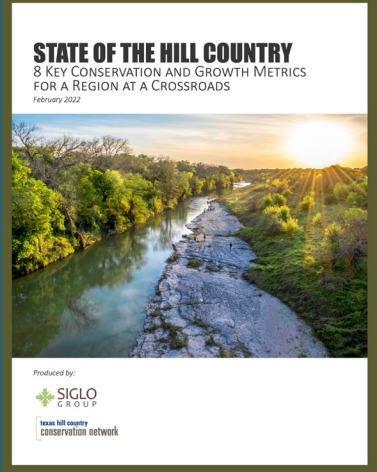


Facilitating nature-based solutions for the Texas Mid-Coast

As [outlined](#) by National Wildlife Federation in 2021, the Texas Mid-Coast faces a mounting tide of climate threats in the coming decades. In 2022, we moved from study to action, as the National Wildlife Federation, through partnerships with Harte Research Institute at Texas A&M University-Corpus Christi and Refugio County leadership, set to work designing a nature-based project in the region. This work is funded through the National Academies of Sciences, Engineering, and Medicine's Gulf Research Program. The natural features of Refugio County play a dual role of supporting local fishing and tourism-based economy while buffering the shoreline and reducing wave energy to provide hazard risk reduction benefits. Nature-based solutions can help balance extreme event vulnerabilities, strengthen natural features to withstand these impacts, and support long-term development goals of the community. The National Wildlife Federation is leveraging its topical expertise on nature-based approaches and building upon its local climate adaptation efforts in the Texas Mid-Coast to co-develop this project with the county.



NWF's Arsum Pathak helped lead a workshop gathering feedback from Refugio County leaders and community members on their preferred proposals for natural infrastructure projects in the region.



Promoting the protective value of nature in the Hill Country

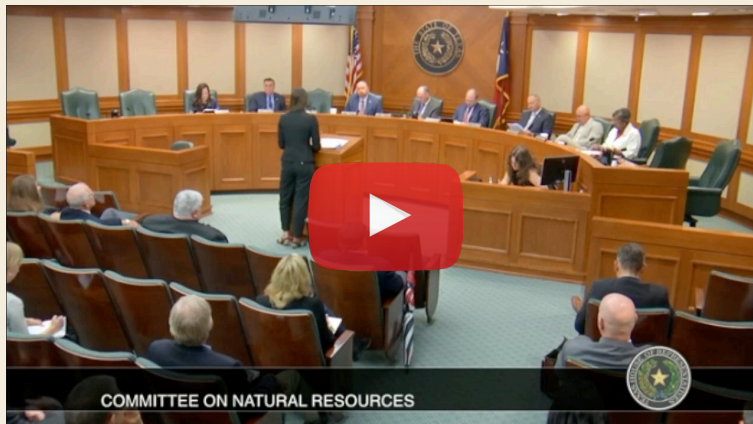
The last decade of extremes has shown the Hill Country is increasingly vulnerable to both flooding and drought. In 2022, Texas Living Waters partners worked collaboratively with The Texas Hill Country Conservation Network to create a Land, Water, and Natural Infrastructure Plan for the region. Several Living Waters members also served on the core team for the project. The plan aims to define a vision for the future of regional conservation and natural infrastructure projects in the region by identifying shared

priorities among partners and community members. Through multiple engagement opportunities including community surveys, in-person events, focus groups, and interviews, the plan takes a holistic view of land, water, and natural infrastructure in the Hill Country and identifies key conservation goals and priorities. The plan, set to release in April 2023, will help guide our work to address the complex threats facing the Hill Country region and protect the region's long-term health and resilience.

Calling for caution on the Texas Coastal Spine

The proposed Ike Dike, which is a part of the larger Texas Coastal Spine, would be the largest civil engineering project in U.S. history – currently estimated at \$32 billion. While the size and scope of this project is unparalleled, the Army Corps of Engineers has not completed sufficient studies on project impacts – causing National Wildlife Federation and Galveston Bay Foundation, and others to call for more information. In 2022, we came together with other environmental organizations in the Houston area to coordinate on our advocacy. Through these efforts, we have revitalized post-pandemic outreach to communities by organizing quarterly webinars for the public,

advocating for increased transparency at Gulf Coast Protection District meetings, and highlighting project concerns in the media. While there will likely be a large push for funding for the Ike Dike during the 88th Texas Legislature, our groups are committed to continuing to educate voters about the project and its potential impacts.



▲ Danielle Goshen delivered invited testimony on the Texas Coastal Spine to the House Committee on Natural Resources on Aug 23, 2022.

Highlighting the fragile state of the Hill Country

The window of opportunity to protect and sustain the Texas Hill Country's treasures will likely close within our generation. Such is the conclusion of a landmark study, the *State of the Hill Country*, published in 2022 by a coalition including a number of Texas Living Waters partners. The study defines and calculates eight metrics for tracking trends related to changes in the natural resources of the Texas Hill Country. Understanding how to balance development and conservation will be key to our collective future. The report draws a line in the sand for spring flow, per capita water use, pristine streams and provides a benchmark to measure progress as organizations work individually and collectively to preserve the natural resources of the Texas Hill Country. Our team participated in webinars, spoke with reporters (see this [San Antonio Express News feature story](#)), published opinion pieces and provided testimony to the Texas Legislature highlighting what is at stake if we do not take action to protect this region.

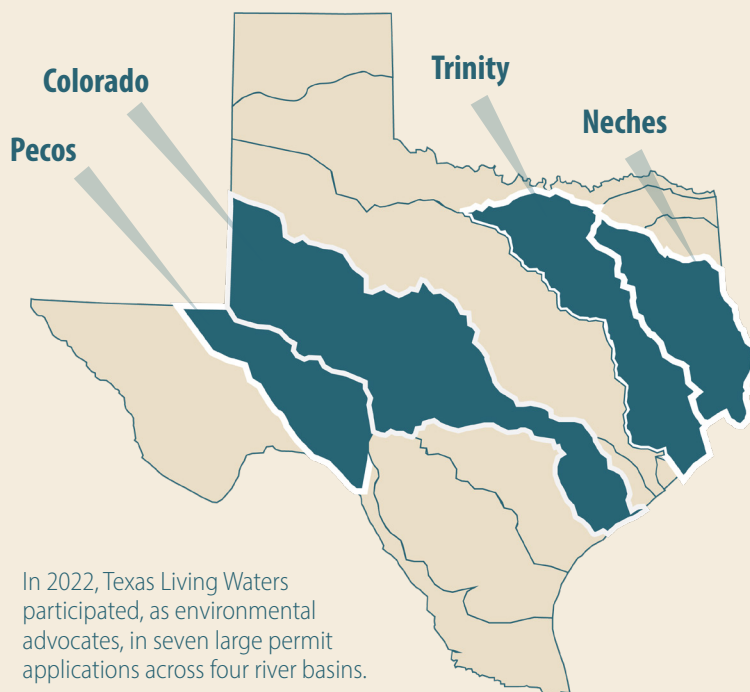
SECURING WATER FOR WILDLIFE

Advancing protection of critical flows

In 2022, The Nature Conservancy partnered with landowners, local, state and federal water management agencies, corporate and foundation donors, as well as non-profits to advance protection of water for nature and people. The Conservancy executed innovative water transactions to protect instream flows during drought with water rights holders and agricultural producers in the Upper Colorado River Basin, Galveston Bay, and Matagorda Bay for 5,500 acre-feet. We advanced our Sustainable Rivers Program partnership with the U.S. Army Corps of Engineers to improve dam management for the benefit of downstream ecosystems in the Cypress, Neches, and Brazos basins. At Diamond Y and San Solomon springs, the San Saba River, and the Devils River we continued studies to improve understanding of groundwater-surface water interactions and inform groundwater management. We developed the Trinity Floodplain Planning and Prioritization Tool in partnership with the Corps to inform flood planning and guide nature-based solutions such as protection and restoration of floodplains and watersheds in the Trinity River basin.



We welcomed The Nature Conservancy's Kyle Garmany (top) & Ryan Smith (left) into the Texas Living Waters fold this year. Both bring years of experience and expertise in Texas hydrology and freshwater ecology. *Photos: Kenny Braun for The Nature Conservancy*



Protecting flows in key river basins

In 2022, we participated in the permitting process for seven permit applications to improve implementation of the environmental flow standards and to address key resource threats. We engaged in extensive negotiations on four permit applications to divert water from the Trinity River. Those massive permit applications have the potential to directly reduce river flows and inflows to Galveston Bay by 320,000 acre-feet and to cause even greater indirect reductions by establishing undesirable precedent that might be applied for future applications. We were successful in negotiating greatly improved permit language for inclusion in the two most-upstream permits and on some aspects of the other two permits. Efforts will be ongoing in 2023 to resolve remaining issues on the two downstream permit applications, particularly issues related to ensuring protection of freshwater inflows to Galveston Bay.

Improving state management of water resources

The two state agencies most directly responsible for managing the state's water resources both underwent review in 2022 — and Texas Living Waters was there throughout the process to offer constructive feedback informed by years of close work with both agencies. As the Texas Water Development Board and the Texas Commission on Environmental Quality underwent Sunset Review in 2022, TLW collaborated with a diverse set of water advocates from across the state to meet with Sunset Advisory Commission Staff to discuss how these agencies could be improved, developed comments with broad sign-on from other groups, and provided testimony during Sunset Commission meetings. We believe through our efforts, we were able to get important Sunset Staff recommendations included that addressed the following issues: directing the Water Development Board to analyze information about financial assistance programs to better ensure funds are going where they're needed most and directing the Board to consult with the State Climatologist in the preparation of regional and state water plans. In 2023, our groups are committed to ensuring recommended changes to these agencies are enacted as the Sunset Bill moves through the legislative process during the 88th Texas Legislature.



▲ Katherine Romans from Hill Country Alliance testifies at the April 27, 2022 Sunset hearing on the Texas Water Development Board. Click to watch testimonies from the full Living Waters team.



▲ Alex Ortiz from the Sierra Club testifies at the June 22, 2022 Sunset hearing on the Texas Commission on the Environment. Click to watch testimonies from the full Living Waters team.



Fostering a future for Texas oysters



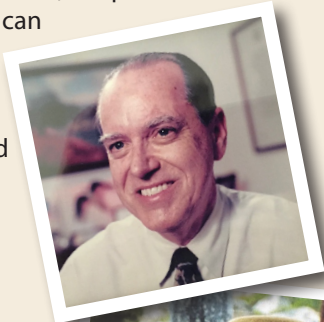
Listen to testimony from NWF's Amanda Fuller at the Texas Parks and Wildlife Commission hearing on oysters on March 24, 2022

Oysters are an important part of Texas' coastal ecosystem and their reefs provide a critical line of defense to communities from storms in the Gulf of Mexico. The state's oyster populations are in decline and are increasingly threatened by factors including climate change impacts, water quantity variability, and water quality degradation. In 2022, National Wildlife Federation, The Nature Conservancy, and Sierra Club Lone Star Chapter supported the Texas Parks and Wildlife Department's recommendation to close Carlos, Ayres and Mesquite Bays, near Matagorda Island, to allow oysters to grow in that area. Members of our team are serving in work groups designed by the Department to foster open dialogue around regulations and restoration activities between the Department, the oyster industry, restoration practitioners and conservation organizations.

THANK YOU KEN!

At the end of 2022, our co-founder and longtime Texas water champion, Ken Kramer, announced he would be stepping back from an active role as Water Resources Chair for the Lone Star Chapter of the Sierra Club, a role that he performed since "retiring" as Director of the Lone Star Chapter in 2012.

The Living Waters Project could never have achieved its decades of impact without the help of Ken's visionary leadership, expansive wisdom, and, above all, deep love and concern for the waters of Texas. We can not thank him enough for his lifelong labor of love and wish him the best as he continues to keep an eagle-eye on water happenings at the Legislature and across our spring-fed state!



SUPPORTERS OF TEXAS LIVING WATERS

We are grateful for the continued support and engagement from the following organizations:

The Meadows Foundation

The Cynthia and George Mitchell Foundation

The Jacob and Terese Hershey Foundation

The Trull Foundation

Shield-Ayres Foundation

The Burdine Johnson Foundation

Pisces Foundation

Coypu Foundation

The Rachael and Ben Vaughan Foundation

Environment Fund of Texas

Mr. Perry Lorenz

*We are also thankful for additional funders not listed above



DONATE

Texas Living Waters Project partners are 501(c)(3) organizations that rely on generous donations from people like you.

To make a tax-deductible donation visit texaslivingwaters.org/get-involved

Or donate by mail:

Texas Living Waters Project
National Wildlife Federation
505 E. Huntland Dr., Suite 530
Austin, Texas 78752

Photo: Kenny Braun for The Nature Conservancy



The Nature
Conservancy

