

# IMPACT REPORT

2024



THE WATER  
INSTITUTE



**We envision a future where all of  
humanity can adapt and thrive  
alongside nature in a changing world.**



## LETTER FROM THE PRESIDENT & CEO



When I had the privilege of becoming the third President and CEO of The Water Institute, I stepped into an organization with a growing legacy of impact, a team of dedicated experts, and a mission more vital than ever. I am honored to share this Impact Report on behalf of my colleagues. This report will cover more than the past year's accomplishments. It will encompass a body of work and expertise that has been building since we were founded in 2011 with the leadership of the Baton Rouge Area Foundation and the State of Louisiana on the heels of disaster. It is a testament to our journey, our milestones, and our vision for the future.

From the beginning, The Water Institute was built with a purpose: to provide the very best science and solutions to help communities adapt to and thrive amid water-related challenges. In the past few years, we have expanded our work to more directly support communities through the Community Resilience Center. We have pioneered cutting-edge technology to address some of the most pressing challenges facing communities across the country with innovative tools like FloodID, a real-time flood forecasting platform. We are also taking our expertise and applying it in efforts across the Gulf Coast and beyond.

These achievements are more than just milestones—they are proof of what is possible when expertise, collaboration, and commitment align. But we are not stopping here. We know that the challenges facing our world are growing in complexity and urgency, and we must rise to the challenge to help reduce vulnerability. We will continue to ask the hard questions and look inward while simultaneously looking to the future. In 2025 we are also endeavoring to finalize an ambitious strategic framework that will guide our efforts for the next five years with intention and purpose. We will also continue to build on partnerships with government, academia, and industry to leverage our collective expertise for broader reach.

We are at an inflection point. The science, tools, and strategies developed today will shape the future of communities for generations to come. With the support of our partners and supporters, we can expand our reach, scale our impact, and continue to deliver the bold solutions needed to navigate an uncertain future.

Thank you for believing in this mission and in the power of science-driven solutions. As you explore this report, I hope you feel the same sense of purpose and urgency that drives our team and our partners every day. We have accomplished so much, but there is still more to do. Together, we can rise to the challenge.

A handwritten signature in black ink, appearing to read 'Beaux Jones'.

**Beaux Jones**  
President and CEO  
The Water Institute

## LETTER FROM THE CHAIR OF THE BOARD OF DIRECTORS



Like so many of us who grew up in Louisiana, water has always been a part of my life. It is a state defined by its resilience, its culture, and its connection to water. I have been fortunate to spend most of my career working for Canal Barge Company, a marine transportation and logistical solutions business that provides safe, reliable, and cost-effective service, and creates jobs and economic opportunities up and down the Mississippi River system—one the nation's most important natural resources.

I have spent nearly two decades deeply involved in flood protection initiatives, knowing firsthand how vital addressing this issue is for the future of our region. After Hurricane Katrina, I worked with other concerned citizens and civic leaders to ensure that our levees and floodwalls would be built back better than ever. As importantly, we pushed for a stronger and more determined path forward to sustain and further improve the flood protection system—one that understands the power of preparation, innovation, and collective action.

That is why I am honored to serve as Chairman of the Board of The Water Institute. This organization is a brain trust of experts at the top of their fields tackling some of the greatest challenges of our time—rising seas, land loss, extreme weather. Through cutting-edge science and collaboration, The Water Institute is helping communities adapt, businesses plan, and policymakers make informed decisions.

The Institute and our partners have already accomplished so much. From pioneering tools that strengthen our flood defenses to supporting coastal communities in building resilience, the impact of The Water Institute is undeniably more important than ever. But the work is far from finished.

We must continue investing in solutions that will protect our homes, our industries, and our way of life. This Impact Report demonstrates many of the ways The Water Institute is supporting a world where science drives smart decisions, where communities are prepared, and where we don't just survive the next storm—we thrive beyond it.

Together, we will continue to build a stronger, safer, and more sustainable future.

Sincerely,

A handwritten signature in black ink that reads "Merritt Lane".

**H. Merritt Lane, III**  
Chairman of the Board  
The Water Institute

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# Our Impact

The Water Institute's mission is to **reduce the vulnerability of people, communities, ecosystems, and economies** through **transformative approaches** to interconnected **environmental and social challenges**.

The Water Institute is an **independent, applied research organization** that advances actionable **research, technology, and planning in support of science-informed decision making**. We serve as a thought partner, bridging disciplines and organizations. We draw on our roots in the Mississippi River Delta and the Gulf Coast, where water is both a strength and a vulnerability, to tackle challenges wherever they are.

The Water Institute was founded in 2011 in the aftermath of some of the world's most devastating water-related disasters, including hurricanes and oil spills.

Over the past decade and a half, we've become a **hub of innovation** and action, driven by the urgent need to confront the rising challenges that touch the lives of all of us—from coastal communities grappling with sea level rise to inland cities facing flooding from extreme weather events.

This report highlights some of the most significant projects and initiatives in 2024 and others that have been **scaling impact** over the years.

Top 📷 Charles Wallace, science policy fellow, discusses coastal resilience through games with families at the Louisiana Shrimp Festival which celebrates the people in the fishing industry.

Middle 📷 Emelia Marshall, ecologist, sifting sediment for invertebrates during a monitoring trip in the Upper Barataria Basin.

Bottom 📷 The Water Institute's Crowdsourced Bathymetry initiative enhances maritime navigation safety and efficiency by leveraging real-time vessel data to create bathymetric maps.





## Community Resilience Center at The Water Institute: Reaching More of the Gulf Coast


In 2023, The Water Institute founded the Community Resilience Center with the vision of a Gulf Coast where every community has the power, knowledge, and resources to adapt and thrive in the face of a changing coast.

In 2024, that vision went from an idea to reality! The Center worked collaboratively with coastal residents, nonprofits, government agencies, private organizations, researchers, and other partners to identify the Center's mission and focus areas based on the pillars of action, literacy, research, and collaboration.

With this guiding foundation, the Center has already successfully launched many impactful efforts to increase resilience along the Gulf Coast by addressing gaps in capacity and knowledge.

Insurance affordability and availability is an important issue facing residents of coastal communities. In 2024, the Center kicked off two pilot projects to test innovative insurance solutions in Louisiana. These pilots will build necessary understanding for turning these concepts into practical solutions that reduce the strain of increasing insurance prices.



 Colleen McHugh, Senior Planner, leads a discussion with community partners at the Center Kickoff, an event that shaped the creation of the Center's strategic plan.

***"We work with communities to figure out what will work for them and then how to get it done. Together we explore and implement strategies for increasing resilience that make a difference regardless of size or available resources."***



**Renee Collini**  
**Director, Community Resilience Center**  
**at The Water Institute**

The Center also developed and implemented the Meaningful and Effective Engagement Training program in 2024, which equips municipalities, state, and federal agencies and nonprofits with the knowledge, tools, and strategies needed to drive meaningful and broad community participation. Many participants are now putting that training into action across the Gulf Coast.

The Center's efforts are driven by following the lead of communities, building on their capacity, and adding tools and resources to foster sustainable and resilient futures. Examples of this collaborative approach include:

- The United Houma Nation: Supporting their efforts to develop and execute their monumental resilience and hazard mitigation plan which has become a model for community-driven adaptation (see more on page 6).
- Resilient East Biloxi: A collaboration with community leaders to address chronic flood risk and resilience issues in redevelopment plans for southeast Biloxi, Mississippi through capacity building and long-term community engagement.



## PARTNERING WITH COMMUNITIES TO BUILD CAPACITY: UNITED HOUMA NATION

The United Houma Nation is the largest Indigenous Tribe in Louisiana with 19,000 Tribal citizens. Located along the coastal bayous of Southeast Louisiana, its Tribal citizens are often on the front lines of disaster. Land loss and more frequent extreme weather threaten the Tribal citizens' home and way of life.

"Where our family once lived, there's no sign that land ever existed," says Lora Ann Chaisson, Principal Chief of the United Houma Nation. "My family used to hunt in my backyard—now they can fish."


The Community Resilience Center at The Water Institute has the privilege of working alongside the United Houma Nation, providing **expertise in grant strategy, proposal development, and project implementation**. Combining these skills with the vision of the Tribe resulted in successfully securing a **\$56.5 million award** from NOAA's Climate Resilience Regional Challenge to implement their Hazard Mitigation and Resilience Plan.

During this multi-phase effort, the Institute is directly supporting Tribal staff with technical assistance, capacity-building, and strategic guidance to ensure long-term success of the effort. The Tribe's ability to address environmental threats by enhancing resilience hubs, expanding communication networks, and exploring community-led migration strategies is critical to long-term success of the people in this region.

This partnership underscores The Water Institute's commitment to **following the lead of the communities, building on their capacity, and adding tools and resources to foster sustainable and resilient futures** while also creating a model for community-driven adaptation.



Top  The United Houma Nation recently acquired the Daigleville School and plans to restore it as a museum and cultural center.

Bottom  Lora Ann Chaisson, Chief of the United Houma Nation, speaking at the press conference announcing the \$56.5 million grant award.



# Rooted in the Gulf, Bringing Our Planning and Decision-Making Expertise Beyond

Founded in the wake of devastating hurricanes and oils spills, our work is **deeply rooted in the experiences of the Mississippi River Delta and the Gulf Coast**. But today more than ever we are **extending our lessons learned and expertise** beyond those borders wherever the need exists.

## RESILIENT JACKSONVILLE: A MODEL TO BE REPLICATED

The Water Institute played a critical role in the development of Jacksonville's **Resilient Jacksonville strategy**, which subsequently earned the city the 2024 National Planning Award for Resilience and Sustainability from the American Planning Association (APA). The Water Institute, in collaboration with the City of Jacksonville and other key partners, ensured the 50-year framework, designed to address **environmental change, population growth, and urban development**, was grounded in **rigorous science** and incorporated wide-ranging community perspectives.

The strategy directly confronts Jacksonville's unique challenges, including coastal and riverine flooding and the impacts of other environmental threats, all while accounting for the city's expansive size and extensive shorelines. The APA recognized the strategy's science-based approach, collaborative process, and its ability to enhance resilience across the city's varied landscape, ultimately fostering a stronger, safer, and more equitable future.


This place-based framework, which the Institute has also developed for Mobile, Charleston, and Houston, was born from the challenges of the Gulf and now serves as a **powerful model for other regions addressing challenges of growth and changing environmental conditions**.

*"The City of Jacksonville could not have asked for a better partner than The Water Institute for the development of Jacksonville's Resilience strategy. The Water Institute led a highly organized, collaborative, and nimble team that understands how to tailor scientific planning approaches to a range of contexts and design innovative actions for unique landscapes and development patterns that enhance social resilience in the face of environmental, social, and economic stressors."*



Anne Coglianese  
Chief Resilience Office  
City of Jacksonville



 Senior Planner Colleen McHugh engages with a Jacksonville resident, discussing the resilience planning efforts of Resilient Jacksonville.



# IMPACT HIGHLIGHTS



## PEOPLE



Awards being given to honor outstanding community members at the festival celebrating East Biloxi, an effort that advances climate resilience and is supported by the Community Resilience Center at The Water Institute.



Nicole Ricketts, a Future Coastal Leaders fellow, part of a program co-hosted by The Water Institute and Mississippi State University Coastal Research and Extension Center, visits with a coastal resident at a local festival to discuss community resilience.



Research being conducted by grant recipients from the RESTORE Act Center of Excellence for Louisiana, a program administered by The Water Institute, that funds research directly relevant to the implementation of Louisiana's Coastal Master Plan to preserve coastal Louisiana's rich culture, ecosystems, and natural resources.



The Water Institute with the City of Houston and other key partners developed a Pocket Prairies Implementation Framework, providing best practices, site prioritization methods, and scalable design concepts to enhance resilience and biodiversity citywide.

Photo from Jaime González.





## Restoration at the Chandeleur Islands

Through 2024 and for the next several years, The Water Institute will continue to be a **key scientific partner in the Chandeleur Islands Restoration Project**, restoring the barrier islands off the coast of Louisiana. This work is an example of cross-disciplinary, cross-sector work integrating three of The Water Institute's focus areas into a singular project: Avian Monitoring, Sustainable Sand Stewardship, and Seagrass Monitoring and Management.

The Chandeleur Islands Restoration Project will provide significant protection to several coastal communities through a **whole ecosystem restoration approach**. Working alongside our multi-agency partners, our work supports these goals:

- Restore and conserve bird nesting and foraging habitat.
- Enhance sea turtle abundance while restoring and conserving nesting beach habitat.
- Restore and enhance seagrasses, or submerged aquatic vegetation.
- Create, restore, and enhance barrier islands.



Preliminary plans mapping out sediment distribution at the Chandeleur Islands



Ioannis Georgiou (left), Director of Coastal and Deltaic Systems, and research scientist Martijn Bregman (right) discuss barrier island dynamics and modeling on the boat ride to survey seagrass at the Chandeleur Islands.






## SEAGRASS MONITORING


The Chandeleur Islands are home to Louisiana's only marine seagrass beds, including the only turtle grass meadows along nearly 1,000 kilometers of coastline between west Florida and central Texas.

However, decades of storm-driven erosion threaten these habitats, making their restoration a priority. Our research is focused on **defining restoration success criteria** for seagrass and understanding **how storms and disturbances impact seagrass habitats**.

Working closely with partners and management agencies, The Water Institute will provide **science-based recommendations to maximize seagrass habitat and ensure its long-term resilience**.



 Tim Carruthers, Director of Coastal Ecology, leads a discussion with the research team on the different types of seagrass at the Chandeleurs after an exploratory diving session.

 A green sea turtle grazes on seagrass. A key nesting site for Kemp's ridley, loggerhead, and green sea turtles, researchers have documented 136 sea turtle crawls at the Chandeleur Islands since 2022.







## ***Jerry and Donna Jolly: A Lifelong Commitment to a Better Future Living with Water***

For Jerry and Donna Jolly, water has always been a defining part of life in Louisiana. As lifelong residents, they have experienced firsthand the beauty and power of living with water, especially along the coast.

"It's a unique ecosystem that provides opportunities and the essential protection against hurricanes," Donna says. "We are much more vulnerable as this land disappears."

This deep connection to their home—its communities, culture, and natural resources—fuels the Jollys' commitment to The Water Institute's mission.

Residents of Baton Rouge, Jerry and Donna have witnessed their community endure and recover from catastrophic storms, and they are particularly intrigued by the Institute's work in real-time flood forecasting. With stronger and more frequent storms, having accurate, timely data to inform our emergency responses can mean the difference between devastation and preparedness.

"So many of our residents live south of I-10 near the coast and the river. The Institute's integrated, collaborative approach is critical to maintaining the homes and livelihoods of the people who live and work in that area," Jerry says.

A retired partner from accounting firm KPMG, Jerry spent 38 years advising on succession planning, governance, estate planning, and philanthropy. Since retiring in 2012, he has continued providing expert tax and consulting services while also serving as Secretary and Treasurer of The Water Institute's Board of Directors. His financial expertise underscores the importance of long-term investment—both in business and in preserving our future.

Through their philanthropy, the Jollys are investing in the Institute's ability to innovate and broaden its impact.

"One of America's greatest assets is its extensive coastline. To protect that asset and the people who depend on it, we must focus on groundbreaking solutions to sea level rise and extreme weather," says Jerry. "The Water Institute is ideally positioned to lead the way."

Jerry and Donna envision a future where coastal communities, ecosystems, and economies are safeguarded, and they believe now is the time to act.

"The work being done today will determine the future of our coast, our communities, and our way of life," says Jerry.





## SUSTAINABLE SAND STEWARDSHIP

Sand is a scarce yet vital resource that is used in everything from everyday electronics to barrier islands restoration. Communities are increasingly competing for sand to protect their coasts as readily accessible sources on land and the seafloor are depleted. The Water Institute addresses **sand and sediment management challenges** by bringing together a **transdisciplinary team of scientists, engineers, and planners** to work with stakeholders on **innovative, science-based approaches**.

To support conservation and restoration efforts at the Chandeleur Islands and throughout the Gulf, The Water Institute provides **technical analyses, modeling, and strategic support** to the U.S. Fish and Wildlife Service and its partners. This includes studying how the islands are changing, identifying ways to slow erosion, assessing environmental challenges, and analyzing hurricane impacts. The Institute also provides **science-based guidance** for a restoration project that uses natural solutions to help protect the islands for the future.

*"I am excited that the findings of our research, which investigated how the islands formed and identified the root cause of their rapid erosion, is now being used as the basis for a novel approach to engineering and designing this important restoration project."*

**Mike Miner**  
Director of Applied Geosciences  
at The Water Institute



 Mike Miner, Director of Applied Geosciences, leads a discussion on the sediment dynamics of the Chandeleur Islands.





## AVIAN MONITORING

The Water Institute and our partners launched the **Avian Data Monitoring Portal**. This example of our transdisciplinary and cross-agency collaboration delivers open data for widespread impact. Developed in partnership with key stakeholders, this innovative tool brings together more than a **decade of aerial survey data** from the northern Gulf Coast in a **user-friendly, interactive platform allowing researchers, coastal managers, and the public to view bird nesting data by year, species, region, and more.**

The portal builds upon the *Deepwater Horizon Louisiana Trustee Implementation Group's Guidance for Coastal Ecosystem Restoration and Monitoring to Create or Improve Bird-Nesting Habitat*, of which the

Institute was also a contributor. By synthesizing colonial waterbird nesting data, the report and the platform provide key insights to **guide restoration planning and stakeholder coordination in the Louisiana and other regions throughout the Gulf.**

Leveraging expertise in avian science, coastal geomorphology, and barrier island restoration, the Institute's analysis informs critical decisions to enhance habitat resilience and support long-term conservation efforts.



Avian Data Monitoring Portal  
[www.avianmonitoring.com](http://www.avianmonitoring.com)



Avian Guidance  
<https://qrco.de/avian>



Brown Pelicans nesting on the Chandeleur Islands



# IMPACT HIGHLIGHTS



# ECOSYSTEMS



📷 Emelia Marshall, Jacob Oster, and Erin Kiskaddon (left to right) sampling neckton in the upper Barataria Basin as part of the monitoring of a 1200-acre wetland restoration project led by NOAA.



📷 The Water Institute, in partnership with Bureau of Ocean Energy Management and APTIM, is applying structured decision making to develop a framework for the National Offshore Sediment Inventory. This effort will help optimize offshore sand resources for coastal resilience, habitat restoration, and future needs.



📷 In partnership with Louisiana Coastal Protection and Restoration Authority, The Water Institute developed the Barrier Island System Management (BISM) program—an adaptive, long-term strategy to sustain barrier island functions, enhance storm protection, and optimize restoration efforts for the next 50 years.



# Coastal Blue Carbon as a Pathway to a Carbon Credit System

Louisiana's wetlands are among the most productive ecosystems in the world, serving as **vital carbon sinks** that capture and store atmospheric greenhouse gases sustainably and long-term. Coastal carbon sequestration presents a powerful opportunity, but harnessing its full potential in Louisiana comes with challenges. The dynamic nature of these wetlands makes measuring their impact complex, and unlocking their benefits requires overcoming significant scientific and policy hurdles.

The Water Institute has been working across sectors with experts in Louisiana, the northern Gulf, and the world to reduce these scientific uncertainties that are critical to informing policy updates needed to establish a financially viable carbon accreditation system for Louisiana's tidal marshes. More than investigating a carbon credit system on Louisiana's coast, this work is also about **valuing our wetlands, which offer immense environmental, economic, and social benefits.**

In 2024, Tim Carruthers and The Water Institute's Coastal Ecology team published a key paper in *Frontiers in Environmental Science* with leading coastal carbon experts. Their research highlights how closing knowledge gaps can boost the financial viability of blue carbon projects in Louisiana's tidal wetlands, unlocking funding for critical restoration and protection efforts.


Identifying and filling critical knowledge gaps can optimize financial viability of blue carbon projects in tidal wetlands



***"Nature based restoration increases areas of intact habitat that support biodiversity and associated resources to support local communities—if tidal wetland carbon offsets can be generated from that coastal restoration we have the potential to increase restoration effort, meet biodiversity and community resilience goals, while mitigating the causes of sea level rise."***



**Tim Carruthers**  
Director of Coastal Ecology  
at The Water Institute

 Shawn Doyle, Andrew Courtois, and Erin Kiskaddon (left to right) take sediment core samples to measure soil accretion and track carbon accumulation outside of Port Fourchon, Louisiana





## Christy and Kia Brown: Continuing a Legacy of Conservation

As a child, Christy Brown spent countless hours exploring Louisiana's bayous, marshes, and lakes. He recalls Lake Pontchartrain, the waterways surrounding the Lafitte area, and the coastal wetlands of Iberia and Vermilion Parishes—the land inextricably intertwined with its communities. Those moments shaped his deep reverence for the environment and the people. But over the years, he has witnessed dramatic change.

"The incredible land loss we've experienced is undeniable. Ponds that once contained an abundance of wildlife now are large open lakes. I knew that our relationship with nature had fallen out of balance," Christy says.

Now a board member of The Water Institute, managing member of NOLA Holdings, LLC, and chair of McIlhenny Company, Christy continues a long family legacy of conservation. His great-grandfather, E.A. McIlhenny, was a pioneering environmentalist credited with helping to save the snowy egret from extinction and was the founding president of Audubon Louisiana. That commitment to protecting Louisiana's coast runs deep in Christy's own life and philanthropy.

Having seen firsthand the rapid disappearance of the coastal landscape, Christy and his wife, Kia, are steadfast supporters of The Water Institute.

"We understand that the only way to restore balance is through science-based solutions, and The Water Institute leads the way in making that happen," he says. "The Institute, through its scientific, technological, and decision-making contributions to Louisiana's Coastal Master Plan, for example, has helped create a roadmap of how we can begin to restore our balance with nature while not unduly restricting the activities of humans. The work that the Institute does in this area is world class."

Through their philanthropy, Christy and Kia hope to support innovative solutions that may not receive government funding but are vital to coastal resilience.

"The Water Institute's experts are committed to finding practical ways to mitigate threats both to and from water, providing those answers through transformative science and technology," Christy says.

"Most people care about the future of our coast for our residents, our ecosystems and our economies. I encourage people to explore the Institute's work and see the impact firsthand. It's hard not to think about what could have been achieved if we had addressed these issues 40 years ago. But what's more alarming is imagining what will happen if we don't act now."





# FloodID: Advancing Real-Time Forecasting for Louisiana and Beyond

Coastal communities face significant flood risks from tropical systems, heavy rainfall, and compound flooding. To enhance emergency response and decision-making, The Water Institute, in partnership with state agencies, developed **FloodID—a cutting-edge, user-friendly platform integrating advanced meteorological data and flood models.**

In 2024, FloodID evolved from a beta tool to a fully operational system actively deployed in two Emergency Operations Centers. The platform now supports **multiple flood model types enhancing predictive accuracy for different flooding scenarios.**

The Water Institute staff **supported emergency management teams before and during four hurricanes** in the 2024 storm season. The FloodID application provided **near real-time flood forecasts** by combining data from multiple federal sources. These forecasts helped guide decisions on:

- storm landfall timing;
- storm preparation timing;
- location and levels of roadway flooding;
- location and levels of flooding where buildings and people are most impacted.

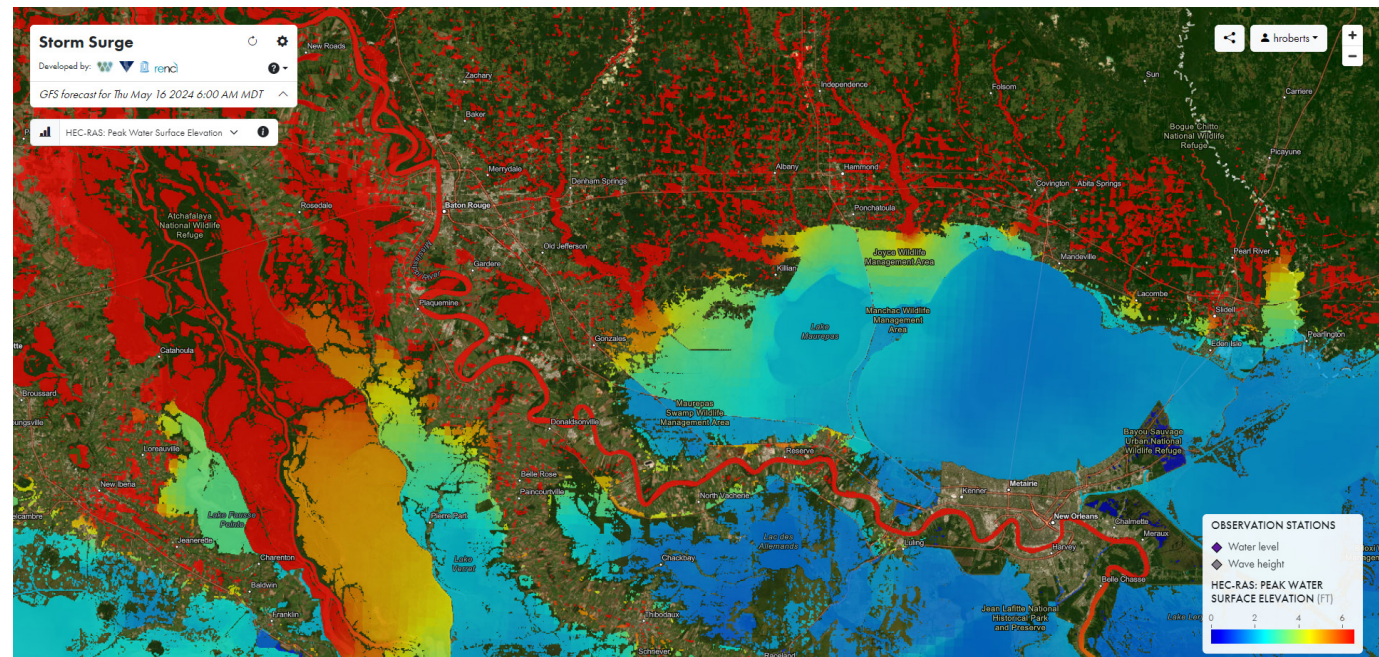
Notably, the system was also used to brief the Louisiana governor during Hurricane Francine, demonstrating its high-level impact.

Designed for Louisiana's immediate needs, FloodID is built to scale to other regions, demonstrating The Water Institute's leadership in real-time flood forecasting and risk reduction.

*"It's been incredibly rewarding to develop FloodID because it allows me to combine my expertise in flood modeling and software engineering while also having a real, tangible impact on what data is available to emergency responders on the ground during emergencies."*



**Zach Cobell**  
Senior Computational Scientist  
The Water Institute



Forecast data hosted by RENC | Sources: Eiri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community | Source: Eiri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



## Crowdsourced Bathymetry

The U.S. maritime infrastructure is vital to the nation's economy through the movement of goods, yet outdated and infrequent waterway surveys create significant challenges for navigation safety and cargo planning. Some areas are surveyed only once per decade and in dynamic river systems such as the Mississippi, bed elevation can change by more than 10 meters annually.

To address this gap, The Water Institute has implemented a **crowdsourced bathymetry solution**, leveraging a growing fleet of vessels that collect real-time depth data on the Mississippi River that can supplement existing hydrographic survey efforts. Using patent-pending technology, raw depth data is processed and

transformed into near real-time bathymetric maps, providing stakeholders with **dynamic insights to improve navigation safety, operational efficiency, and dredging management while reducing costly delays.**

In 2024, the Institute's initiative surpassed 2 billion soundings, **proving its scalability and impact.** Engagement with ports, pilots, tug companies, and federal agencies such as The U.S. Army Corps of Engineers, U.S. Coast Guard, and NOAA reinforces crowdsourced bathymetry's value in enhancing maritime operations.







# IMPACT HIGHLIGHTS




# ECONOMIES



 Director of Research Operations Jessica Henkel and planner Abby Littman facilitate discussions on nature-based solutions for coastal resilience at MacDill Air Force Base. This workshop explored strategies to mitigate shoreline erosion and flooding through innovative approaches that integrate natural features with traditional infrastructure.

 The Water Institute, along with other key partners, are collaborating with Asian American fishers and shrimpers in southeast Louisiana on a three-year project to co-develop a climate adaptation and resilience plan that protects fisheries habitat, infrastructure, and livelihoods.



 Scott Hemmerling, Lead Research Scientist, presents to a St. Mary Parish local interest group meeting on the development of a strategic plan for an Atchafalaya River coastal hub.



# Looking Ahead

As we move forward, The Water Institute will continue to increase resilience in Louisiana and the Gulf Coast while expanding our impact and innovating scalable solutions that can be replicated across the U.S. and beyond. Key priorities include:



**Innovation Studio:** Developing new tools and technologies aimed at reducing the vulnerability of people, ecosystems, and economies. By fostering creativity and cross-disciplinary collaboration, we will drive transformative solutions.



**Novel Research:** Empower our scientists to pursue disruptive pilot projects with the potential to redefine coastal resilience and sustainability.



**Direct to Community Impact:** Strengthen our community efforts by bringing our knowledge and expertise to underserved coastal communities, ensuring they have the resources and support needed to thrive.



**Diversified Support:** In an era of increasing challenges, diversifying our support base is more important than ever. We will cultivate new partnerships and funding streams to sustain and expand our mission.

Together, these priorities will guide us toward a future where people, ecosystems, and economies are more resilient, connected, and prepared for the challenges ahead.





## 2024 By the Numbers

The Water Institute has expanded its expertise, partnerships, and capacity to drive greater resilience and impact in the communities it serves.

### GROWTH



**DOUBLED** the research portfolio over the past 3 years  
**158 ACTIVE PROJECTS**



**84% INCREASE** in the size of staff in 5 years to  
**83 STAFF MEMBERS**

**22**

peer-reviewed  
journal papers published



**55% INCREASE**  
in number of partners  
over the past 3 years

## WHERE WE WORK

Project Impact Areas



## COMMUNITY INVESTMENT

**9**



emerging coastal leaders  
through mentorship and  
fellowship programs

**65+**



capacity building workshops  
and engagements supporting  
community partners

The Water Institute serves as Louisiana's RESTORE Act Center of Excellence with a mission to provide research through a competitive grants program that advances Louisiana's Coastal Master Plan.

Since 2016:



\$9.3 million in  
funding awarded



108 undergrads,  
grads, and post-docs  
supported



30 journal  
articles published



39 datasets made  
publicly available



# Partnerships

The Water Institute is proud to collaborate through a broad network of partners from private industry, academic institutions, non-profit organizations, and governmental partners at the local, state and federal levels. Here are some of the organizations we have worked with most recently.

Acuity Design Group  
 Amite River Basin Drainage & Water Conservation District  
 Applied Coastal  
 APTIM  
 Arcadis  
 Arizona State University  
 AtkinsRealis  
 Audubon Nature Institute  
 Bayou Community Foundation  
 Baton Rouge Area Foundation  
 Baton Rouge Area Chamber  
 Bureau of Ocean Energy Management  
 ByWater Institute  
 Carnegie Mellon University  
 Center for Sustainable Engagement and Development  
 Chevron  
 City of Houston  
 City of Jacksonville  
 City of Mobile  
 City of New Orleans  
 Coalition to Restore Coastal Louisiana  
 Coastal Bend Council of Governments  
 Coastal Bend Neighborhood Empowerment  
 Coastal Communities Consulting  
 Coastal Conservation Association  
 Coastal Protection and Restoration Authority  
 Colibri Ecological Consulting  
 ConocoPhillips  
 Corpus Christi - Nueces County Public Health District  
 CSRS  
 CurtisLab  
 Danos

DEC  
 Deltares  
 Ducks Unlimited  
 Dynamic Solutions  
 Edward Wisner Donation Trust  
 Environmental Science Services, Inc.  
 Ephram & Associates Environmental Consulting  
 Escambia County  
 ETS  
 ExxonMobil  
 FEMA  
 FernLeaf Interactive  
 FitzGerald Coastal Consulting  
 Freese & Nichols  
 Gannett Fleming TranSystems  
 Greater New Orleans Foundation  
 Greater Lafourche Port Commission  
 GreenPoint Engineering  
 Gulf of America Alliance  
 Gulf of America Coastal Ocean Observing System  
 Halff  
 Harmonic International  
 Hazen and Sawyer  
 HDR  
 Hunt Guillot & Associates  
 Idea Village  
 Instituto Tecnológico de Estudios Superiores de Monterrey  
 Louisiana Department of Natural Resources  
 Louisiana Department of Transportation  
 Louisiana Department of Wildlife and Fisheries  
 Louisiana Economic Development  
 Louisiana GOHSEP

Louisiana Office of Community Development  
 Louisiana Office of Planning & Budget  
 Louisiana Sea Grant  
 Louisiana Wildlife and Fisheries Foundation  
 LSU  
 LSU School of the Coast and Environment  
 Louisiana Universities Marine Consortium  
 Max McGraw Wildlife Foundation  
 McNeese University  
 Michael Baker International  
 Mississippi State University  
 Mississippi-Alabama Sea Grant  
 Moffatt & Nichol  
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# Scientific Publications in 2024

1. Georgiou, I. Y., FitzGerald, D. M., Sakib, M. M., Messina, F., Kulp, M. A., & Miner, M. D. (2024). Storm dynamics control sedimentation and shelf-bay-marsh sediment exchange along the Louisiana coast. *Geophysical Research Letters*, 51(22), e2024GL111344. <https://doi.org/10.1029/2024GL111344>
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6. Jung, H., Moss, L., Carruthers, T., Di Leonardo, D., DeMarco, K., Whalen, M., Brasher, M., & Dijkstra, J. (2024). Modeling potential benefits of fragmented marsh terrace restoration in Terrebonne Bay, Louisiana: Sediment processes interacting with vegetation and potential submerged aquatic vegetation habitat. *Frontiers in Environmental Science*, 12. [https://www.frontiersin.org/journals/environmental-science/articles/10.3389/fenvs.2024.1432732/full?utm\\_source=Email\\_to\\_authors\\_&utm\\_medium=Email&utm\\_content=T1\\_11.5e1\\_author&utm\\_campaign=Email\\_publication&field&journalName=Frontiers\\_in\\_Environmental\\_Science&id=1432732](https://www.frontiersin.org/journals/environmental-science/articles/10.3389/fenvs.2024.1432732/full?utm_source=Email_to_authors_&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field&journalName=Frontiers_in_Environmental_Science&id=1432732)
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16. Figueredo, N., Bentley, S. J., Chaytor, J. D., Xu, K., Jafari, N., Georgiou, I. Y., Damour, M., Duxbury, J., Obelcz, J., & Maloney, J. (2024). Sedimentary processes and instability on the Mississippi River delta front near the shipwreck of the SS Virginia. *Water*, 16(3). <https://doi.org/10.3390/w16030421>
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THE WATER INSTITUTE  
1110 RIVER ROAD S, SUITE 200  
BATON ROUGE, LA 70802

