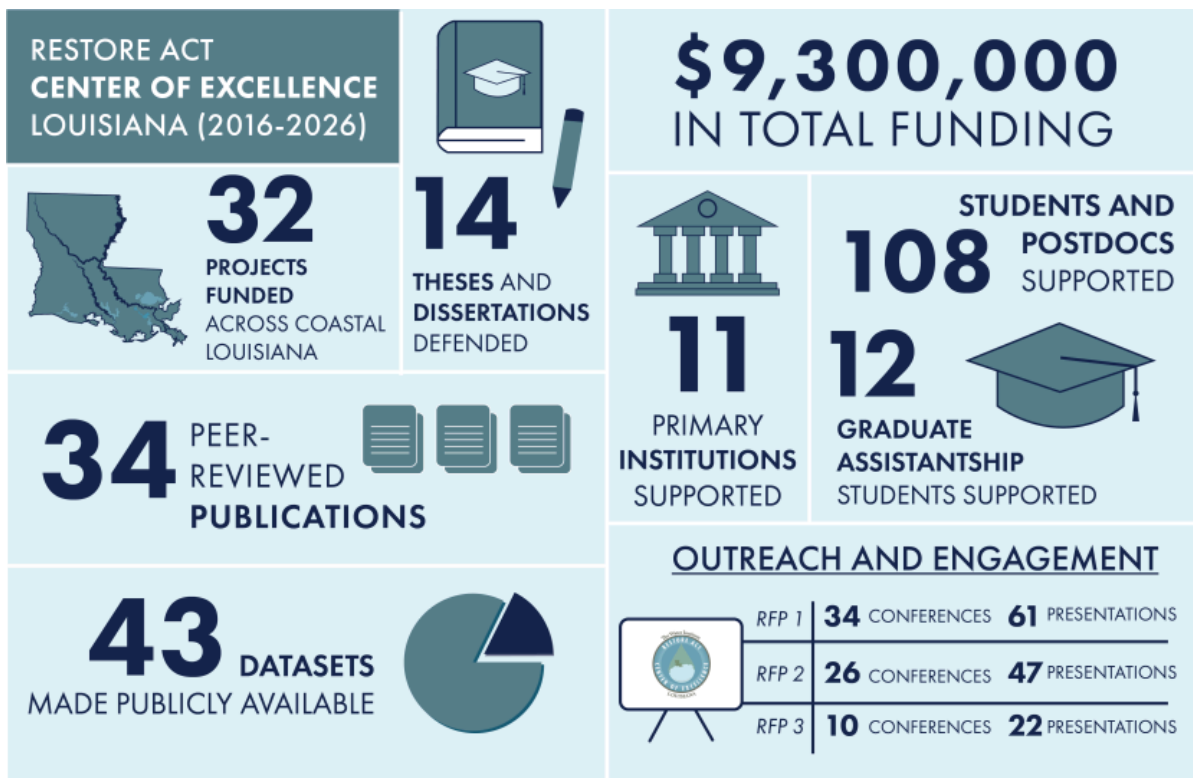


RESTORE ACT  
**CENTER OF EXCELLENCE  
 FOR LOUISIANA (LA-COE)**  
 QUARTERLY NEWSLETTER



April 2026



## LA-COE 10-Year Impact Report Release

The LA-COE wants to thank our incredible partners and funded research team members as the program marks a decade of impactful research funding and collaboration in the newly released RESTORE Act Center of Excellence for Louisiana 10-Year Impact Report. The report highlights LA-COE-funded research initiatives and the role they have played in informing critical decision-making and advancing measurable progress for coastal ecosystems and communities statewide. In addition, the report spotlights the many students and post-docs funded through LA-COE programs—our future Louisiana coastal leaders!

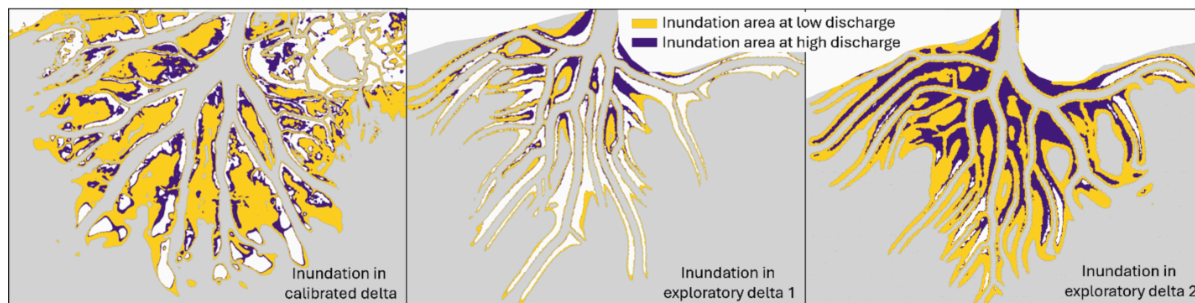
[Read it Here!](#)

**RFP3 Research Award Project Highlight: Dr. Muriel Brückner, Louisiana State University**

River deltas are dynamic landscapes where water, sediment, and plants interact to shape islands and wetlands. To better understand these processes, Dr. Muriel Brückner and her team have developed an exploratory modeling approach that represents the typical topography and flooding patterns found in many river deltas as part of the RFP3-funded project, "An Analysis of Vegetation Establishment and its Feedback with Coastal Inundation via Modeling." By adjusting sedimentary characteristics, the team generated delta landscapes with varying numbers of channel branches, natural levee heights, and island sizes and numbers. These physical features strongly influence when and how long islands are flooded, which ultimately determines where plants can establish and survive. Although the model is exploratory rather than tied to a single site, it reproduces key behavior observed in real deltas when driven representative river discharge and tidal conditions.

Dr. Brückner and her team applied this approach to examine how different delta configurations influence flooding and, in turn, vegetation growth. Using two example delta configurations, they explore how variations in river discharge and tides affect the extent and duration of flooding on delta islands. The team compared the modeled inundation patterns with observations from a river delta in Louisiana and found that the spatial patterns of flooding during high and low flows are broadly similar. However, differences in island size and layout alter the flow paths across the delta and influence the amount of habitat available for vegetation.

The team also incorporated a newly developed vegetation model that predicts where plants can grow based on flooding conditions and habitat thresholds. When applied to a calibrated delta model, this approach successfully reproduces observed vegetation patterns. Dr. Brückner is now using the same framework in her team's exploratory delta models to examine how two common intertidal plant species establish and spread under different hydrological conditions. Together, these simulations help reveal how the interaction between water flow, landscape shape, and plant growth controls the development of delta wetlands.



Example of modeled inundation maps in a calibrated delta, as well as in two exploratory deltas. These outputs help explore how variations in river discharge and tides affect the extent and duration of flooding on delta islands.

## RFP3 Research Award Project Highlight: Dr. Celalettin Ozdemir, Louisiana State University

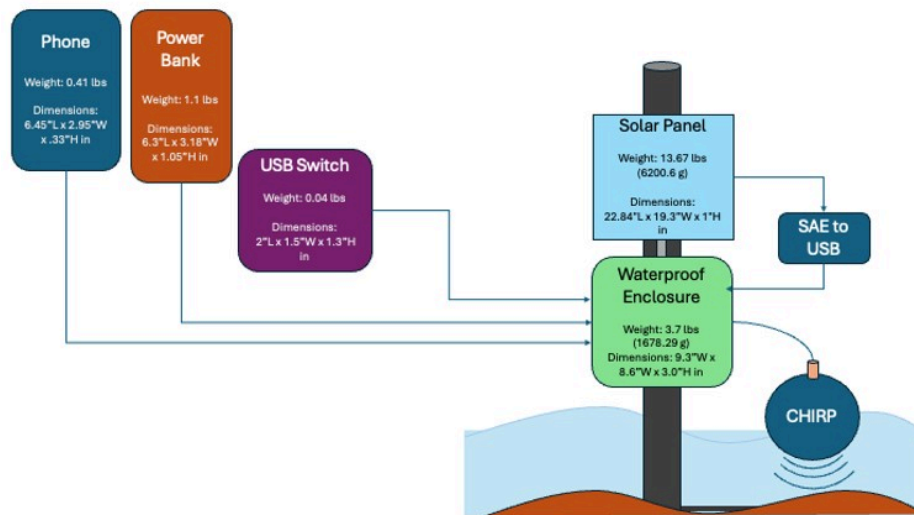
Often, the costliest component and greatest source of uncertainty in marsh creation projects is associated with the dredging of the fill sediment. This uncertainty stems from a lack of design tools and effective construction monitoring to predict how hydraulically dredged sediment will move, settle, and consolidate when it is pumped in the marsh creation area. The RFP3-funded project, "Instrumented Settlement Plates Enhancement for Marsh Creation Monitoring," led by Drs. Celalettin E. Ozdemir (LSU) and Navid H. Jafari (Texas A&M), aims to address this challenge by developing a novel sensing approach to transform how the behavior of dredged sediment is projected. A critical challenge in marsh restoration is monitoring the "mudline," which is the interface where settling sediment begins to form new soil. Accurately identifying this elevation is vital for quantifying settlement and ensuring the project reaches its target height.

While pre-existing Instrumented Settlement Plates (ISPs) use pressure cells and piezometers to estimate initial slurry concentrations, they cannot pinpoint the exact mudline as self-weight consolidation begins. To fill this gap, the research team is adapting CHIRP MAX™ sonar technology, paired with Android integration, to facilitate remote scanning and real-time data

retrieval. Unlike conventional sonars, CHIRP MAX™ sends multiple frequencies per ping, balancing depth and detail to "see" through the water column to the settling mud.

A key objective of the current phase is to determine if the high-resolution insights gained from CHIRP sonar can be translated to past projects. The team is currently synthesizing the dataset of historical ISP data to identify regional consolidation patterns. By comparing these "ground-truth" historical records with the new sonar-derived mudline, the study will test whether this new sensing paradigm can be used to retroactively understand or better predict performance across diverse marsh sites. To provide large-scale context, the team is also incorporating remotely sensed Sentinel satellite data, offering a "birds-eye" cross-validation of the settlement behavior observed on the ground.

Looking ahead, parallel work is underway across multiple marsh creation sites to ensure an integrated evolution of sediment performance. The team is also planning an upcoming field campaign to collect sediment cores. These physical samples will provide the final layer of ground-truth data, supporting a robust geotechnical understanding of how dredged sediments evolve into resilient coastal habitats.



Above: Descriptive sketch of the proposed CHIRP MAX™ technology.

Below: The CHIRP system deployed on LSU's campus.



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**Upcoming Conferences**

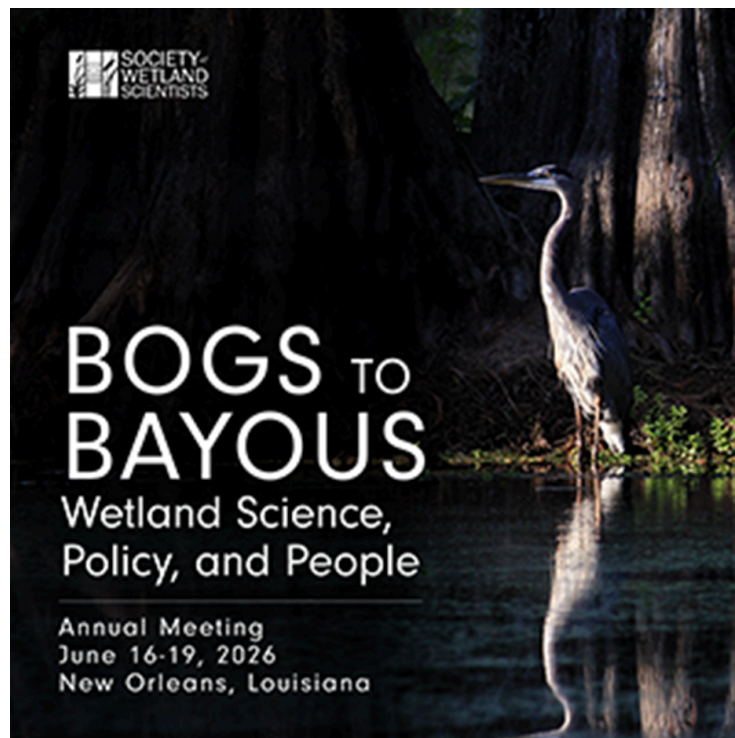


## GulfCon 2026

If you are attending GulfCon 2026 in Mobile, AL, May 4-7, 2026, please stop by the LA-COE table and say hello!

Additionally, LA-COE Director Jessica Henkel will be giving a presentation Tuesday, May 5th at 2:30pm titled, "Advancing the Implementation of Coastal Restoration in Louisiana through a co-produced and Adaptive Science Framework. Learn more about GulfCon below.

### GulfCon Details



## Society of Wetland Scientists Conference

The Society of Wetland Scientists Conference is taking place in New Orleans from June 16th-19th. Presentations will highlight the coordination between different wetland sectors and

disciplines while providing opportunities to collaborate on related topics like: indigenous or tribal interests for restoring native ecosystems to build resilience; restoring or managing ecosystems to meet subsistence or cultural objectives; tackling climate change; water resource management; soil carbon sequestration; current approaches used for wetland education and outreach; and more.

The conference also offers opportunities for networking during events hosted throughout the week. More information and registration can be found below.

A friendly reminder that if you plan to submit an abstract regarding your RFP3-funded research project to future conferences, please first send it to [LA-COE@thewaterinstitute.org](mailto:LA-COE@thewaterinstitute.org) for approval!

## Society of Wetland Scientists Conerence Details

Resources for RFP3 PIs, including the PPR template, the LA-COE portal system, and a quick reference guide are available below.

### Resources

Connect with us on LinkedIn! Join our LA-COE Connects group to follow along with the latest updates and exciting news from the LA-COE.

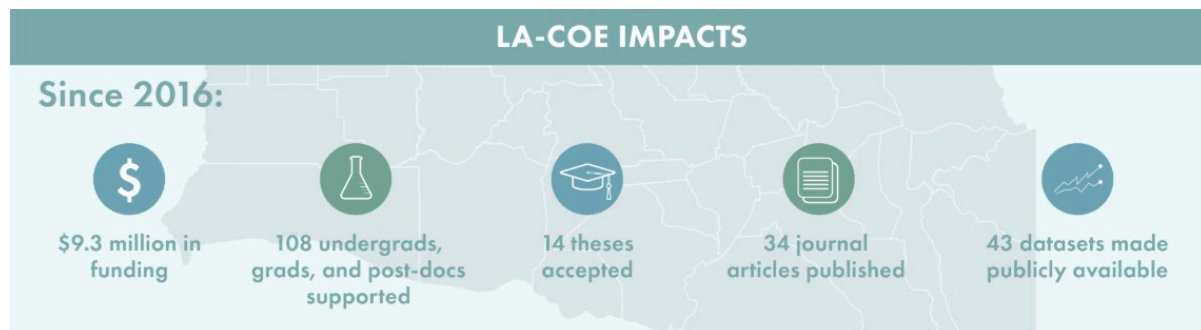


### LA-COE Connects: RESTORE Act Center of Excellence for Louisiana

Public group

### Connect Here!

## Impacts



## Follow us on social media



Remember to use #LouisianaCOE with other optional additions of #Coast #Science #AppliedResearch in your posts.

[Newsletter Sign Up](#)

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