

# Lessons Learned from Marsh Creation Vegetation Monitoring – Assessing the need for Plantings and Regional Variation in Vegetation Establishment

Leigh Anne Sharp, Bernard Wood and Danielle Richardi  
CPRA Operations



committed to our coast

# Acknowledgements

- **USGS** - Sarai Piazza, Brady Couvillion, Gregg Snedden, Michelle Fischer, Greg Steyer, Craig Conzelmann
- **CPRA** – Lafayette, New Orleans, and Thibodaux Regional Offices, Ed Haywood, Rick Raynie
- **CWPPRA – Coastal Wetland Planning Protection and Restoration Act Federal Partners**



**Q: Do we need to plant marsh creation projects?**

**A: No, not really.**



But the inclination to do so is understandable.

## **Q: Do we need to plant marsh creation projects?**

**A: No, not really.**

If a borrow source has previously been shown to self-vegetate, there is no need to plant unless you want to influence the resulting vegetation community.

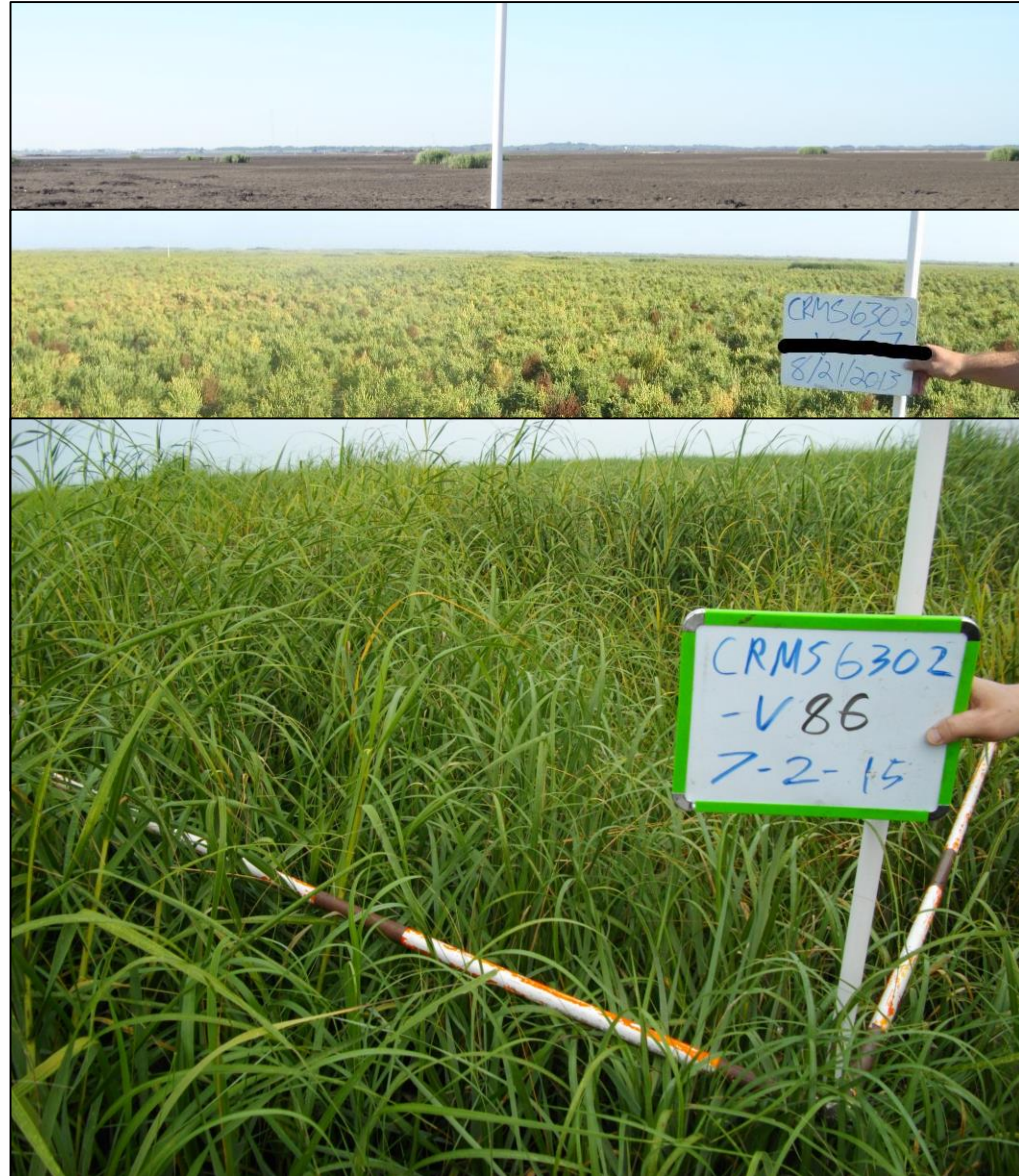
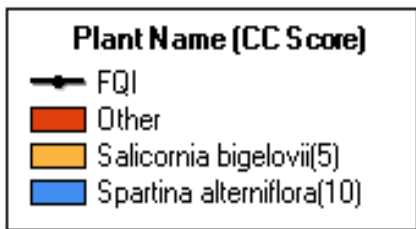
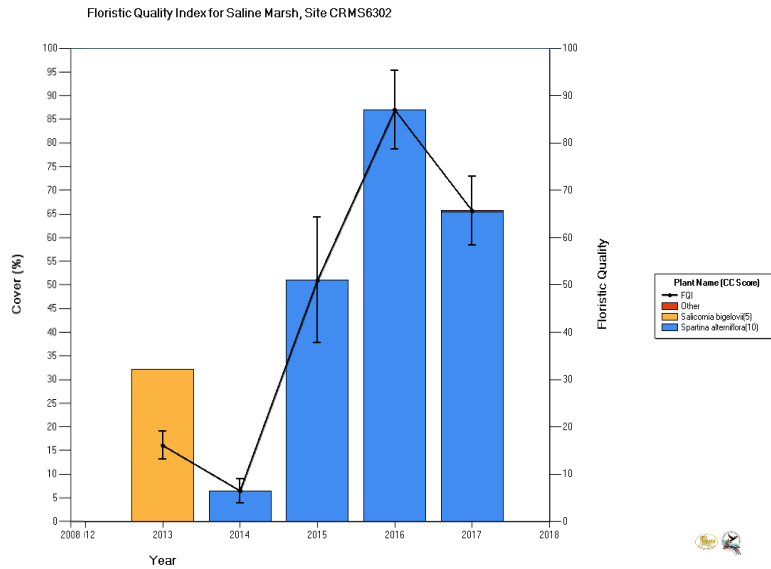
Plantings on a nearby cycle will influence future cells.

### **Self-vegetating borrow sources:**

- Calcasieu Ship Channel
- Mississippi River
- Lake Pontchartrain
- Lake Boudreaux
- Bayous Perot and Rigolettes



**Q: What does vegetation succession look like in created marsh?**  
**A: Succulents then grasses and shrubs.**



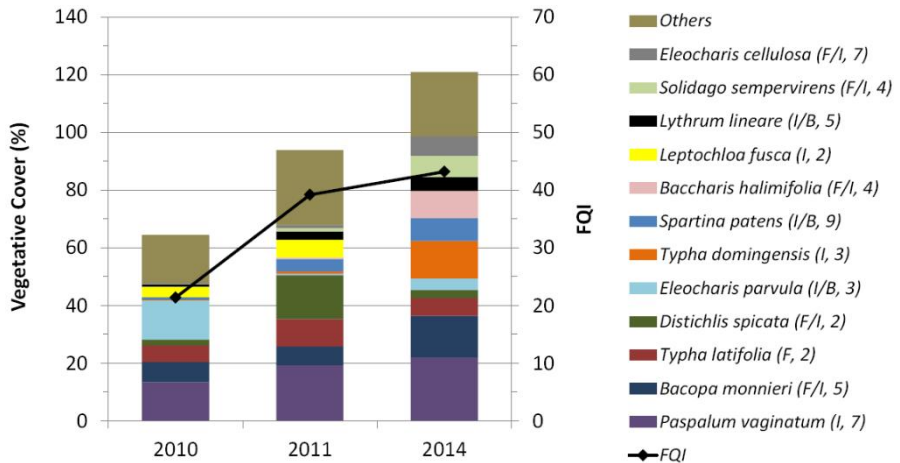
**Q: Are the species that emerge the same across the coast?**

**A: No. MR sediments yield higher diversity and support fresh to intermediate vegetation.**

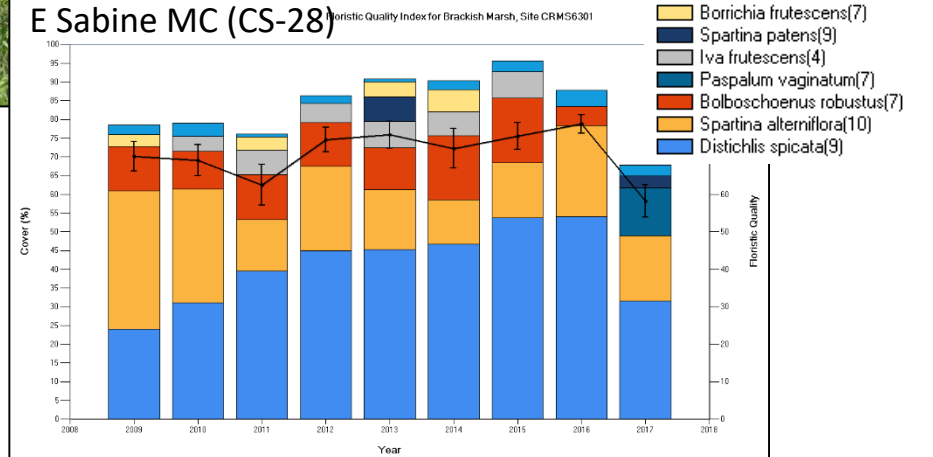
Mississippi River sediments show higher diversity in four years than Calcasieu Ship Channel sediments do in 15 years.



MR-Bayou Dupont(BA-39)

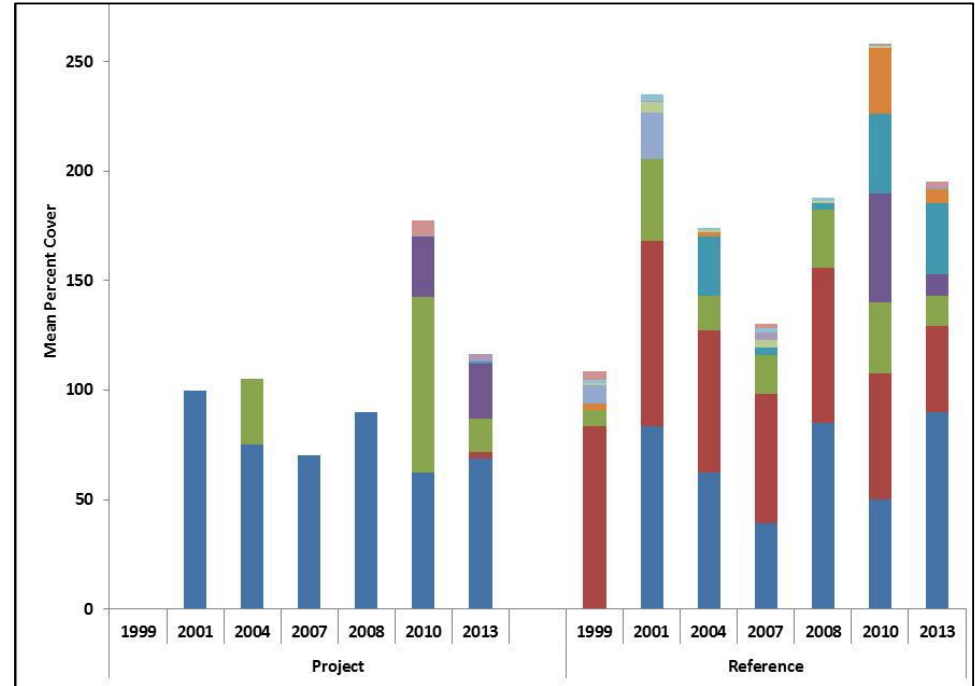
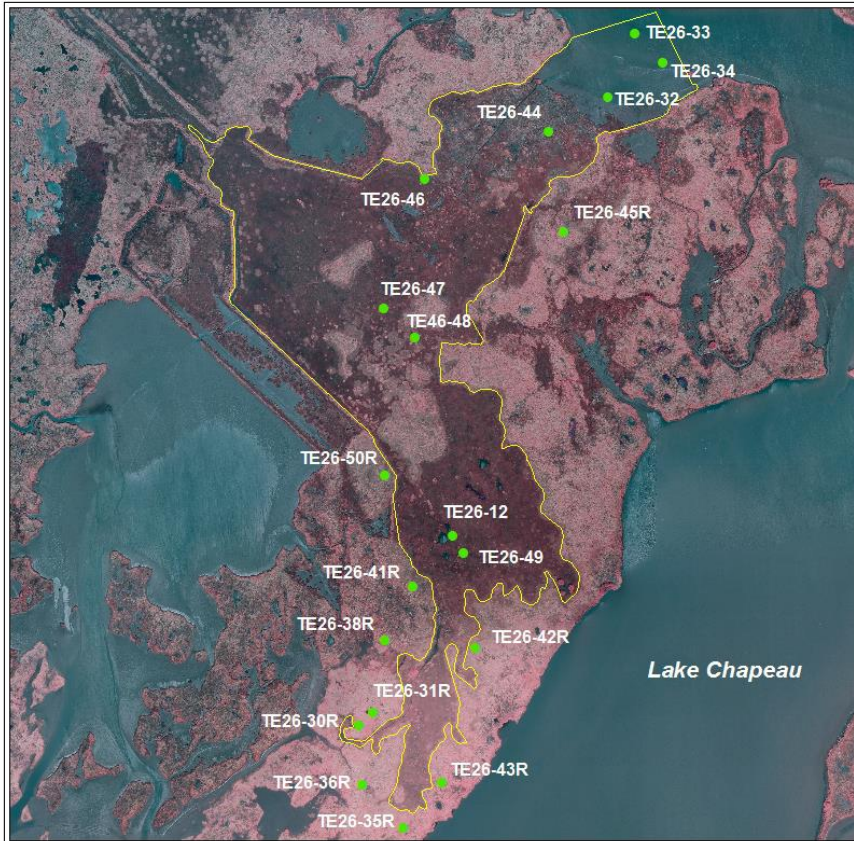


E Sabine MC (CS-28)



# Planted *Spartina alterniflora* can change the community in adjacent pre-existing marsh

Lake Chapeau MC (TE-26)



- Other
- Symphytotrichum tenuifolium*
- Lythrum lineare*
- Ipomoea sagittata*
- Schoenoplectus pungens*
- Vigna luteola*
- Schoenoplectus americanus*
- Schoenoplectus robustus*
- Distichlis spicata*
- Spartina patens*
- Spartina alterniflora*

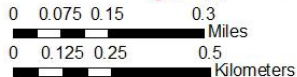


Data Source:  
Office of Coastal Protection and Restoration  
Operations Division  
Biological Monitoring Section  
Thibodaux Regional Office

2012 DOQQ

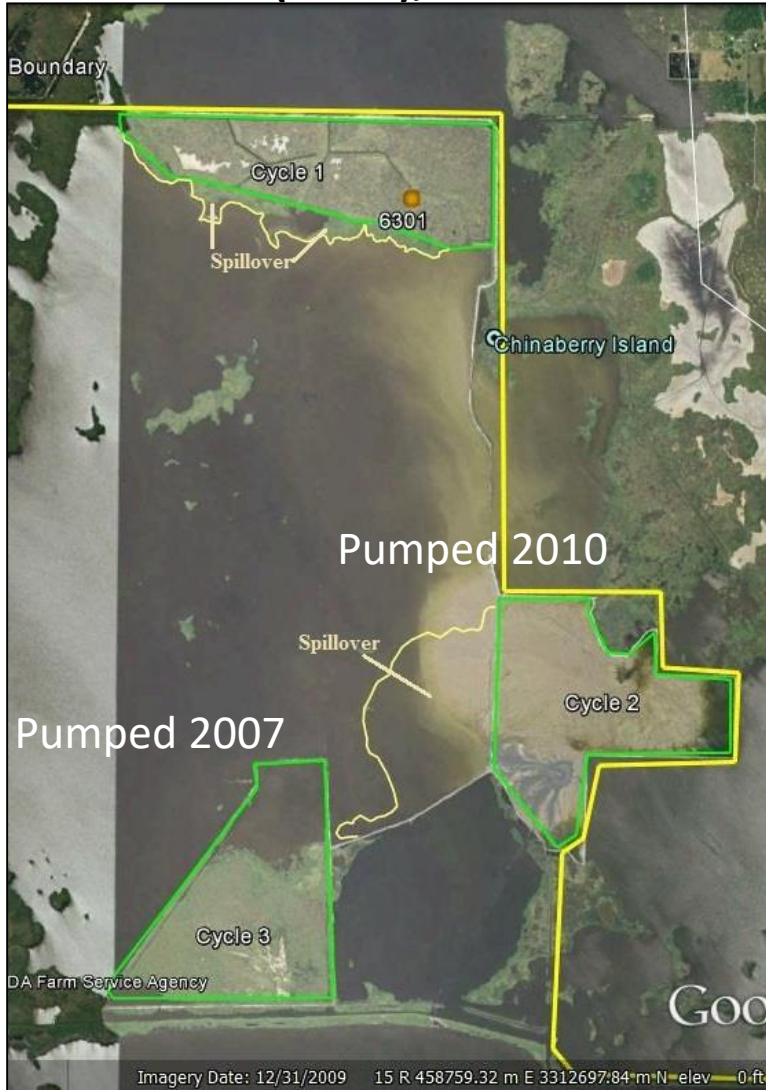
Date: May 22, 2014  
Map ID: 2014-TRO-041

- Vegetation Stations
- Fill Area



# Wild, flood tolerant *Spartina alterniflora* colonized submerged mudflats in the CS-28 project area during the 2011 drought.

E Sabine MC (CS-28), December 2010

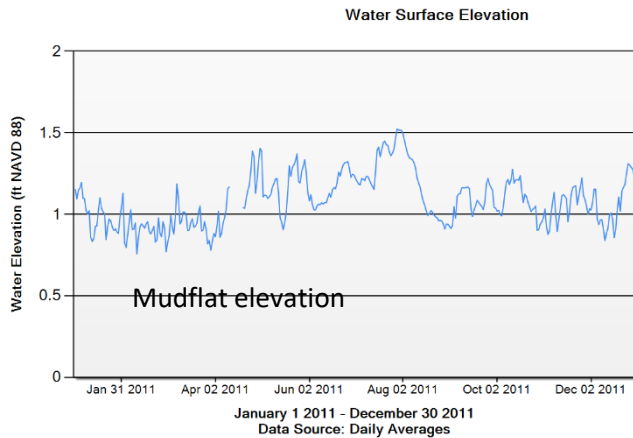
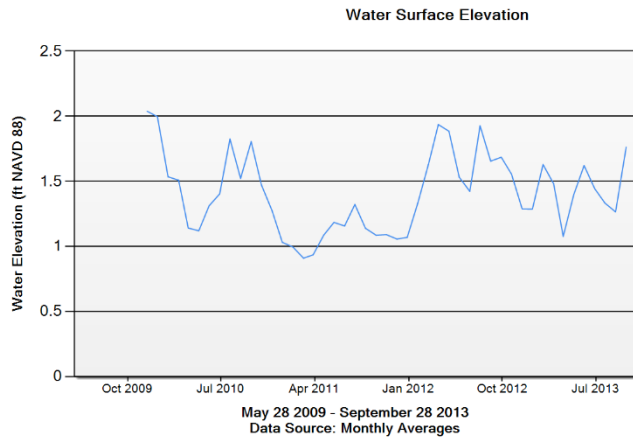


May 2013





# Wild, flood tolerant *Spartina alterniflora* colonized submerged mudflats in the CS-28 project area during the 2011 drought.



**CPRA funded a study at BA-36 that assessed a whole suite of factors than we don't typically monitor.**

**Find it in CIMS and come see Irv right here at 4:00.**

**FINAL REPORT**

**CONTROLS ON THE SUCCESSFUL USE OF DREDGED SEDIMENTS FOR  
THE RESTORATION AND REHABILITATION OF BRACKISH MARSHES ON  
THE BARATARIA BASIN LANDBRIDGE**

BY

IRVING A. MENDELSSOHN<sup>1</sup>, MICHAEL D. MATERNE<sup>2</sup>, SEAN A. GRAHAM<sup>1</sup>,  
SHEILA ROHWER<sup>2</sup>, AND MANOCH KONGCHUM<sup>2</sup>

<sup>1</sup>DEPARTMENT OF OCEANOGRAPHY AND COASTAL SCIENCES  
LOUISIANA STATE UNIVERSITY  
BATON ROUGE, LA 70803

<sup>2</sup>LOUISIANA STATE UNIVERSITY AGRICULTURAL CENTER,  
SCHOOL OF PLANT, ENVIRONMENTAL, AND SOIL SCIENCES  
LOUISIANA STATE UNIVERSITY  
BATON ROUGE, LA 70803

SUBMITTED TO:

MELISSA HYMEL  
LOUISIANA COASTAL PROTECTION AND RESTORATION AUTHORITY  
450 LAUREL STREET, SUITE 1500  
P.O. BOX 44027  
BATON ROUGE, LA 70804-4027

IN PARTIAL FULFILLMENT OF:  
CPRA CONTRACT No. 2503-11-39

DECEMBER 31, 2015

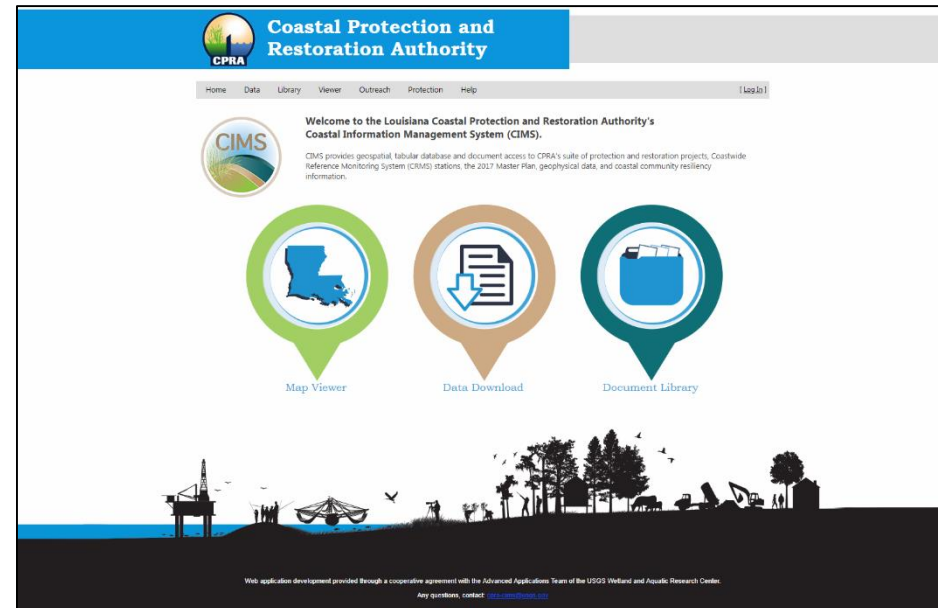
The screenshot shows the CPRA CIMS Document Detail page. At the top is the CPRA logo and the text 'Coastal Protection and Restoration Authority'. Below this is a navigation menu with links for Home, Data, Library, Viewer, Outreach, Protection, and Help, along with a [Log In] link. The main content area displays the document title, author information (Irving A. Mendelsohn, Michael D. Materne, Sean A. Graham, Sheila Rohwer, and Manoch Kongchum), the date (12-31-2015), and document type (Contracted Study). It also lists the authors as Louisiana State University and the project as BA-0036, LA-0012-2, Barataria Marsh Creation. A download link for the PDF report is provided. At the bottom of the page is a silhouette illustration of a coastal landscape with an oil rig, marshes, and trees, and a footer note about web application development provided through a cooperative agreement with the USGS Wetland and Aquatic Research Center.

<https://cims.coastal.louisiana.gov/RecordDetail.aspx?Root=0&sid=18729>

Soil physio-chemistry, bulk density, nutrients  
Species richness, above and belowground  
biomass, cellulose and litter decomposition,  
accretion, and elevation related to sediment  
slurry applications

# There are CRMS and CRMS-like sites in some marsh creation project areas. Those data along with all CPRA monitoring data and reports are publically available online.

- CRMS6301 – E Sabine MC, Cycle 1 (CS-28)
- CRMS6302 – Black Lake MC (CIAP)
- CRMS3567 – Bayou Bonfouca MC (PO-104)
- TV21-CR01 and CR02 – E Marsh Island MC (TV-21)
- BA39-01, 02, and 03 – MR Sediment Delivery System - Bayou Dupont (BA-39)





**CONNECT WITH US!**



**@LouisianaCPRA**



**[www.coastal.la.gov](http://www.coastal.la.gov)**