



Locating a Louisiana National Estuarine Research Reserve: Barataria Basin

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For more information please go to www.laseagrant.org/deltanerr

7 February 2022

BARATARIA BASIN NERR TEAM

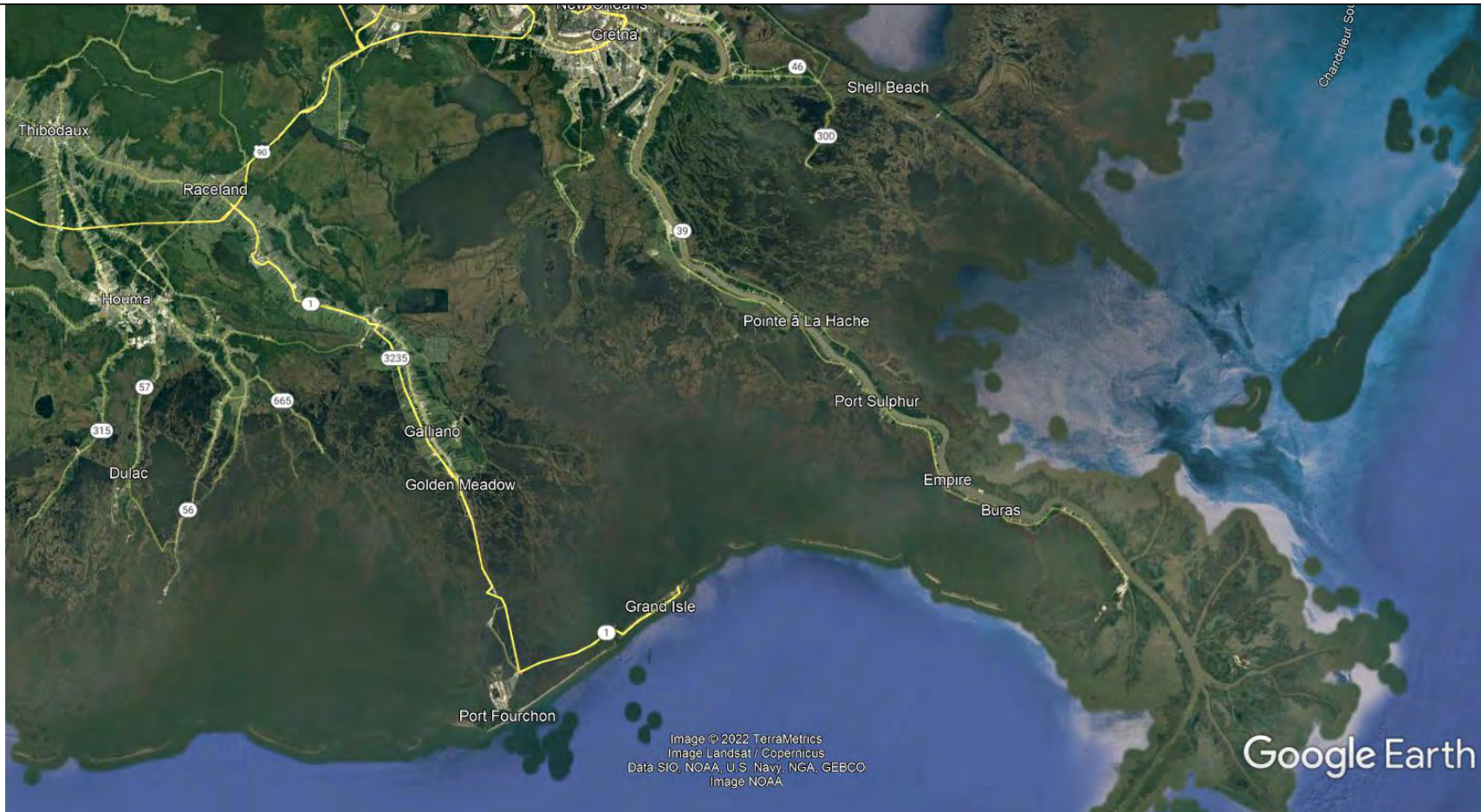
- Andy Nyman, LSU AgCenter and LSU
- Tracy Quirk, Louisiana State University
- Julie Whitbeck, National Park Service
- Albert “Rusty” Gaude, Louisiana Sea Grant, LSU AgCenter
- Quenton Fontentot, Nichols State University
- Simone Maloz, Nichols State University
- Carol Wilson, Louisiana State University
- Dominique Seibert, LSU AgCenter
- Donata Henry, Tulane University

What would a NERR in Louisiana do that is not already being done?

- Research and Monitoring: focus on a portion of the coast
- Education and Outreach: focus on a portion of the coast

Applied research and monitoring within the reserve boundaries...

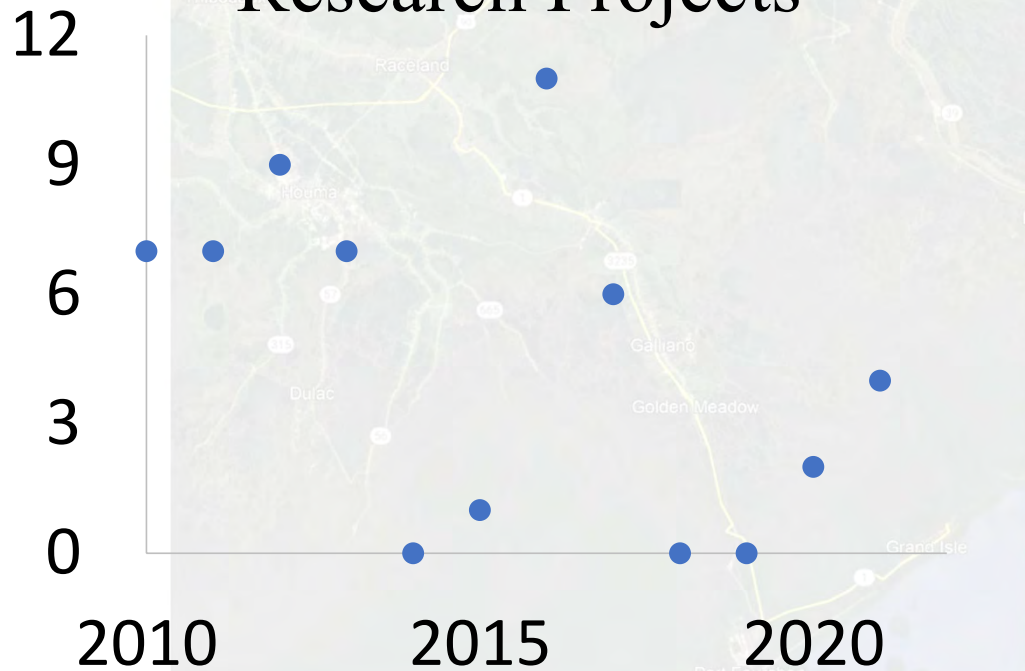
- The Science Collaborative is a competitive grant program for NOAA-funded research in the nationwide NEER system (average of \$3 million/year).



Applied research within the reserve boundaries...

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Research Projects



Key Words

Fish	21
Marsh	16
Wetland	13
Oysters	12
Human	11
Crabs	1
Shrimp	1
Waterfowl	1
Birds	1

Image © 2022 TerraMetrics
Image Landsat / Copernicus
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image NOAA

Google Earth

Balancing Freshwater Needs in Texas' Changing Climate

Project Type:

Collaborative Research

Focus Area(s):

[Climate Change](#), [Water Quality](#)

Keyword(s):

[freshwater](#), [salinity](#), [drought](#), [crab](#)

Reserve(s):

[Mission Aransas, TX](#)

Project Duration:

November 2011 to June 2015

Grant Amount:

\$757,105.00

Project Leads:

- Ed Buskey, Mission-Aransas NERR, ed.buskey@utexas.edu
- Sally Morehead Palmer, Mission-Aransas NERR

Healthy estuaries are vital to the economy of the Texas central coast, supporting the region's multibillion-dollar fishing industry and growing tourist trade. Adequate supplies of freshwater are key to the productivity of these estuaries. However, as the regional population grew and the recent drought deepened, estuaries were receiving less freshwater.

In response to this challenge, the Mission-Aransas Reserve worked with a multidisciplinary team to develop science-based, stakeholder-informed recommendations to support freshwater inflows to maintain healthy estuaries in this region, while balancing other competing needs for freshwater.

 [Project Overview](#) (PDF)

Project Products

Tools

- [Blue Crab Simulation Model for Aransas and Copano](#)



Multimedia

- [Collaborative Approach to Research: Balancing](#)

Evaluating Whether Oyster Aquaculture Can Help Restore Water Quality

Project Type:

Collaborative Research

Focus Area(s):

Ecosystem Service Valuation, Water Quality

Keyword(s):

oyster, aquaculture, nitrogen, nutrient pollution

Reserve(s):

Waquoit Bay, MA

Project Duration:

November 2017 to December 2020

Grant Amount:

\$500,000.00

Project Leads:

- Daniel Rogers, Stonehill College, drogers2@stonehill.edu
- Tonna-Marie Surgeon-Rogers, Waquoit Bay NERR, tonna-marie.surgeon-rogers@state.ma.us
- Ginny Edgcomb, Woods Hole Oceanographic Institute

Project Record in National Catalog:

[NOAA InPort Database](#)

Project Website:

[WBNERR Oyster Aquaculture](#)



This project addressed a critical information gap identified by water quality managers and regulators, specifically: how much nitrogen is removed from coastal waters by common oyster aquaculture methods, and what culturing practices should be adopted to maximize benefits for water quality? To address this question, researchers worked closely with the Town of Falmouth to establish an experiment that mimicked commercial aquaculture practices and allowed for a robust comparison of nitrogen removal rates from three oyster growing systems. They found that all three oyster culturing methods stimulated natural microbial processes that remove nitrogen, which can measurably improve water quality. Project findings have been shared through innovative products to help new growers adopt best practices and allow towns and regulators to decide when shellfish aquaculture is a viable strategy for improving coastal water quality.

A Future for Oysters Along the Pacific

Project Type:

Collaborative Research

Focus Area(s):

[Habitat Restoration](#)

Keyword(s):

[oyster](#), [restoration](#), [decision making](#)

Reserve(s):

[Elkhorn Slough, CA](#), [San Francisco Bay, CA](#)

Project Duration:

November 2011 to May 2015

Grant Amount:

\$908,006.00

Project Leads:

- Matt Ferner, San Francisco Bay NERR, mferner@sfsu.edu
- Kerstin Wasson, Elkhorn Slough NERR, kerstin.wasson@gmail.com

Project Website:

[San Francisco Bay Subtidal Habitat Goals Project](#)

Oysters are the tiny superheroes of coastal environments. They enhance water quality, create habitat, and protect shorelines from storms and erosion. Along the Pacific Coast, native oysters are in decline, due in part to sedimentation, inadequate protection, and unsustainable harvests. Planning for a future that includes healthy native oyster populations depends on our ability to select sites for restoration that not only account for these challenges but also the impacts of a changing climate.

A team led by the Elkhorn Slough and San Francisco Bay Reserves helped to meet this need by developing science-based planning tools that decision-makers along the Pacific Coast can use to select local "sweet spots" for restoration in which oysters can thrive under current and future conditions.

 [Project Overview \(PDF\)](#)

Project Products

Tools

- [DIY Site Evaluation Tool for Olympia Oyster Restoration](#)

Reports

- [A Guide to Olympia Oyster Restoration and Conservation in Central California](#)
- [Kachemak Bay Research Reserve Oyster Population Resiliency: Situation Assessment Report](#)
- [A Guide to Olympia Oyster Restoration and Conservation](#)



Understanding the Role Coastal Marshes Play in Protecting Communities from Storm Surge and Flooding

Project Type:

Collaborative Research

Focus Area(s):

Climate Change, Ecosystem Service
Valuation

Keyword(s):

storm surge, flooding, resilience, wetland
resilience, modeling

Reserve(s):

Hudson River, NY

Project Duration:

November 2016 to September 2020

Grant Amount:

\$677,307.00

Project Leads:

- Peter Sheng, University of Florida,
pete@coastal.ufl.edu
- Sarah Fernald, Hudson River
Reserve, sarah.fernald@dec.ny.gov

Project Record in National Catalog:

[NOAA InPort Database](#)

Project Website:

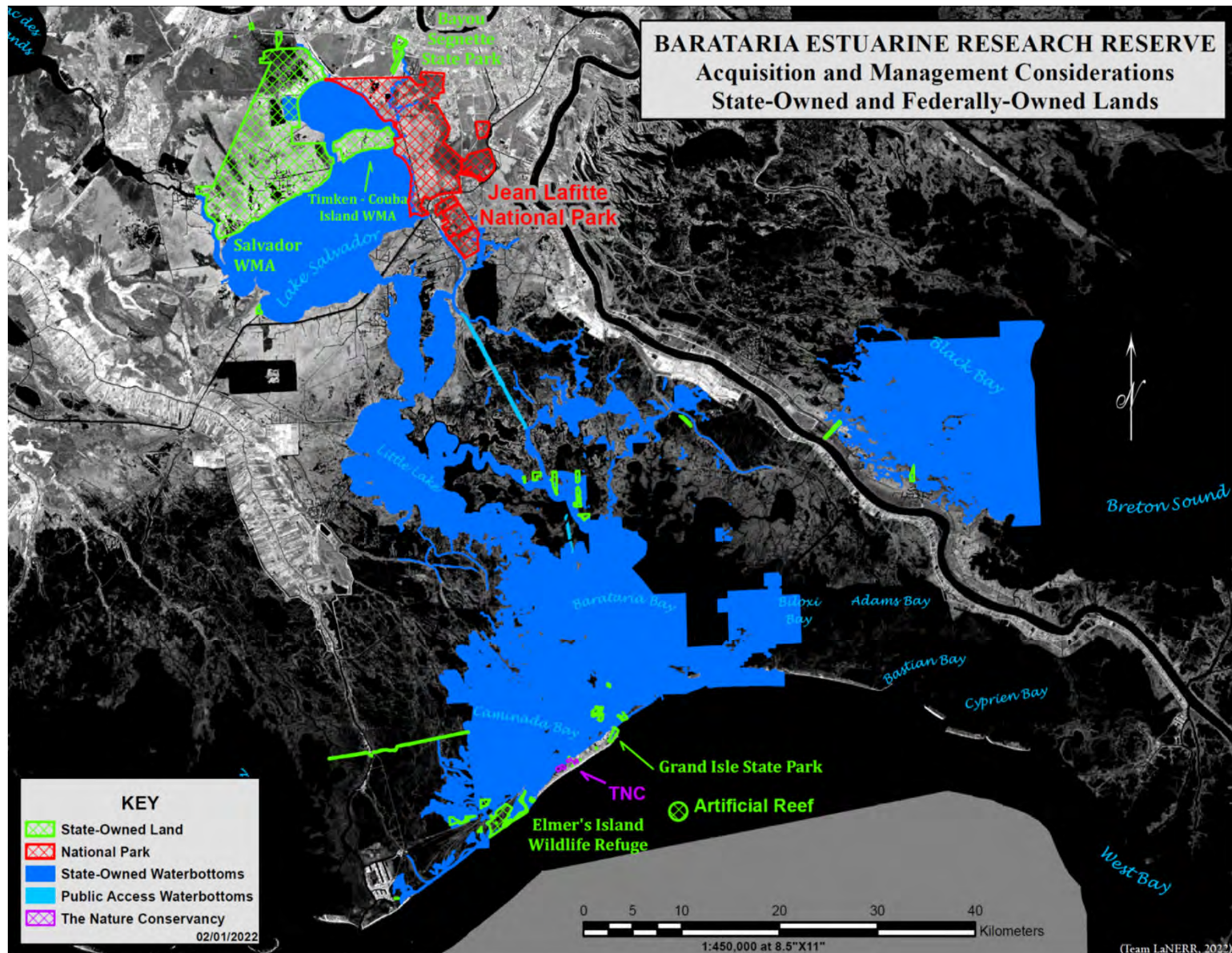
[Piermont Marsh Storm Protection Study](#)



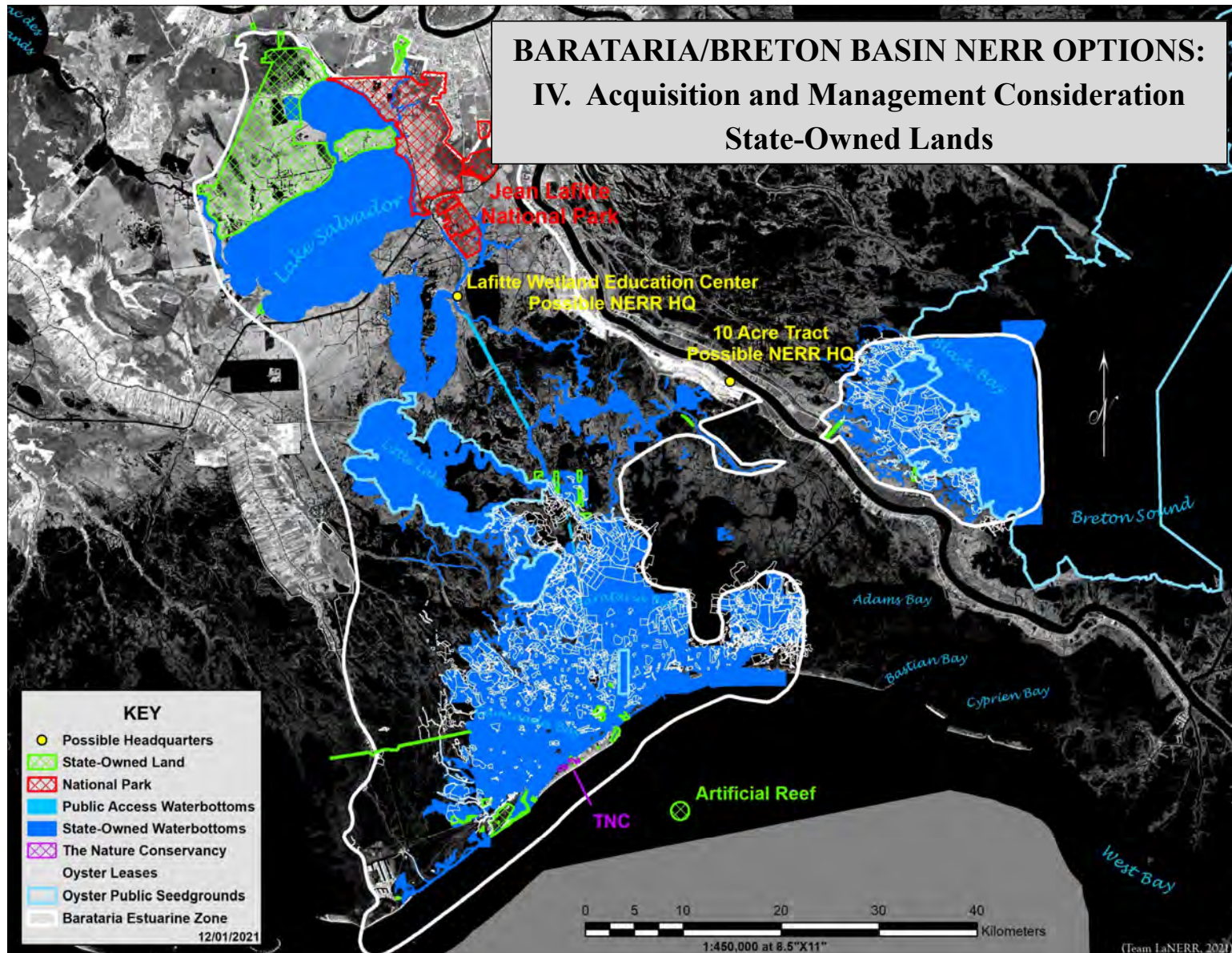
As coastal communities strive to safeguard themselves from increasing storm risks they are looking for ways to maximize the protective powers of their natural features, such as coastal wetlands. This project closely examined one marsh complex that lies adjacent to Piermont Village along the Hudson River Estuary in New York. Village residents wanted to better understand how Piermont Marsh buffers their Village from storm-induced flooding and waves, and whether a proposed plan to restore native cattails within a small area of the phragmites-dominated marsh would lessen its buffering capacity.



This project was shaped by experiences during Hurricane Sandy, an extremely destructive hurricane that made landfall in New Jersey in October 2012.



BARATARIA/BRETON BASIN NERR OPTIONS: IV. Acquisition and Management Consideration State-Owned Lands



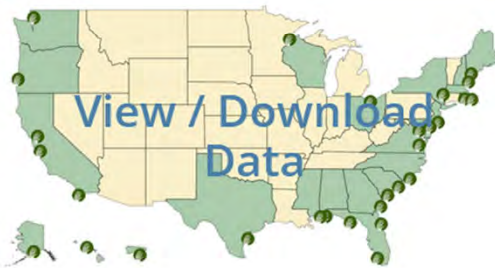


National Estuarine Research Reserve System
Centralized Data Management Office

Home About CDMO About Data Get Data Web Services Science Collaborative



View / Download Data



Suggested Citation Format

Real Time Monitoring Data

SFBCCWQ

SFBCCWQ

02/03/2022 07:15



9.9°C (49.8°F)

88.9%

20.9 psu

pH 7.7 units

From the CDMO

The CDMO is excited to announce the launch of our new **SWMP Mobile application**. Near real-time SWMP data is now available on your smartphone or tablet at:
www.nerrsdata.org/mobile

Our **Data Graphing and Export System** has been updated and now has enhanced graphing capabilities! Want to easily export or graph data? If so, check out our [Data Graphing and Export System!](#)

Department of Commerce | NOAA | National Ocean Service | Office for Coastal Management | NERRS | Webmaster

Site hosted by NOAA's National Estuarine Research Reserve System, Centralized Data Management Office

NERRS Monitoring

NOAA's National Estuarine Research Reserve System acknowledges the importance of long-term environmental monitoring programs and data dissemination through the support of the NERRS System-wide Monitoring Program (SWMP).



Single-click the yellow symbology on the map to view CRMS Site information.

NERRS Monitoring

Louisiana already has a world-class system for monitoring water salinity, water depth, and vegetation, but currently lacks funding to monitor the effects of hurricanes, restoration, etc. on fish and wildlife.



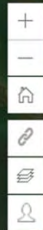


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Thus, a Louisiana NERR might emphasize fish and wildlife in its monitoring, and that emphasis could be focused within the boundaries of a Barataria Basin NERR.



Long: -90.257, Lat: 29.56

Earthstar Geographics Powered by Esri

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https://www.nola.com/news/environment/article_776f2198-6012-11eb-8aca-83812682721d.html

Massive, unexplained bivalve die-off sends many Louisiana oystermen back to square one

BY HALLE PARKER | STAFF WRITER

PUBLISHED JAN 31, 2021 AT 7:00 PM | UPDATED JAN 31, 2021 AT 8:54 PM



Longtime oysterman Mitch Jurisich scrapes oyster tongs along the water bottom to check the mortality rate of oysters on his lease after thousands of sacks worth of oysters off of Plaquemines Parish's west bank. (Photo by Halle Parker, NOLA.com, The Times-Picayune |

HALLE PARKER

NERR **Headquarters** serve as community centers, promoting education that is locally relevant to coastal management.

Example of a NERR Headquarters: Grand Bay National Estuarine Research Reserve, Jackson County, Mississippi.





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Education offsite and at NERR **Headquarters**...

- K-12 Estuarine Education Program: Helps educators bring estuarine science into their classrooms through hands-on learning, experiments, fieldwork, and data explorations.
- Coastal Training Program: Training and technical assistance on relevant coastal management issues to local coastal decision-makers.
- Community Programs: Adult and family activities.



Ecotourism Potential of a NERR Headquarters

If 1% of tourists visiting New Orleans took a daytrip to a NERR, the NERR would have 197,500 visitors in addition to traditional visits.

N.O. Tourism Spending Breaks Records in 2019

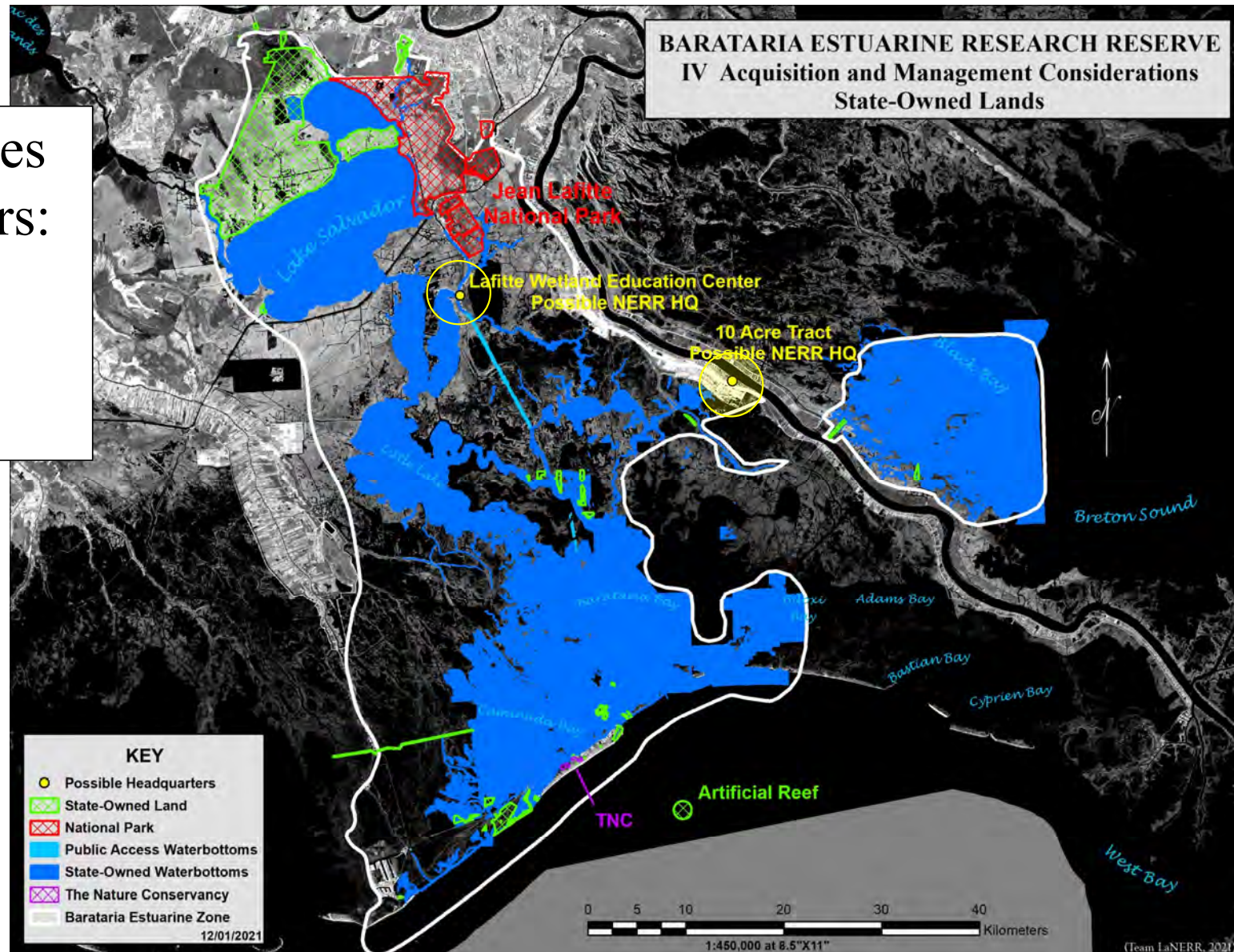
05/11/2020 by Rich Collins



NEW ORLEANS — A new report from D.K. Shifflet & Associates says that, in 2019, New Orleans welcomed **19.75 million visitors**, which is a 6.7 percent increase in visitors compared to the previous year. Visitors to New Orleans in 2019 spent \$10.05 billion, a 10.3 percent increase over 2018.

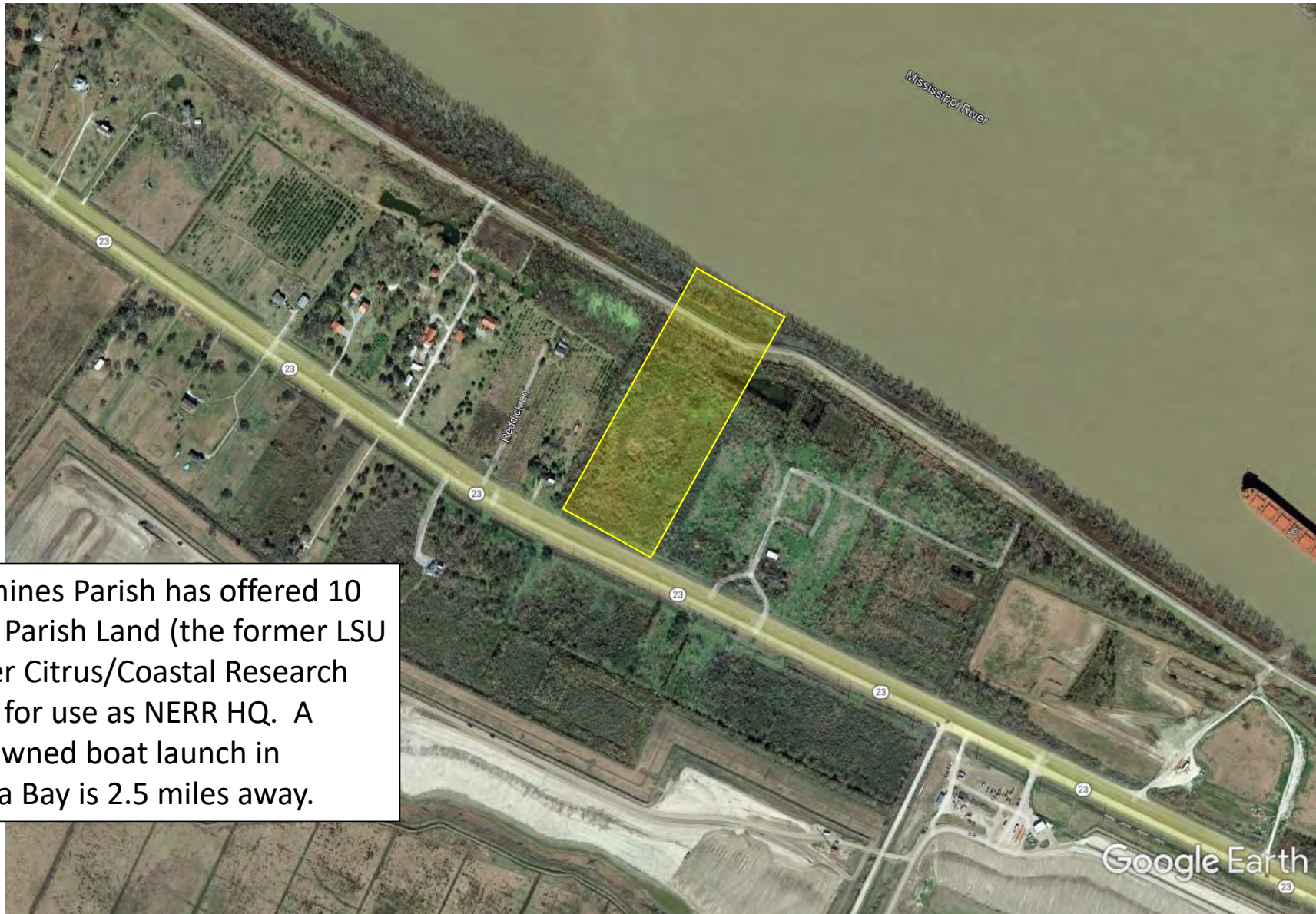
Two potential sites
for a Headquarters:

- Lafitte
- Plaquemines
Parish





A NERR HQ could be located near Lafitte's Barataria Museum and Wetland Trace.



Plaquemines Parish has offered 10 acres of Parish Land (the former LSU AgCenter Citrus/Coastal Research Station) for use as NERR HQ. A parish-owned boat launch in Barataria Bay is 2.5 miles away.



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The 246,766 acre Apalachicola National Estuarine Research Reserve.



Figure 45. Major oyster bars of the Apalachicola estuary (Livingston, 1983)

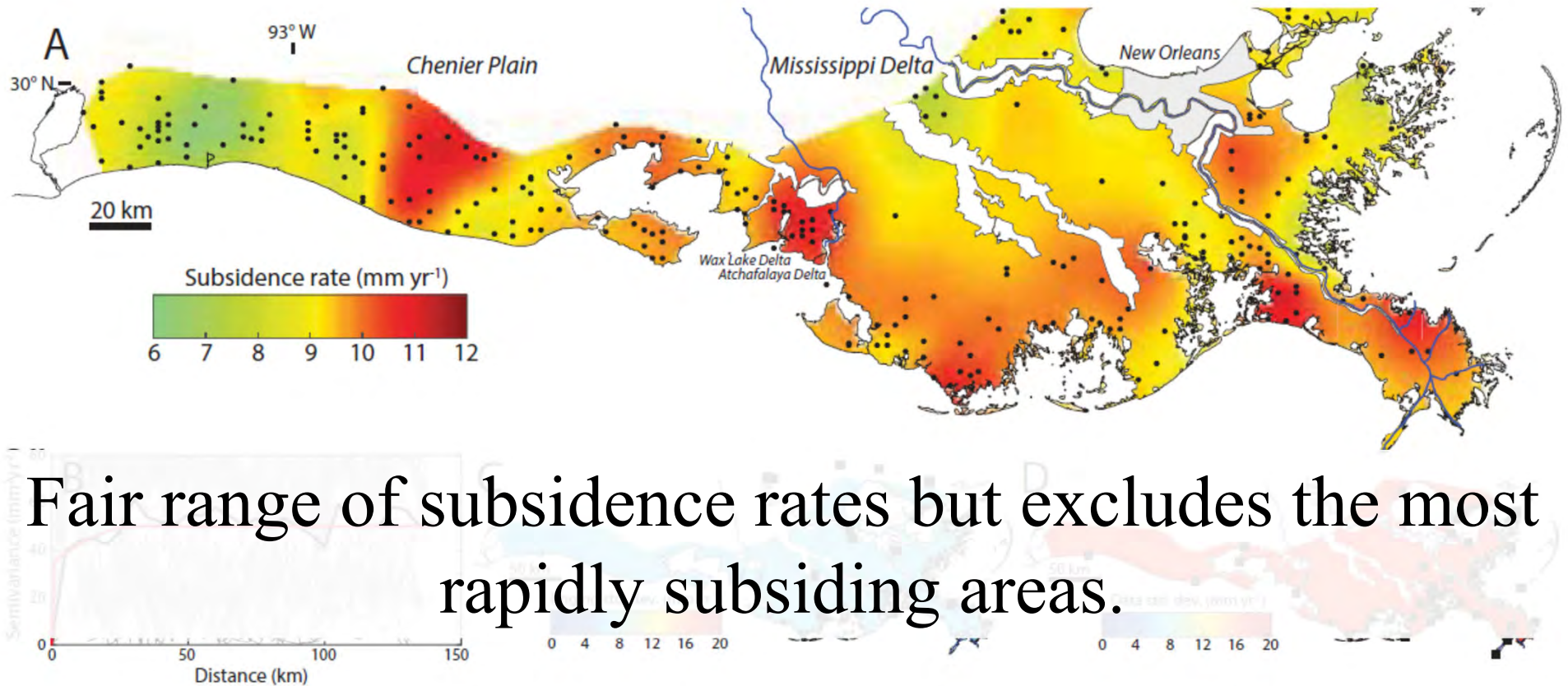


Figure 1. (A) Subsidence map for coastal Louisiana based on geostatistical interpolation (kriging) of 274 observations (black dots) of land-surface subsidence rates over the past 6–10 years. Areas in white and gray are agricultural and urban, respectively, and located outside of the wetlands. (B) Semivariogram of the data using 100 draws from different kriging options (gray), the data mean (black), and the kriging model (red). (C) Uncertainty (standard deviation) of the kriging estimate. Black squares show GPS stations. (D) Uncertainty (standard deviation) of the underlying data. Black squares show National Oceanic and Atmospheric Administration (NOAA) tide gauges. Note that the subsidence map can easily be converted into a relative sea-level rise map by adding the climate-driven sea-level component.

