

State & Federal: Defining a Shared Path for Gulf Restoration (Louisiana)

National Oil Spill Commission

September 28, 2010

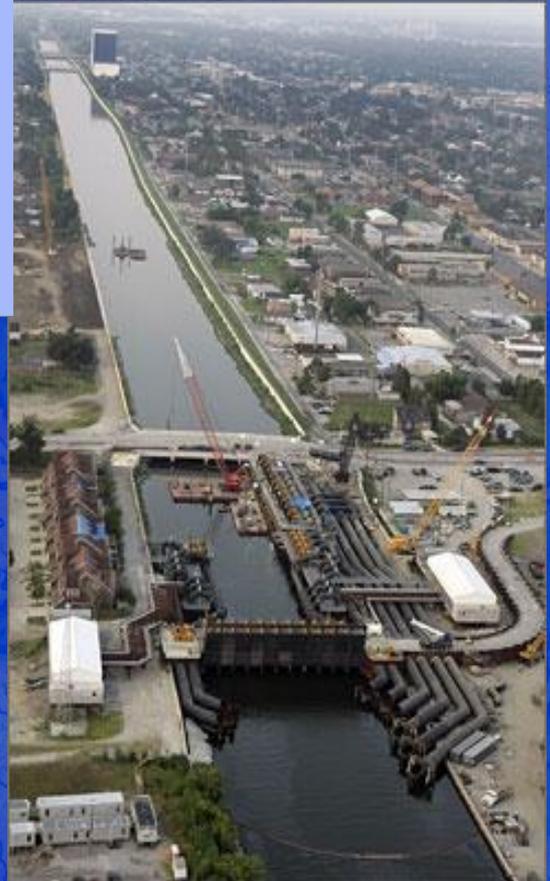
garret graves

Chair, Coastal Protection and Restoration Authority
Lead Trustee, Natural Resources Damage Assessment
garret@LA.gov; 225.342.7669



Planning for the Future: Understanding Current Needs

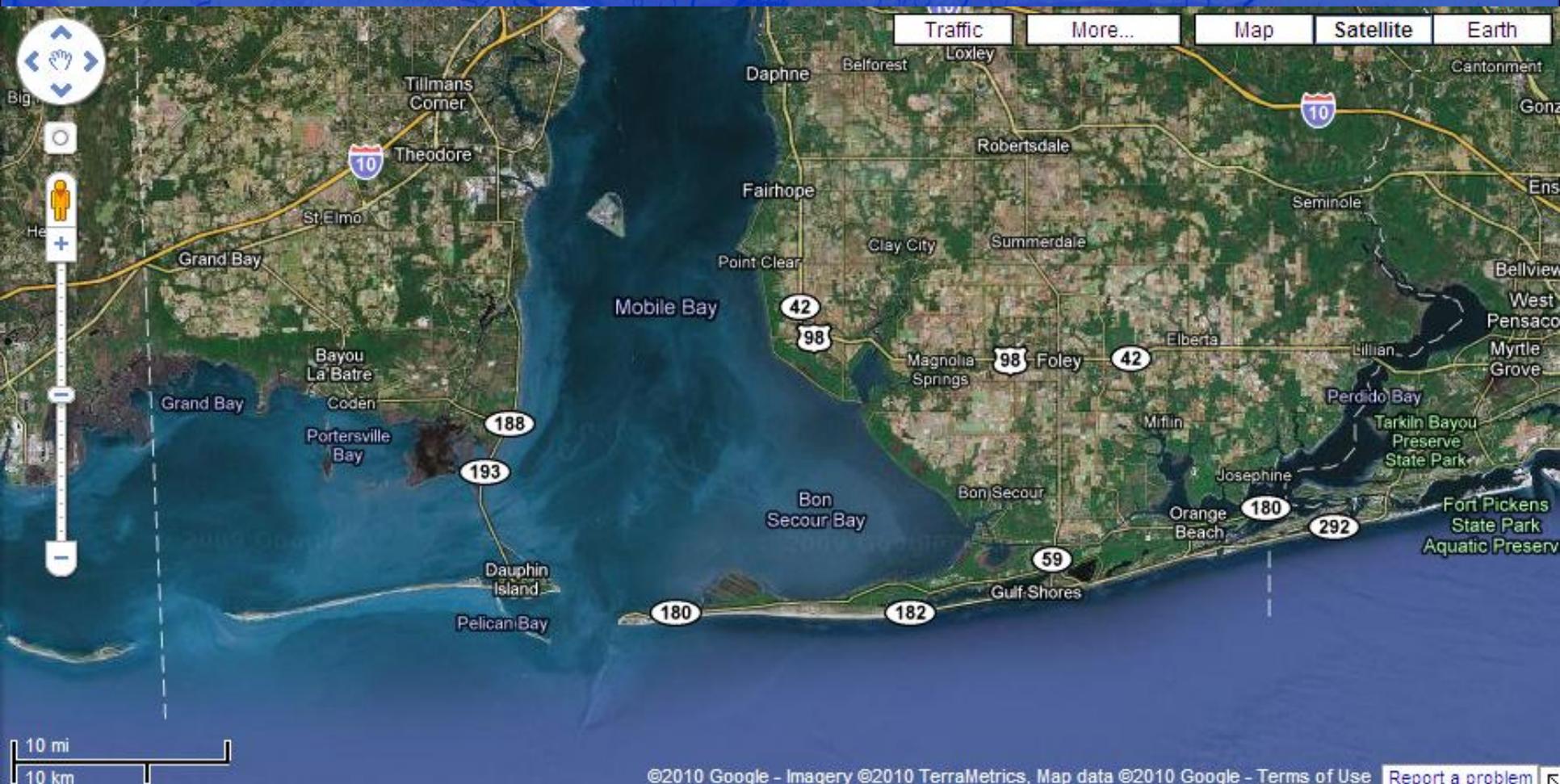
- 5 of the Top 15 ports
- Largest Port Cargo Complex
- Only Intermodal Medium to Over 30 states
- Most Productive Ecosystem in North America
- Top Seafood Producer
- Top Source of Domestic/Imported Energy



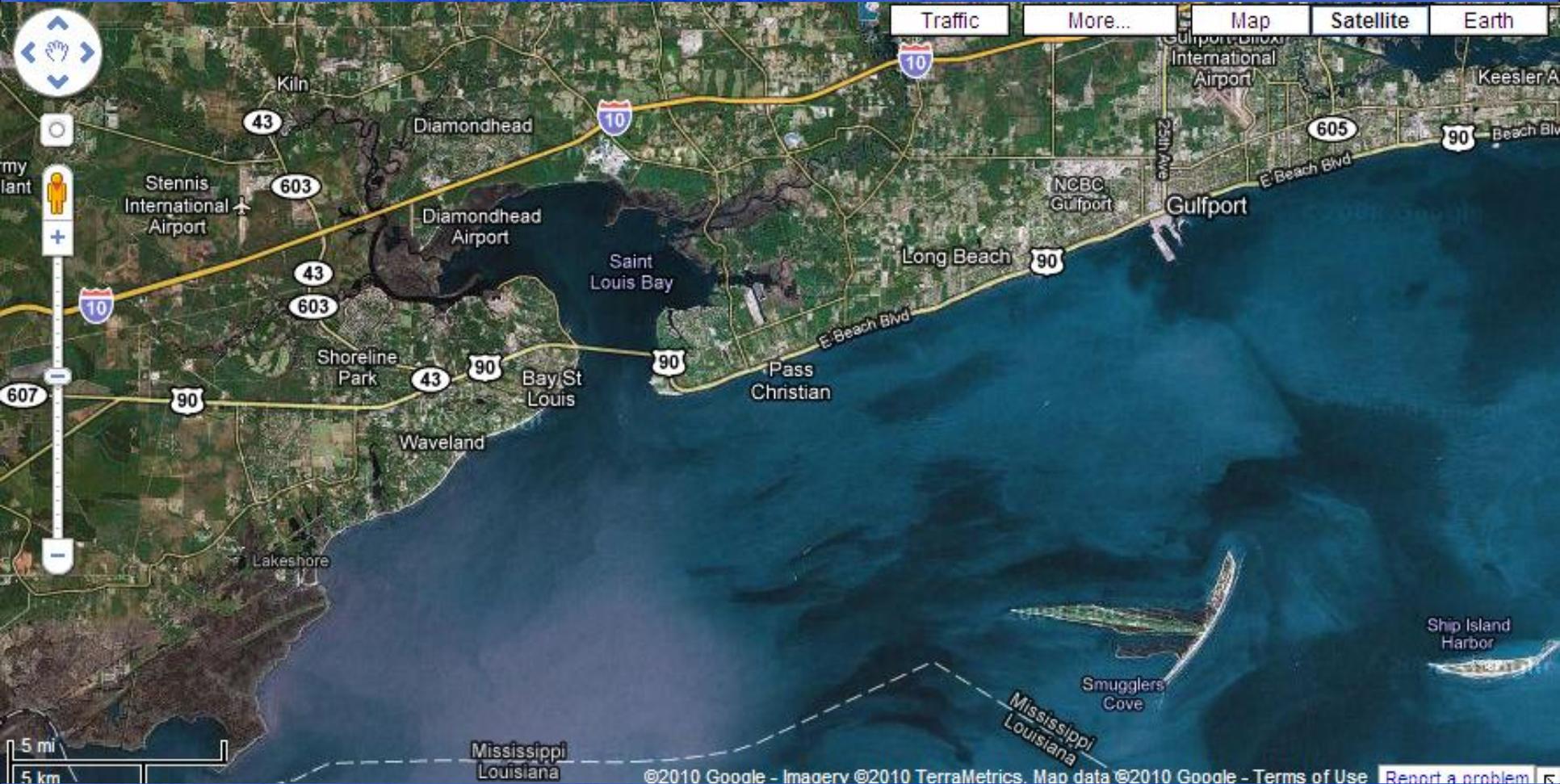
Coastal Florida



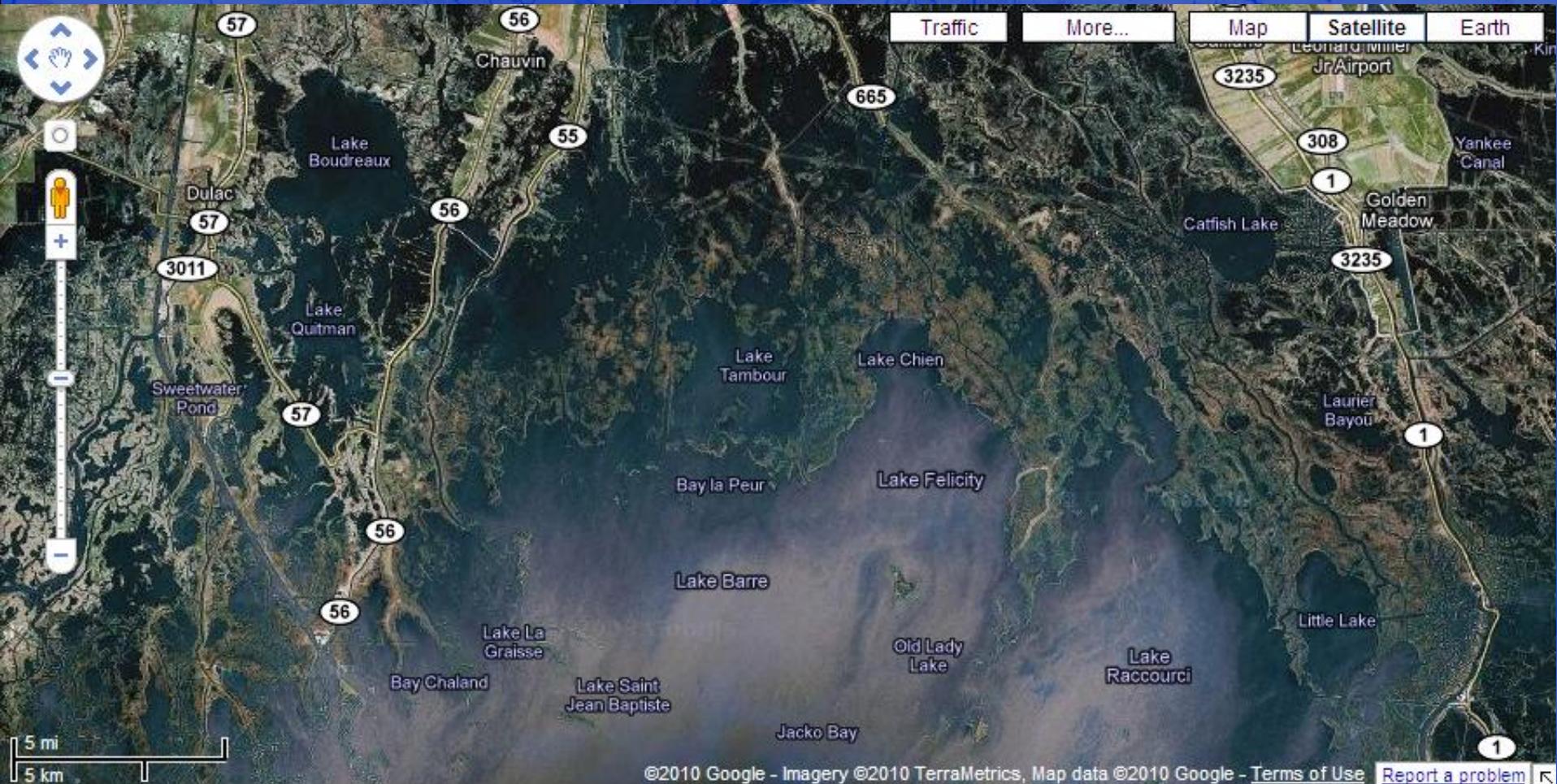
Coastal Alabama



Coastal Mississippi



Coastal Louisiana

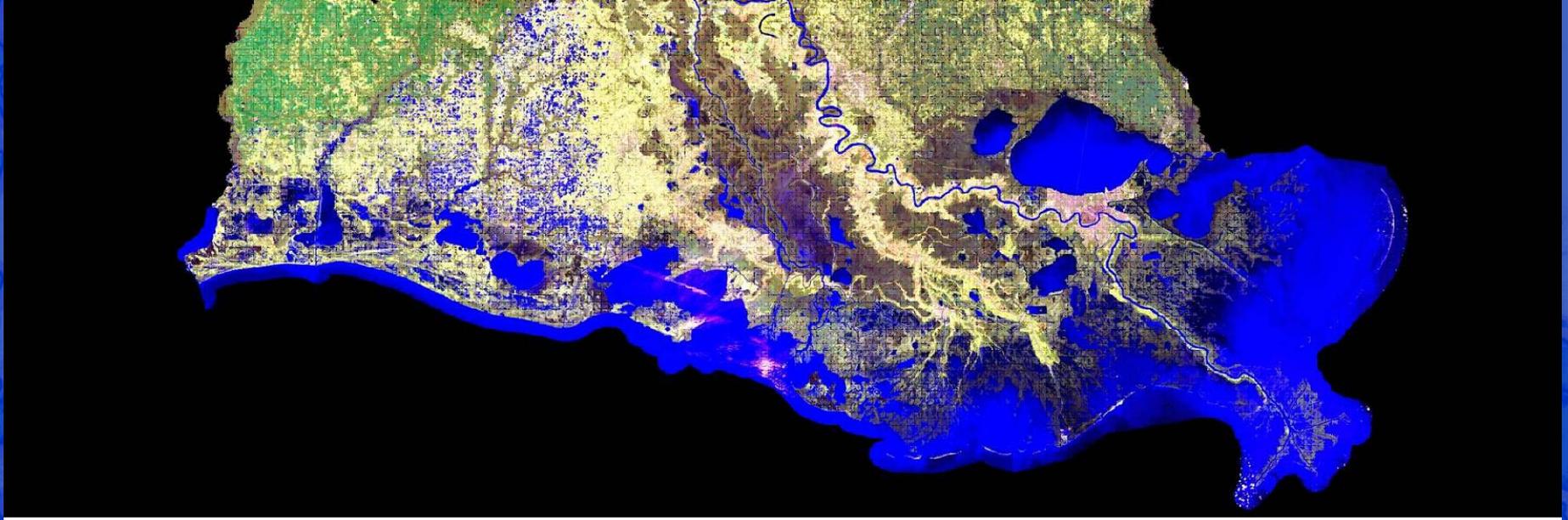


Coastline/Shoreline

STATE	Total Coastline (miles)	Tidal Shoreline (miles)	Tidal Shoreline (feet)	Threatened Shoreline (within 350 miles of incident site)
Louisiana	397	7,721	40,766,880	40,766,880
Mississippi	44	359	1,895,520	1,895,520
Alabama	53	607	3,204,960	3,204,960
Florida	770	8,402*	44,362,560	16,857,773

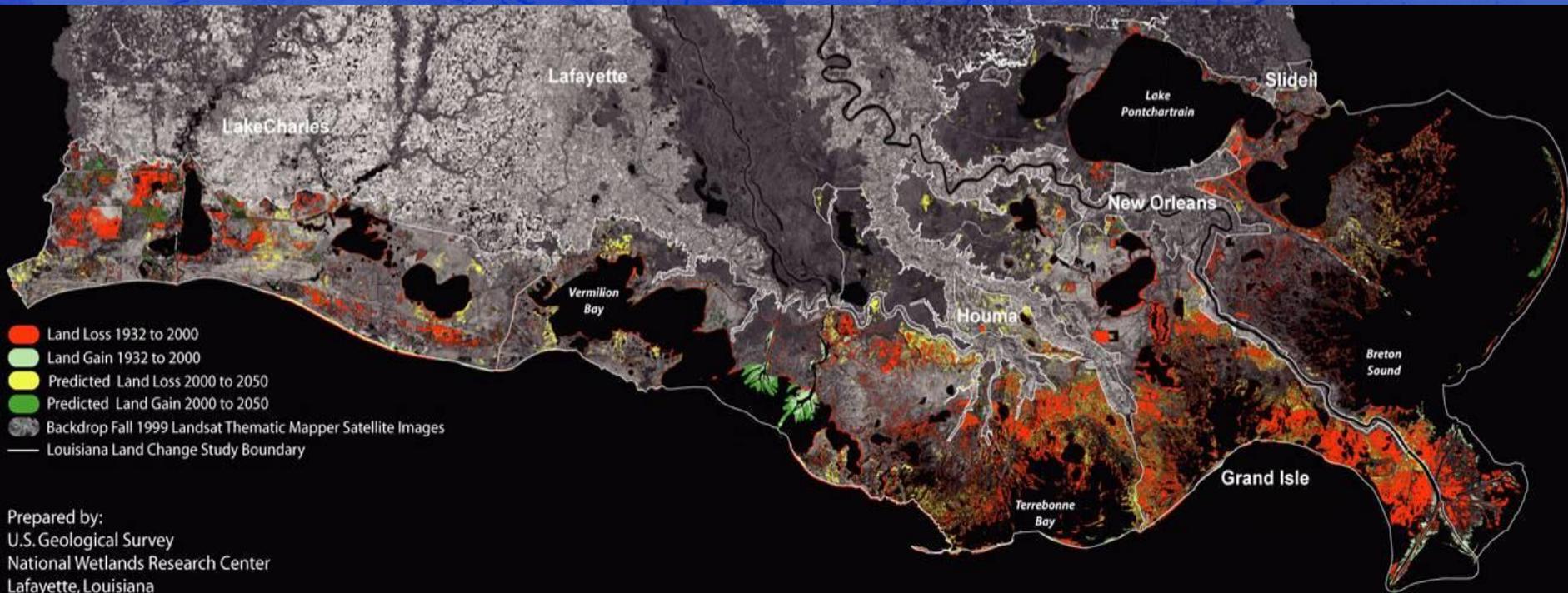
NOTE: compare coastline miles to shoreline miles. Louisiana has a disproportionate ratio

Coastal Louisiana



7,721 miles of tidal shoreline

Coastal Land Loss

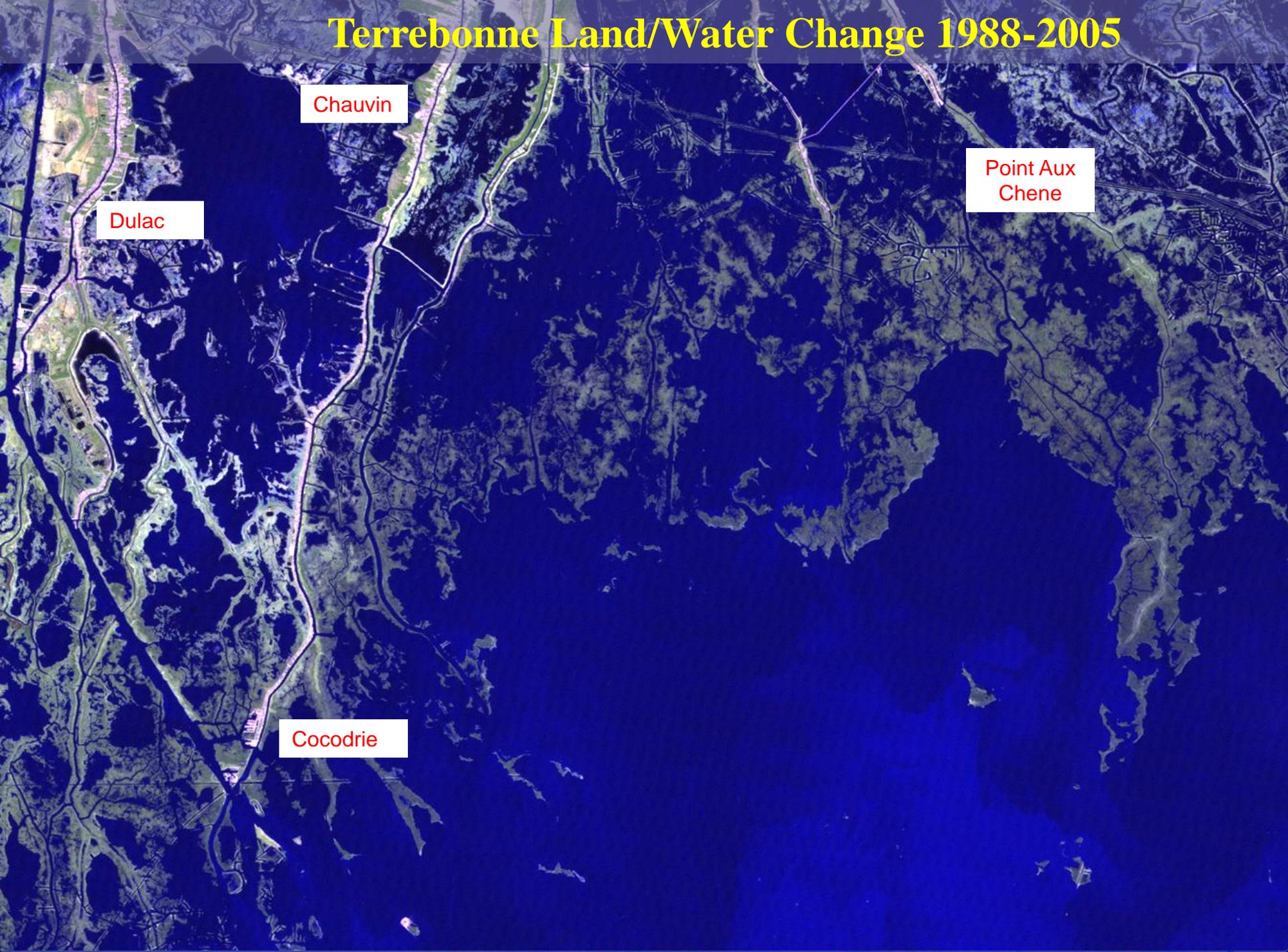


Over 2300 square miles lost since 1930



CPRA
Coastal Protection and
Restoration Authority of Louisiana

Terrebonne Land/Water Change 1988-2005



Chauvin

Point Aux
Chene

Dulac

Cocodrie

Oil Spill/Coastal Recovery Funding

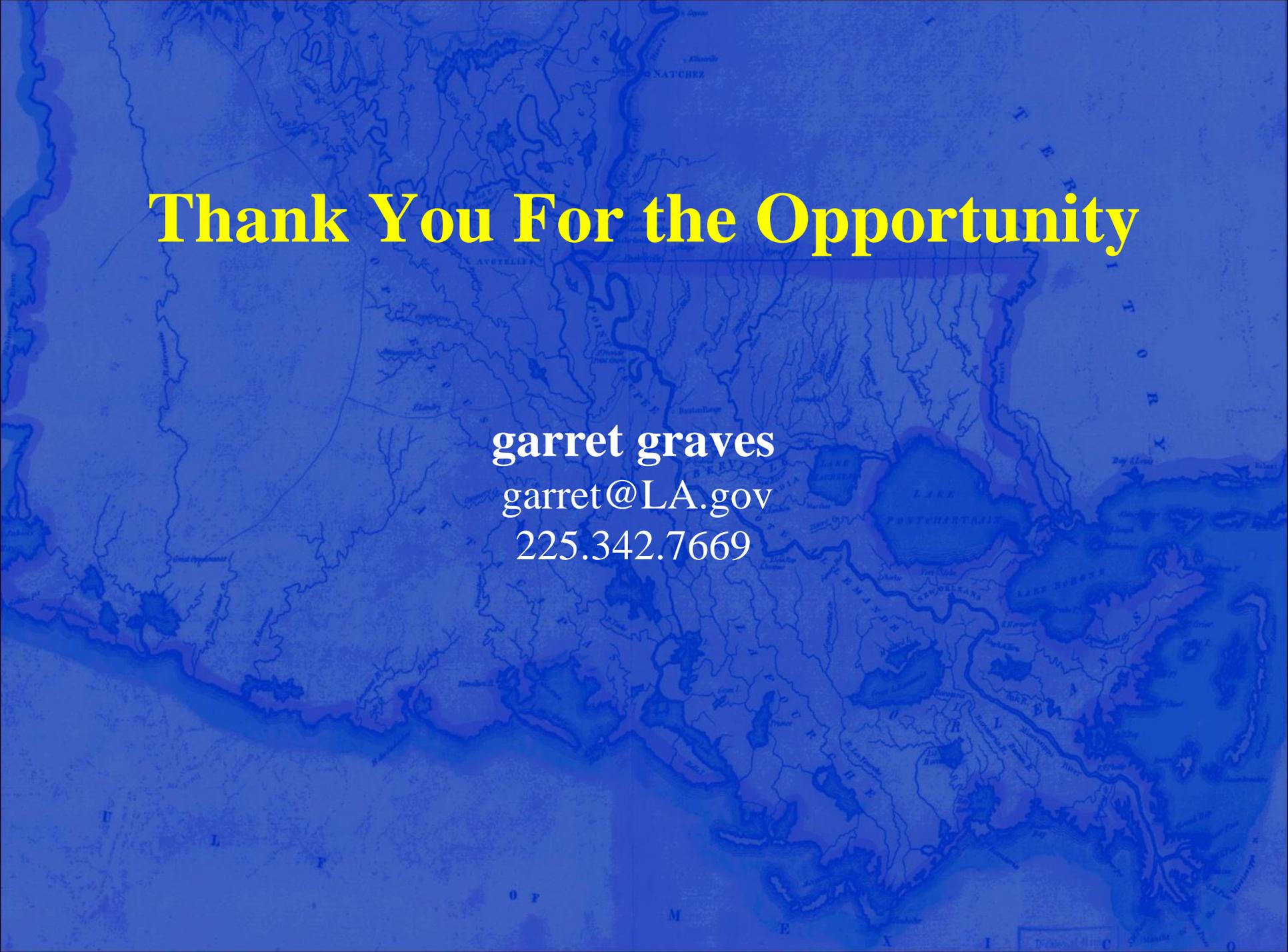
1. Clean Water Act fines
 - Supplemental Environmental Programs
2. Natural Resources Damage Assessment
 - Actions to remediate spill impacts
3. Gulf of Mexico Energy Security Act funding
 - Offshore energy revenues
4. Hurricane Protection System mitigation funding
 - \$250 million available today
5. Fiscal Year 2012 appropriations
 - Multi-agency participation



Oil Spill/Coastal Recovery Implementation Structure

1. Joint state-federal decision making
2. Modeled after the Coastal Wetlands Planning Protection and Restoration Act
3. USFWS, NOAA and EPA rotating co-chairs
4. State co-chair
5. Alternative NEPA arrangements
6. Programmatic authority for sustainability/resiliency efforts



A blue-tinted map of Louisiana is the background. The map shows the state's outline, major rivers like the Mississippi and Atchafalaya, and several large lakes including Lake Cadeau, Lake de Cadeau, Lake de la Pêche, Lake de la Rivière, Lake de la Vierge, Lake de la Trinité, Lake de la Madeleine, Lake de la Sainte-Trinité, Lake de la Sainte-Vierge, Lake de la Sainte-Trinité, Lake de la Sainte-Vierge, Lake de la Sainte-Trinité, and Lake de la Sainte-Vierge. The text is overlaid on the map.

Thank You For the Opportunity

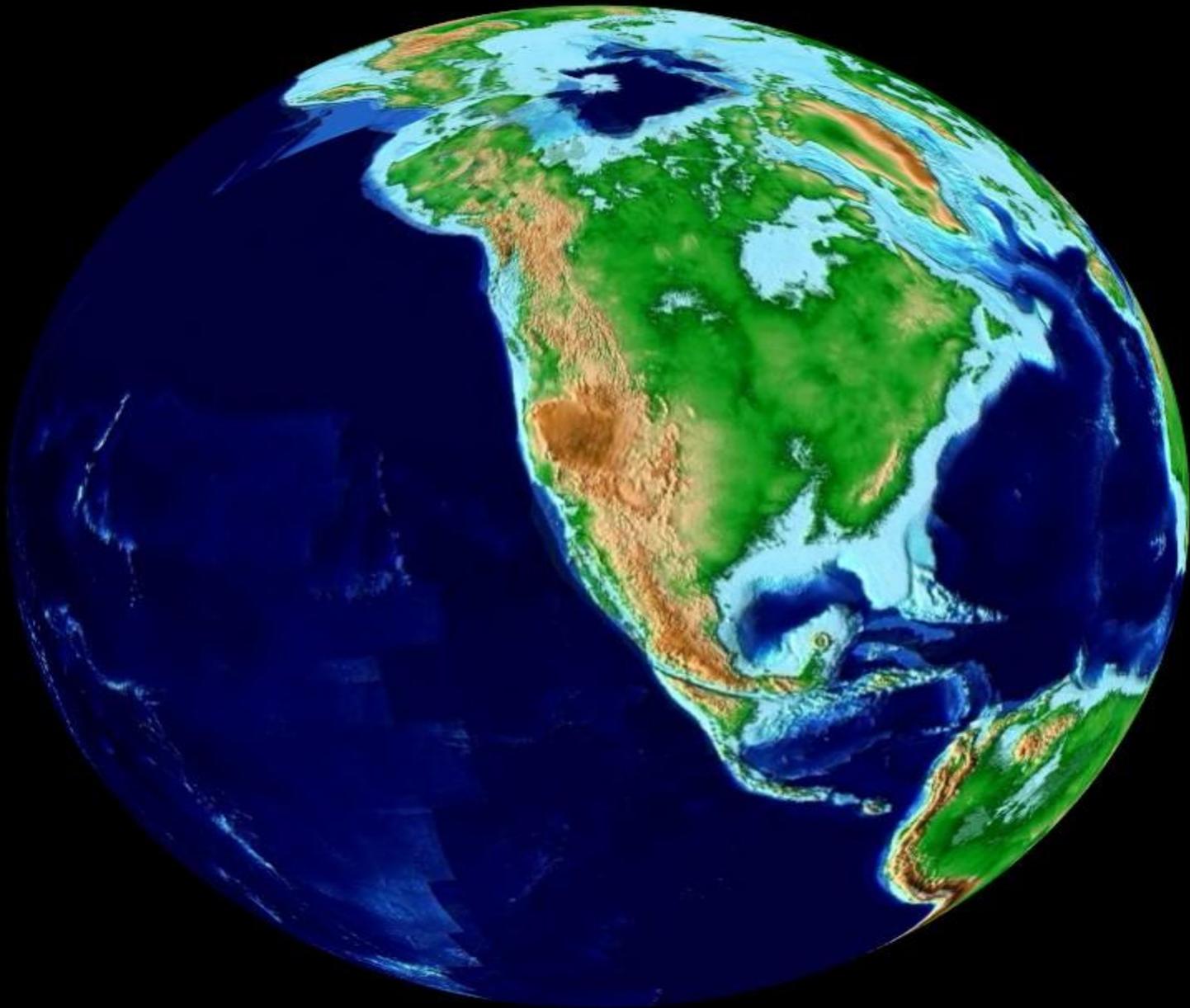
garret graves
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225.342.7669



Today

Source: Earth Systems Research Laboratory





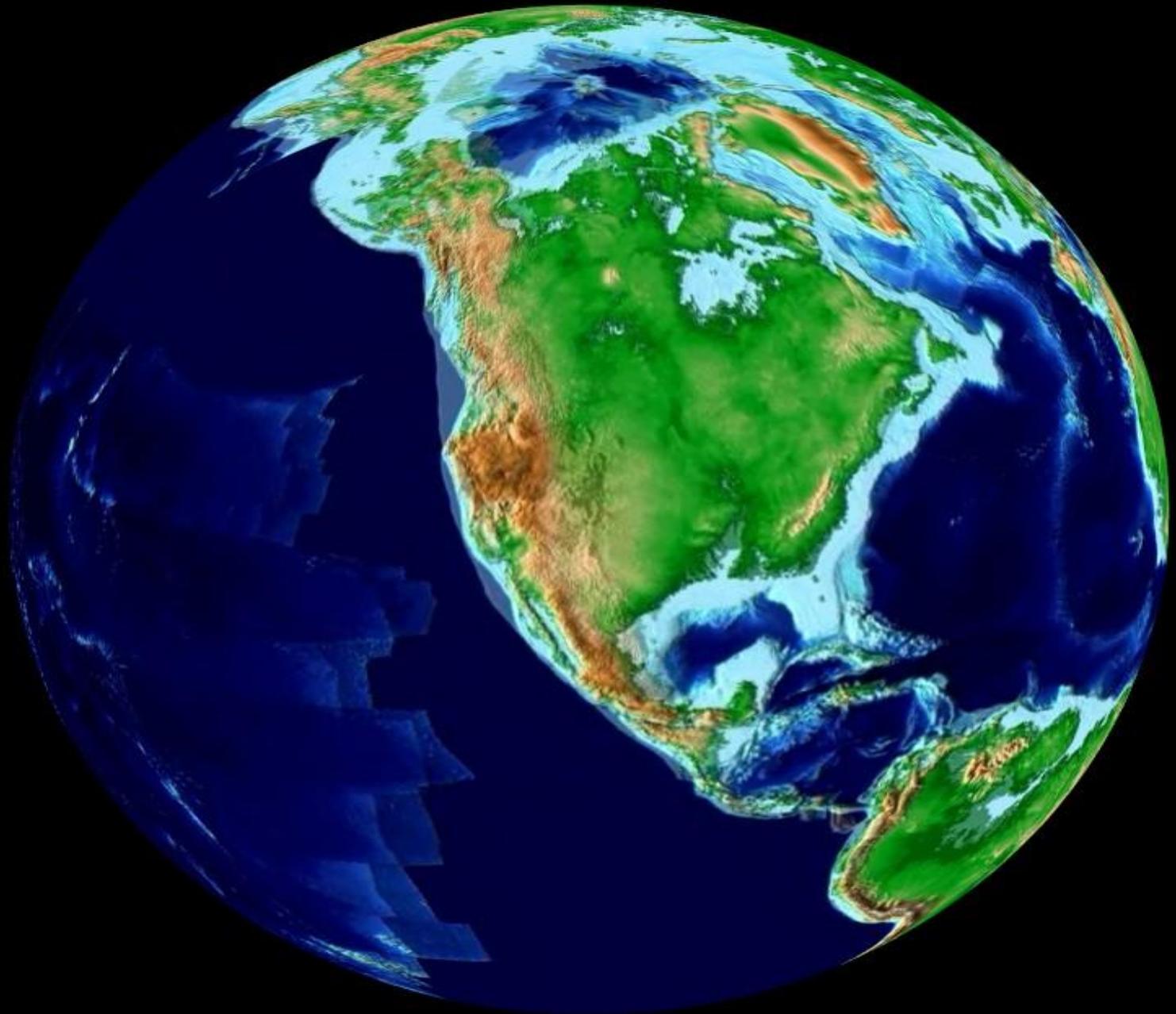
Coastal Protection and
Restoration Authority of Louisiana

60 Million Years Ago

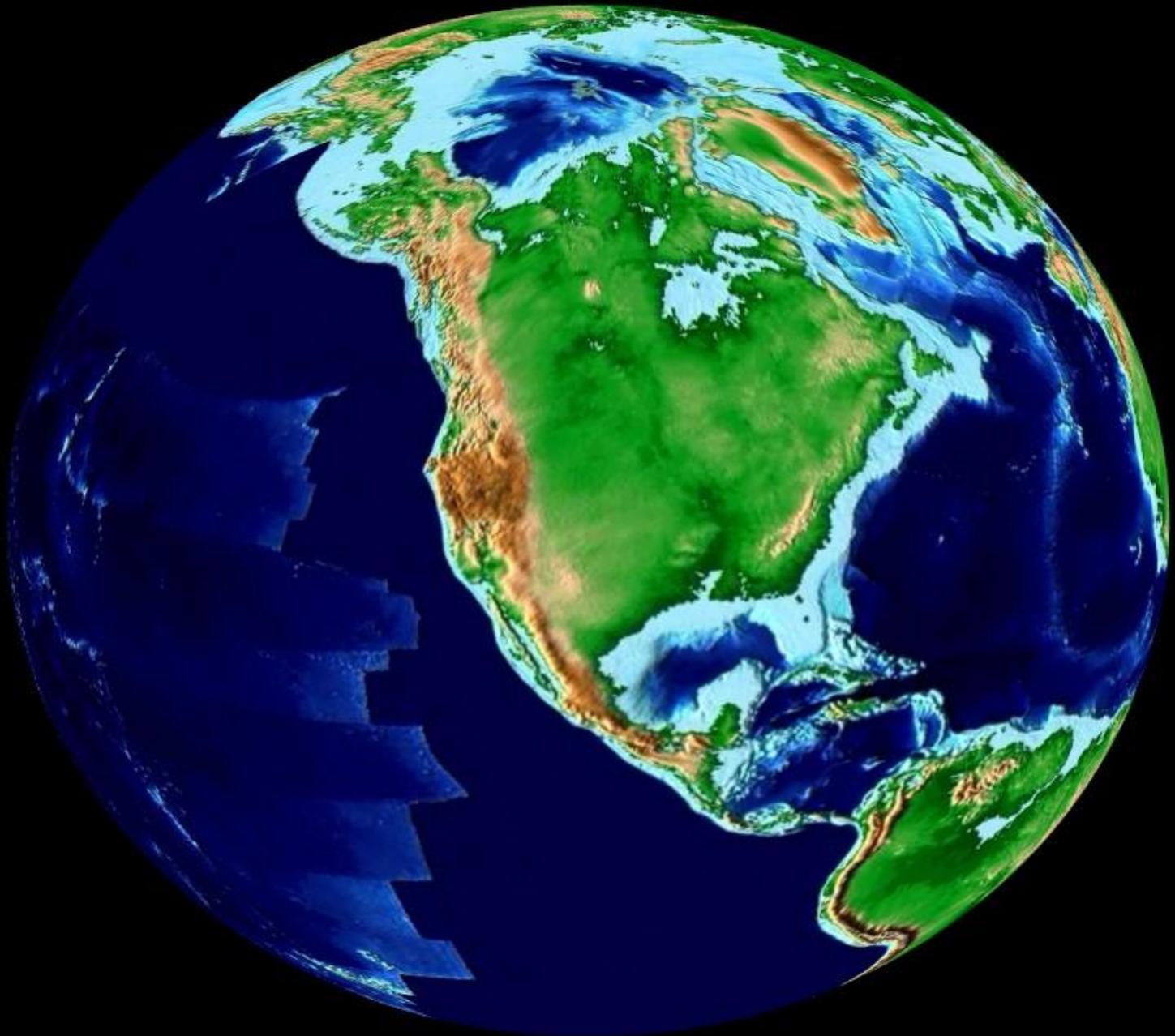


55 Million Years Ago

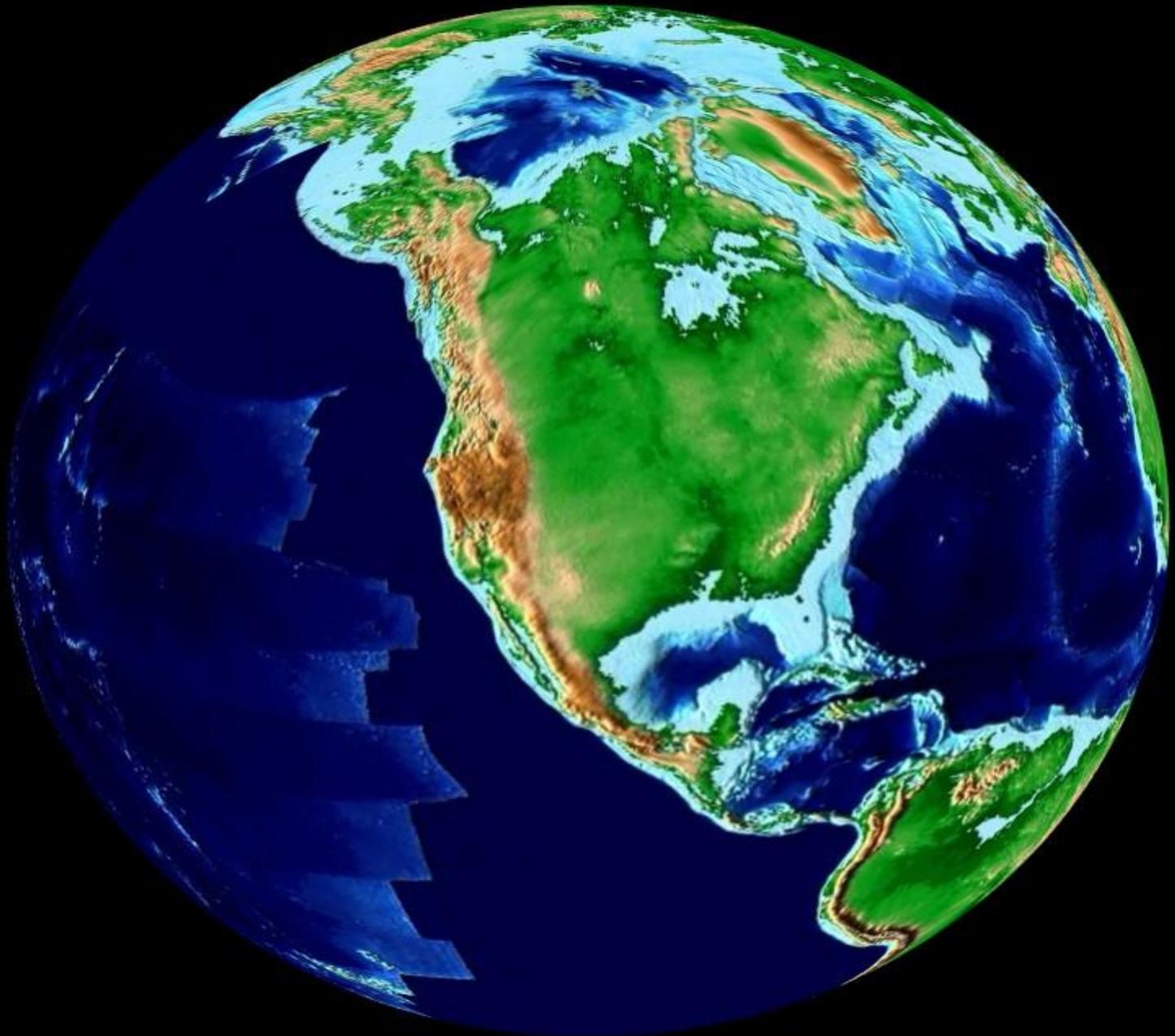




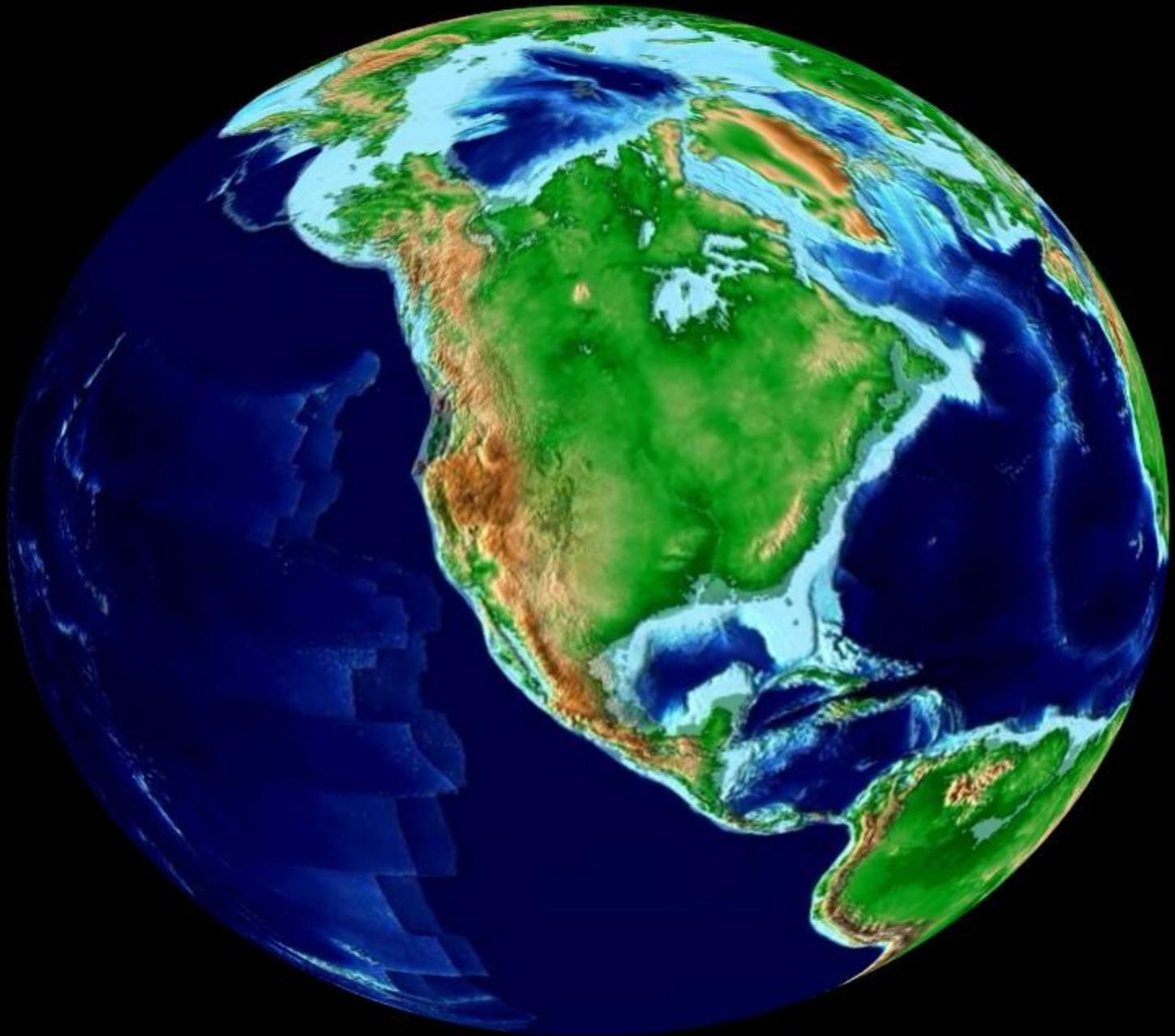
50 Million Years Ago



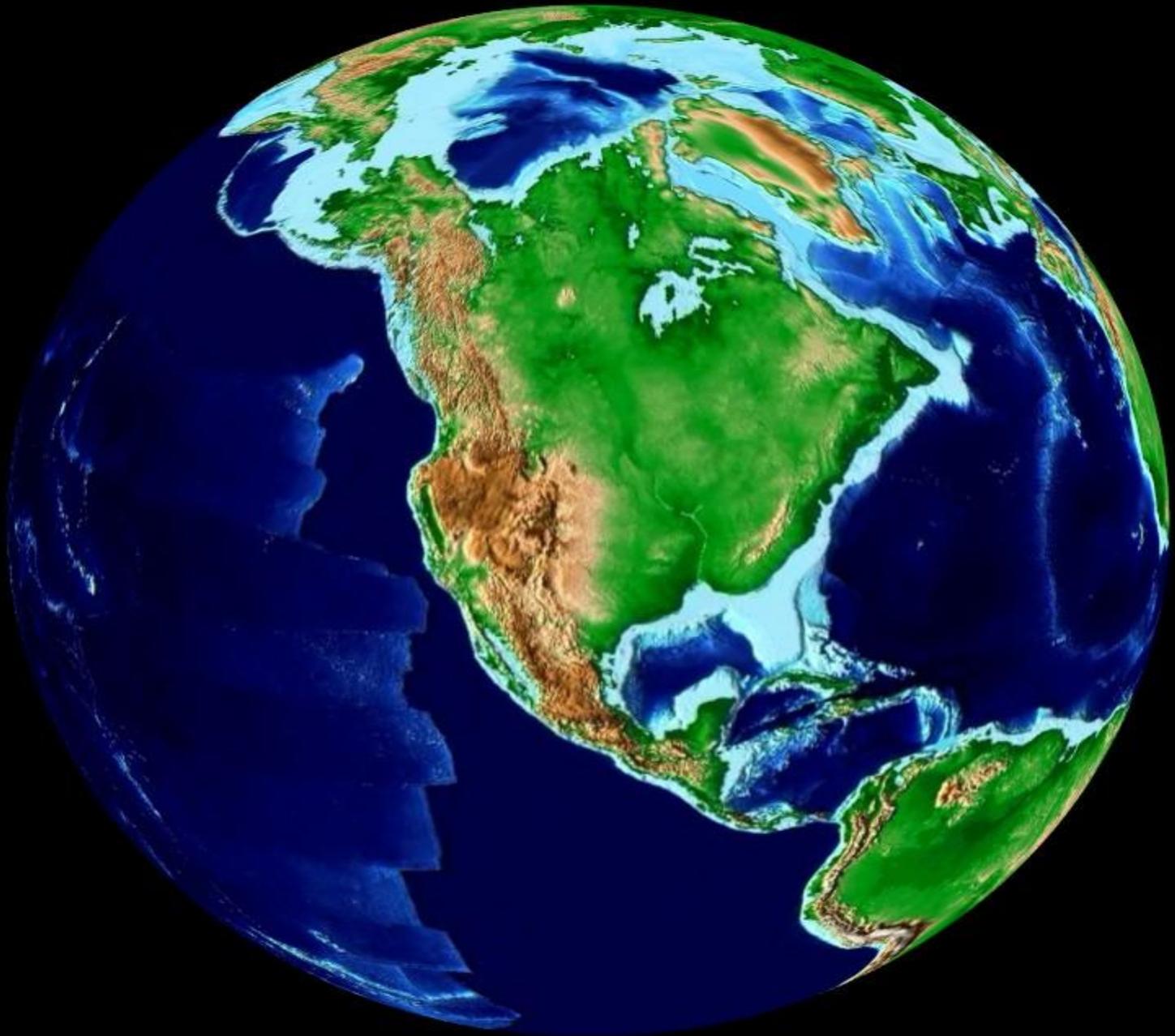
45 Million Years Ago



40 Million Years Ago



35 Million Years Ago



30 Million Years Ago



25 Million Years Ago



20 Million Years Ago



15 Million Years Ago



10 Million Years Ago



5 Million Years Ago



Today

Source: Earth Systems Research Laboratory

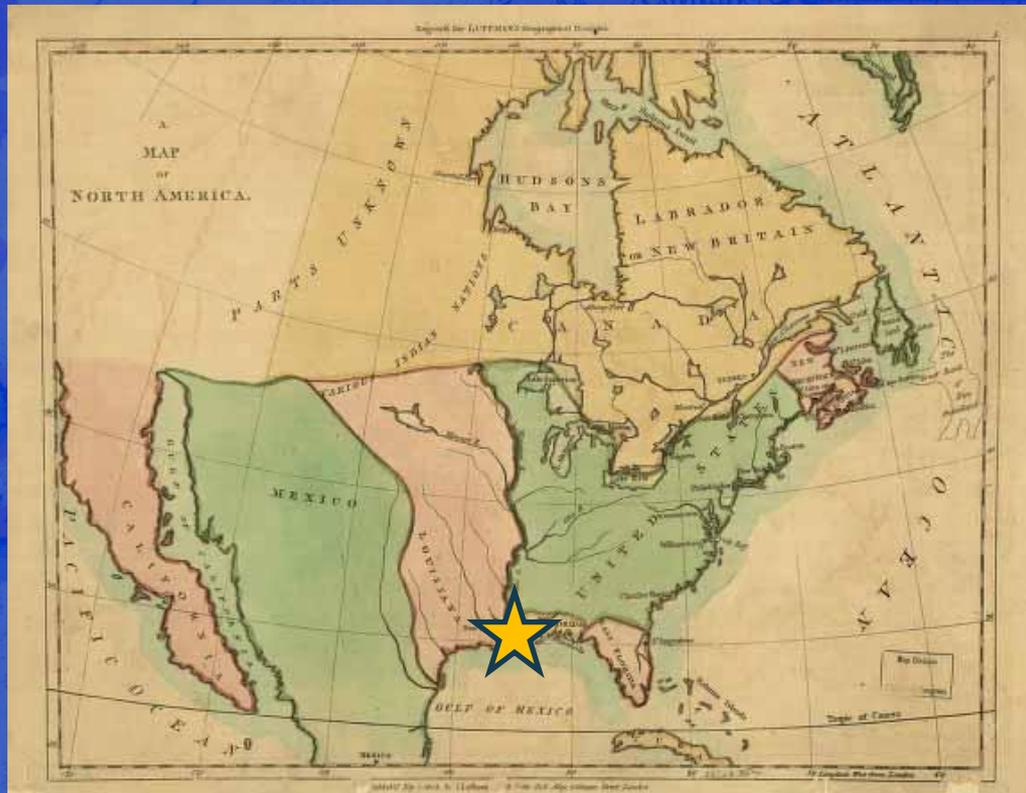


LOUISIANA'S NATIONAL ROLE



Coastal Protection and
Restoration Authority of Louisiana

The Louisiana Purchase



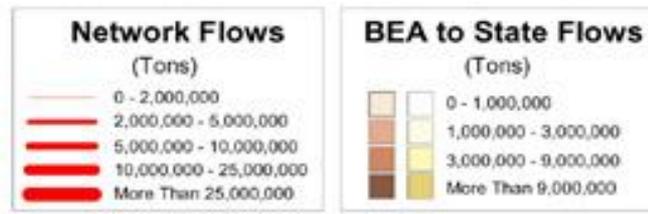
"It is New Orleans, through which the produce of three-eighths of our territory must pass to market..."

Thomas Jefferson to Robert R. Livingston,
Washington,
April 18, 1802



Total Combined Truck Flows
(1998)

NEW YORK



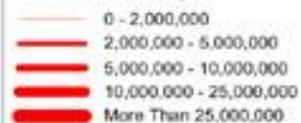
U.S. Department of Transportation
Federal Highway Administration
Office of Freight Management and Operations
Freight Analysis Framework



Total Combined Truck Flows
(1998)

LOS ANGELES

Network Flows (Tons)



BEA to State Flows (Tons)





Total Combined Truck Flows
(1998)

HOUSTON

Network Flows (Tons)



BEA to State Flows (Tons)

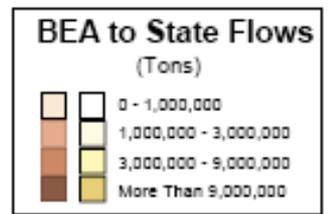
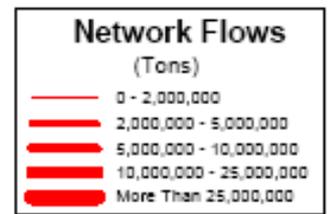




U.S. Department of Transportation
 Federal Highway Administration
 Office of Freight Management and Operations
 Freight Analysis Framework

Total Combined Truck Flows
 (1998)

NEW ORLEANS

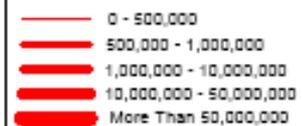




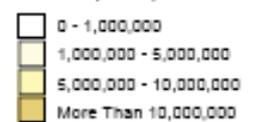
Total Combined Truck Flows
(1998)

LOUISIANA

Network Flows (Tons)

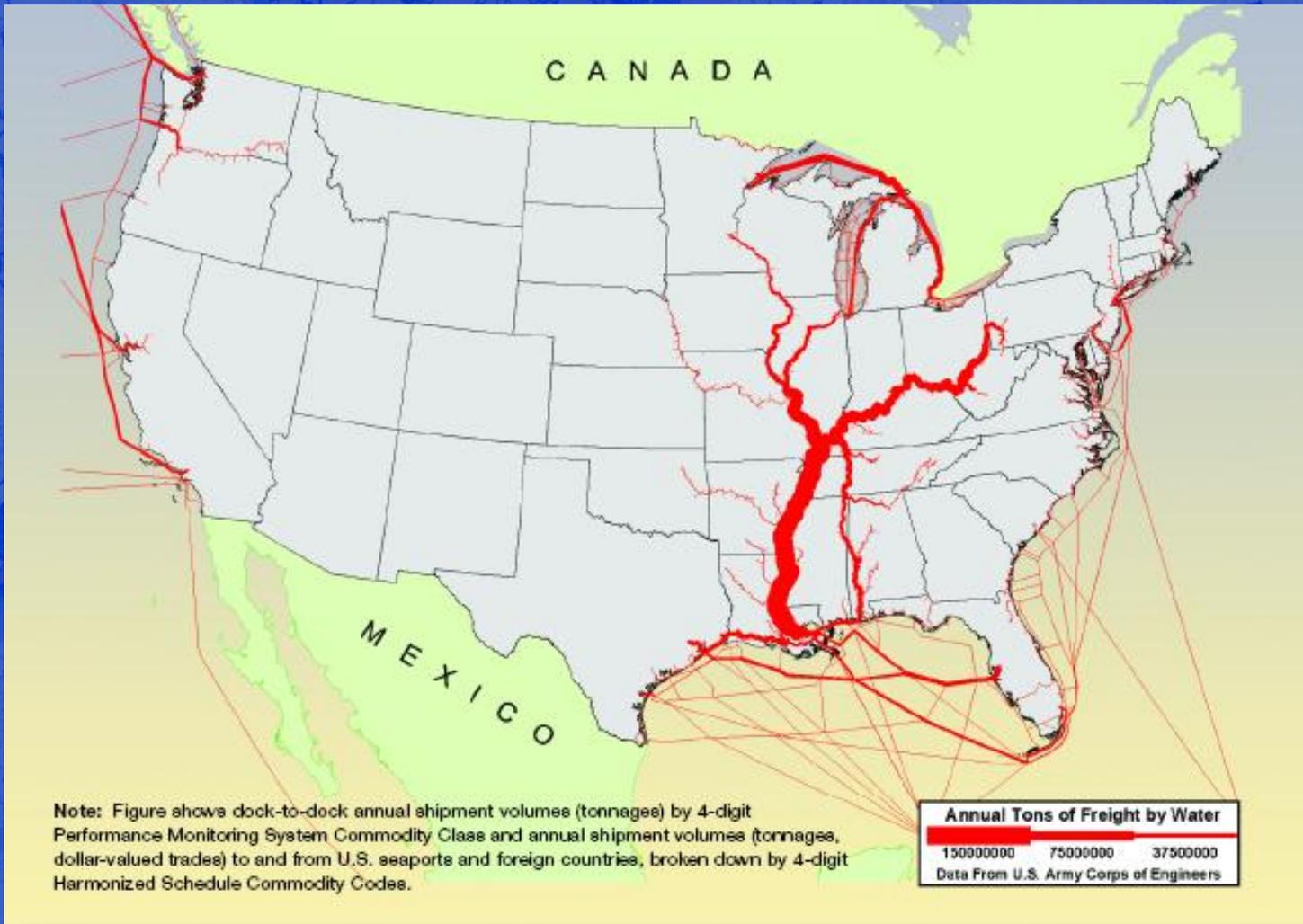


State to State Flows (Tons)





Tonnage on Domestic Waterway Network





Global Perspective: Cargo



- Top tonnage port in the nation
- Five of the top 15 tonnage ports in the US
- Largest cargo port complex in the world
- 19 percent of all waterborne commerce
- Over 30 states depend upon Louisiana's ports for imports and exports.....





Global Perspective: Energy

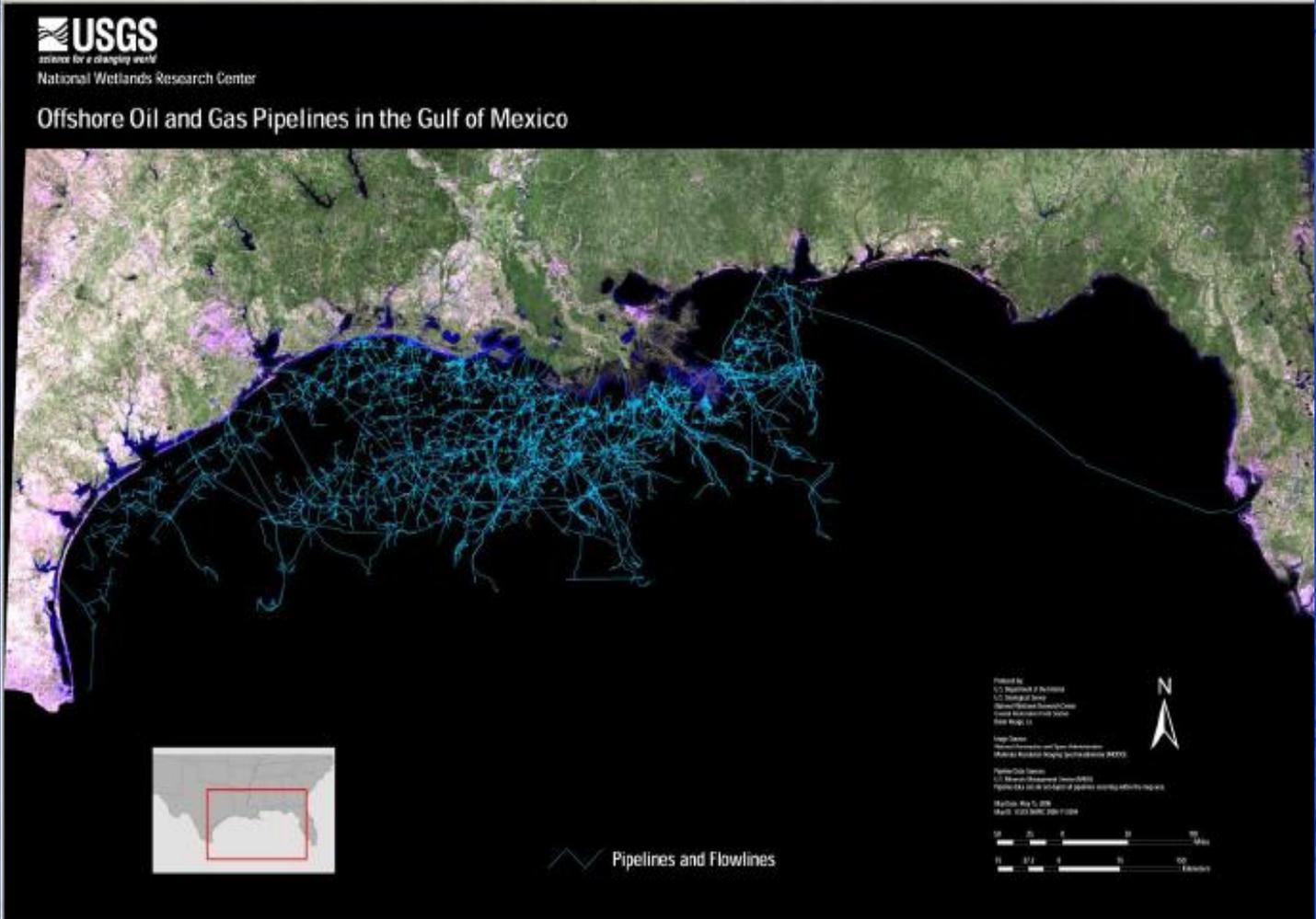


- Top producer of domestic oil
- Top domestic reserves of oil and gas
- Top producer of offshore oil
- #2 producer of offshore gas
- Significant offshore alternative energy potential
- Top producer of offshore revenues for US Treasury





Offshore oil and gas pipelines in Gulf of Mexico





Global Perspective: Seafood



- Top producer in fisheries in the Lower 48 States
- Top producer of oysters
- Top producer of blue crabs
- Top producer of crawfish
- Top producer of shrimp

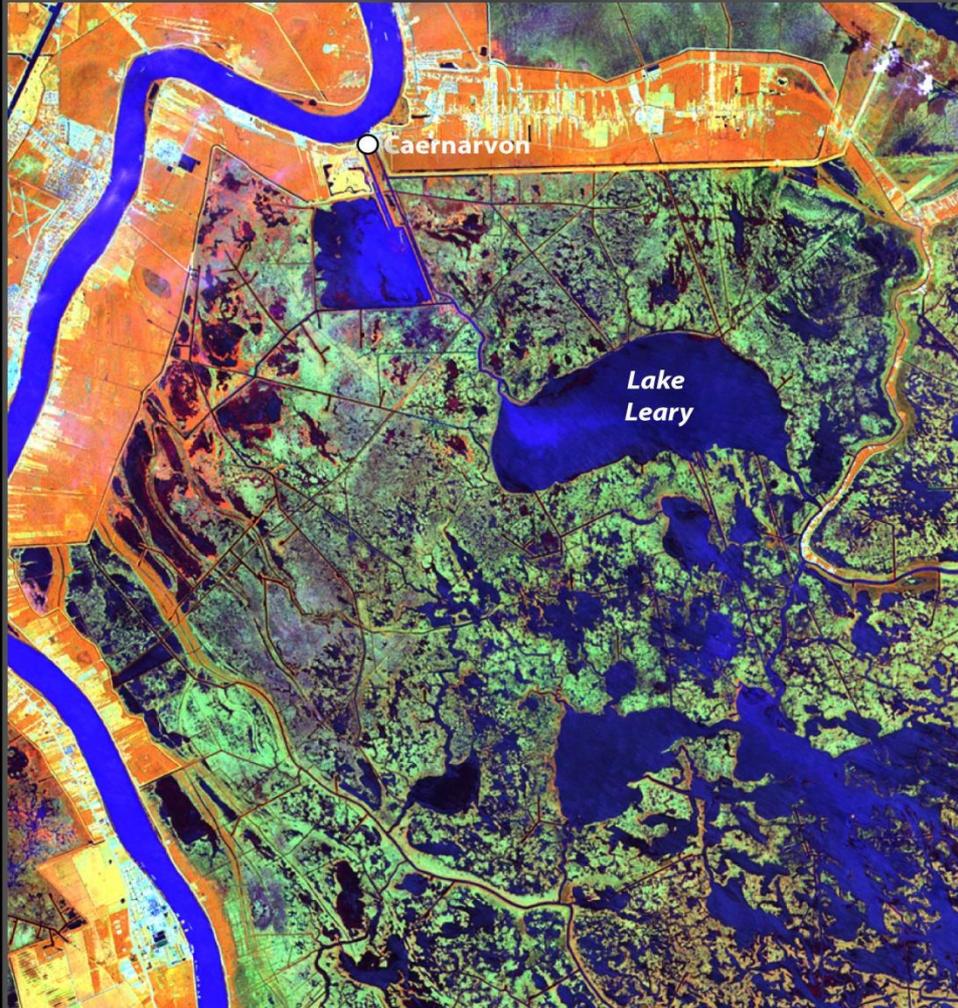


Without Aggressive Efforts, the Gulf Will Continue to Encroach Upon Our Communities

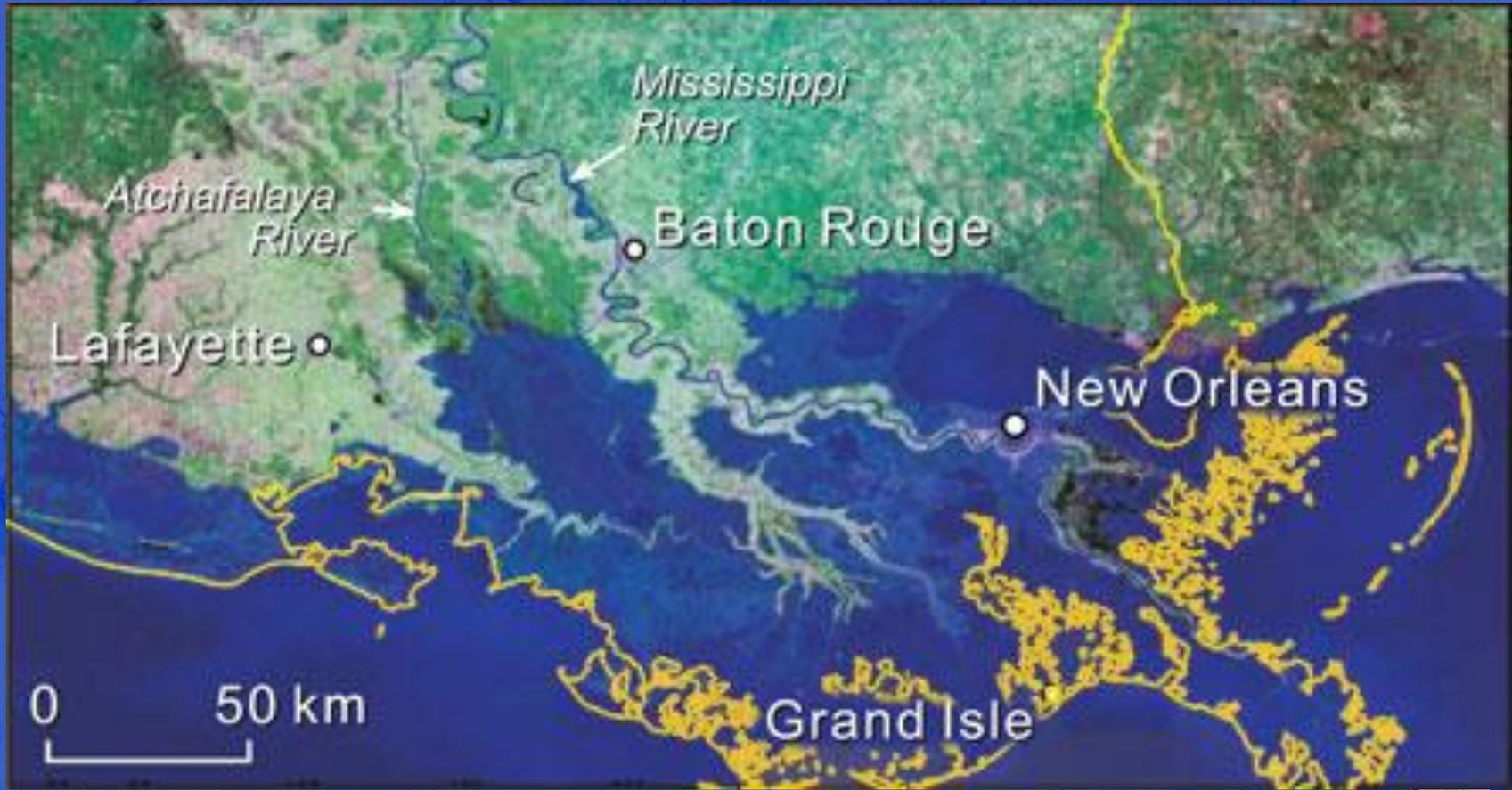
*Landsat Thematic Mapper 5 Hurricane Katrina Comparison Images
Upper Breton Sound Area*

April 16, 2004

September 7, 2005



What Could Happen by 2100 Without Action



Blum and Roberts

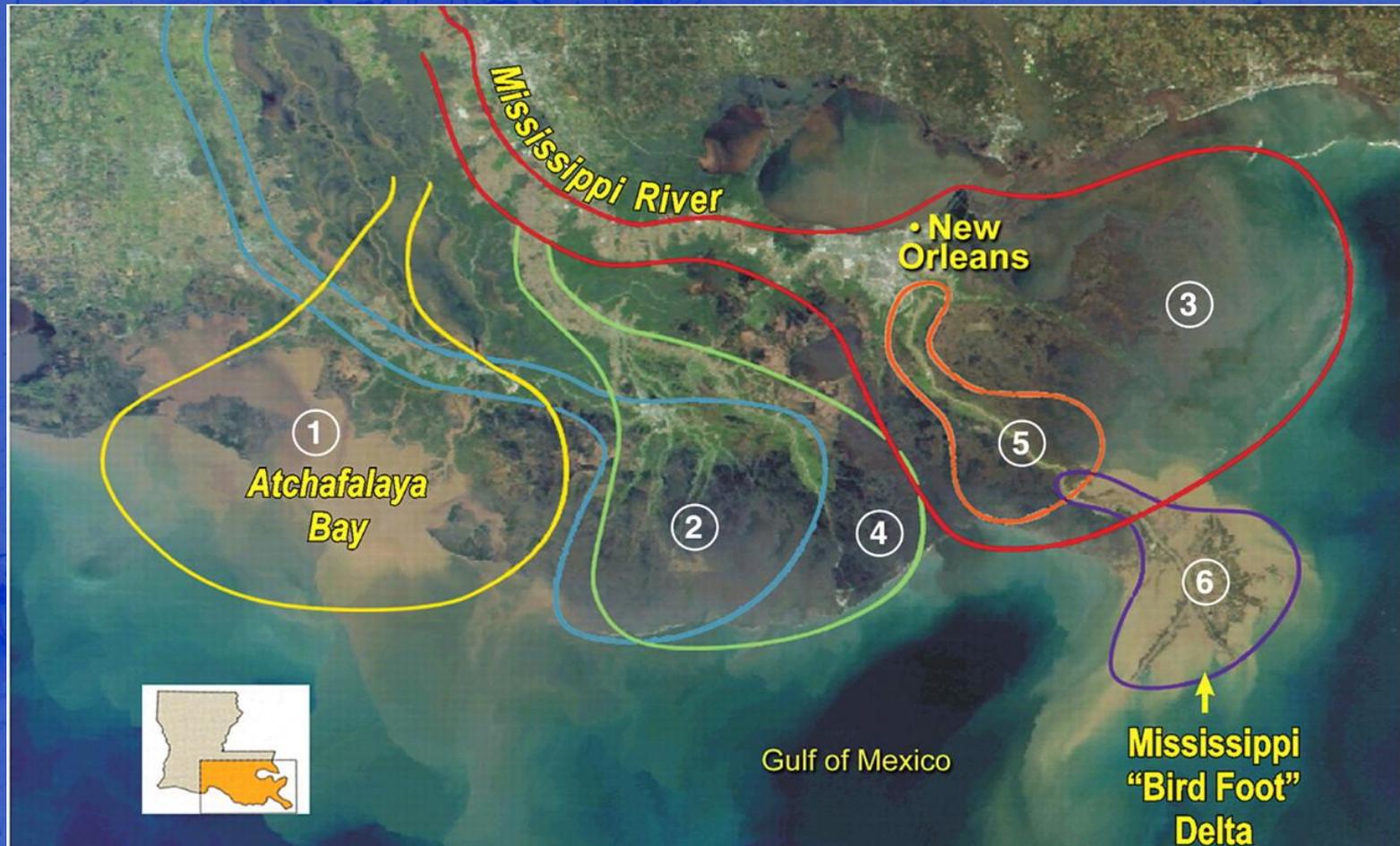


WHY???



Coastal Protection and
Restoration Authority of Louisiana

Mississippi River & Tributaries (MRT)



1 Sale - Cypremont
4600 years BP

2 Teche
3500 - 2800 years BP

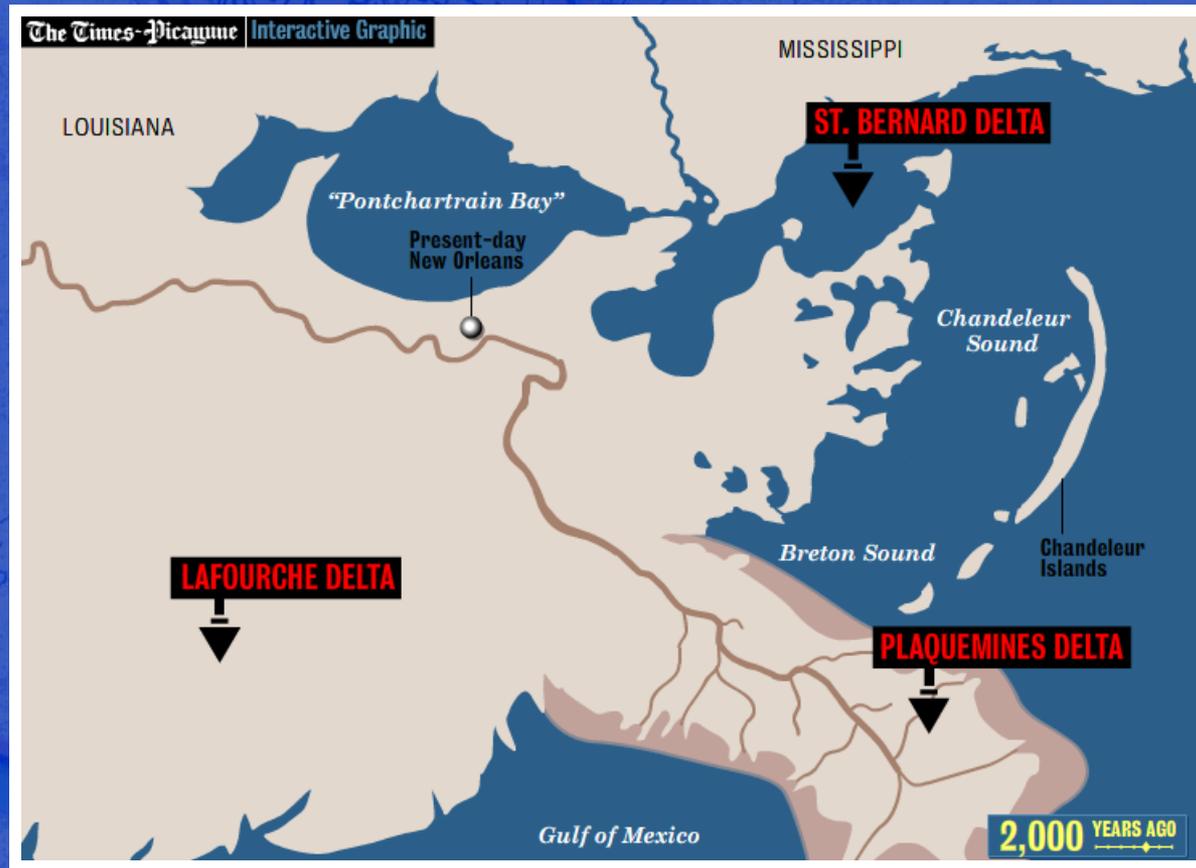
3 St. Bernard
2800 - 1000 years BP

4 Lafourche
1000 - 300 years BP

5 Plaquemine
750 - 500 years BP

6 Balize
550 years BP

A healthy, accreting coastal system – Before river levees



A system that was building ~ 1 square mile of land a year is now collapsing and unsustainable



**THEN, THE FLOODS
CAME...**



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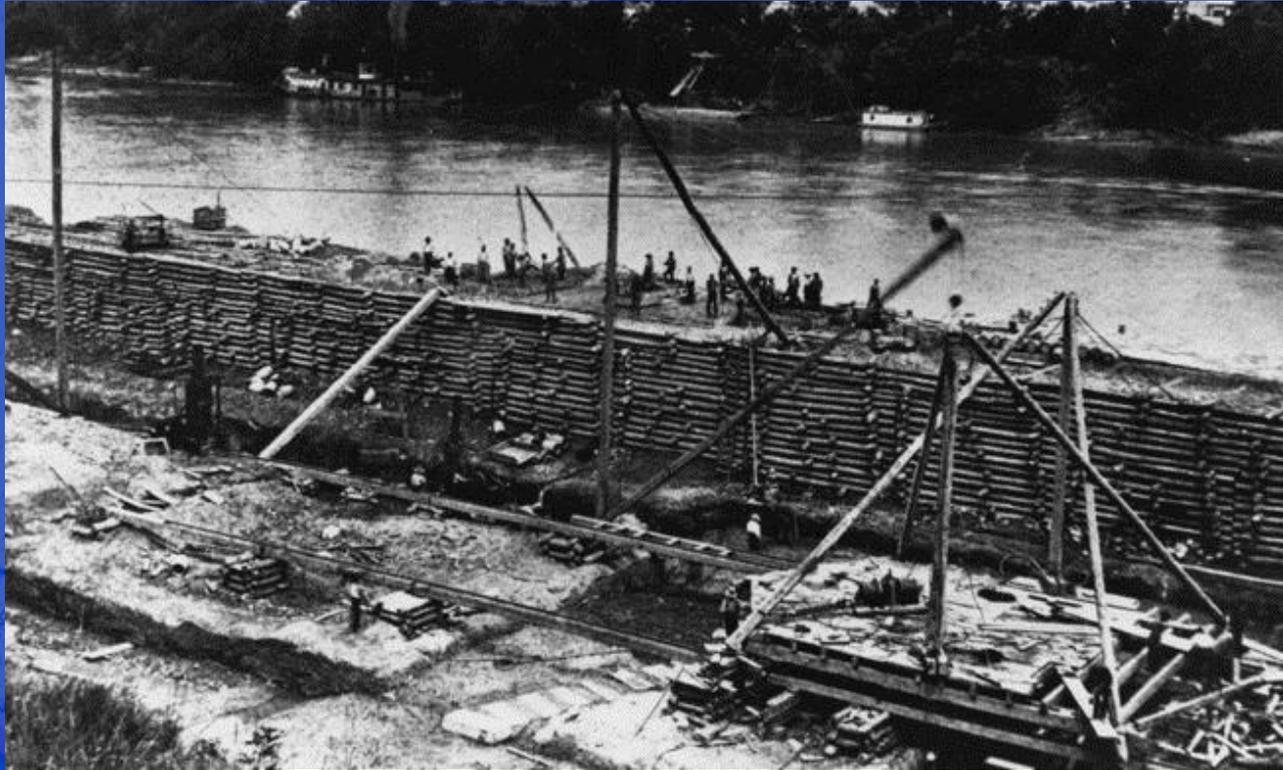
The Great Flood of 1927



- Most destructive river flood
- 145 levee breaks
- 27,000 square miles flooded
- 246 deaths



Mississippi River & Tributaries (MRT)

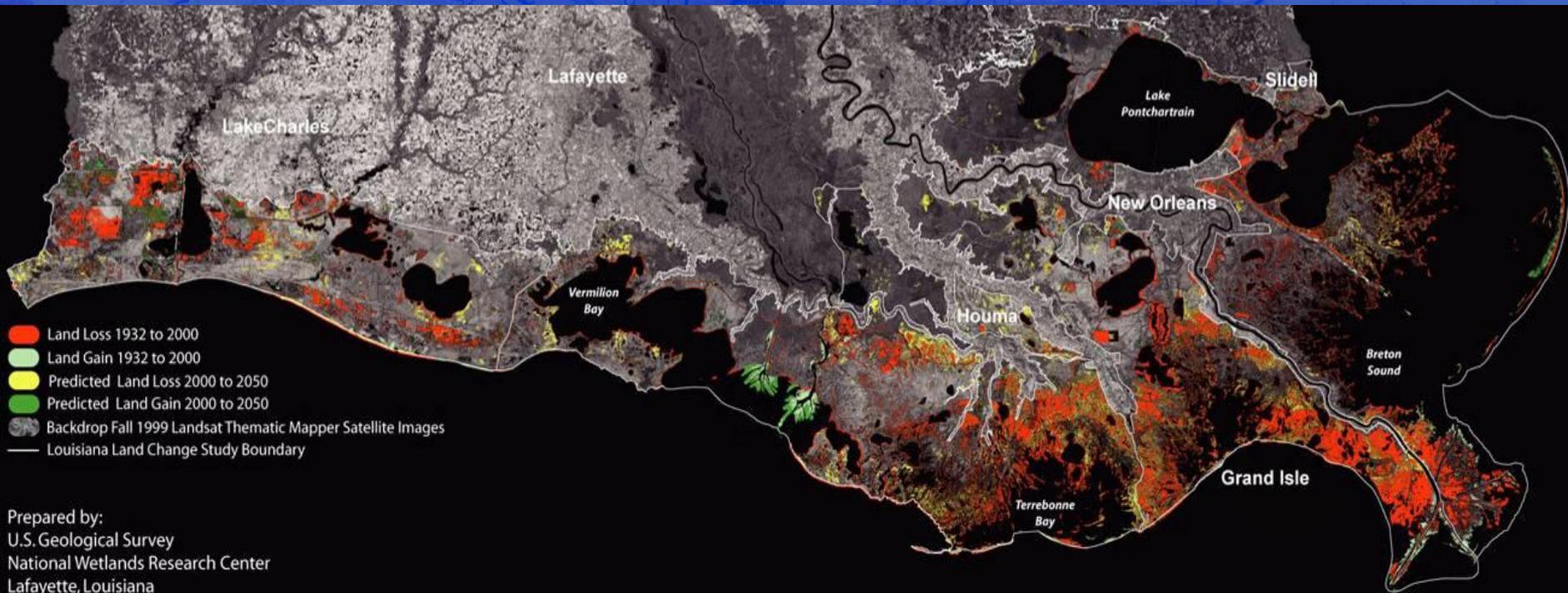


The Flood Control Act of 1928 put flood control on par with other major projects of its time with the largest public works appropriation ever.



Coastal Protection and
Restoration Authority of Louisiana

Coastal Land Loss

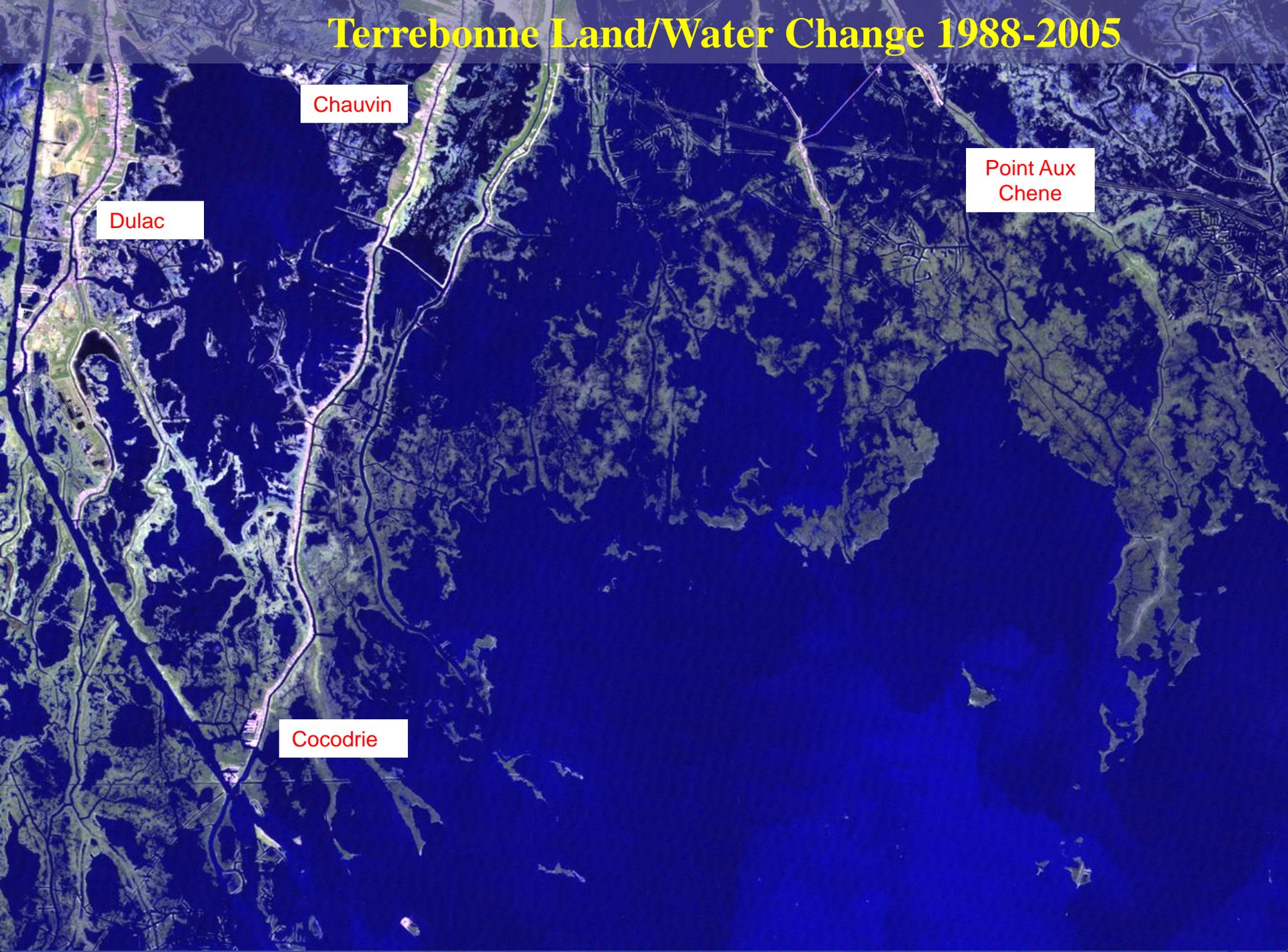


Over 2300 square miles lost since 1930



Coastal Protection and
Restoration Authority of Louisiana

Terrebonne Land/Water Change 1988-2005



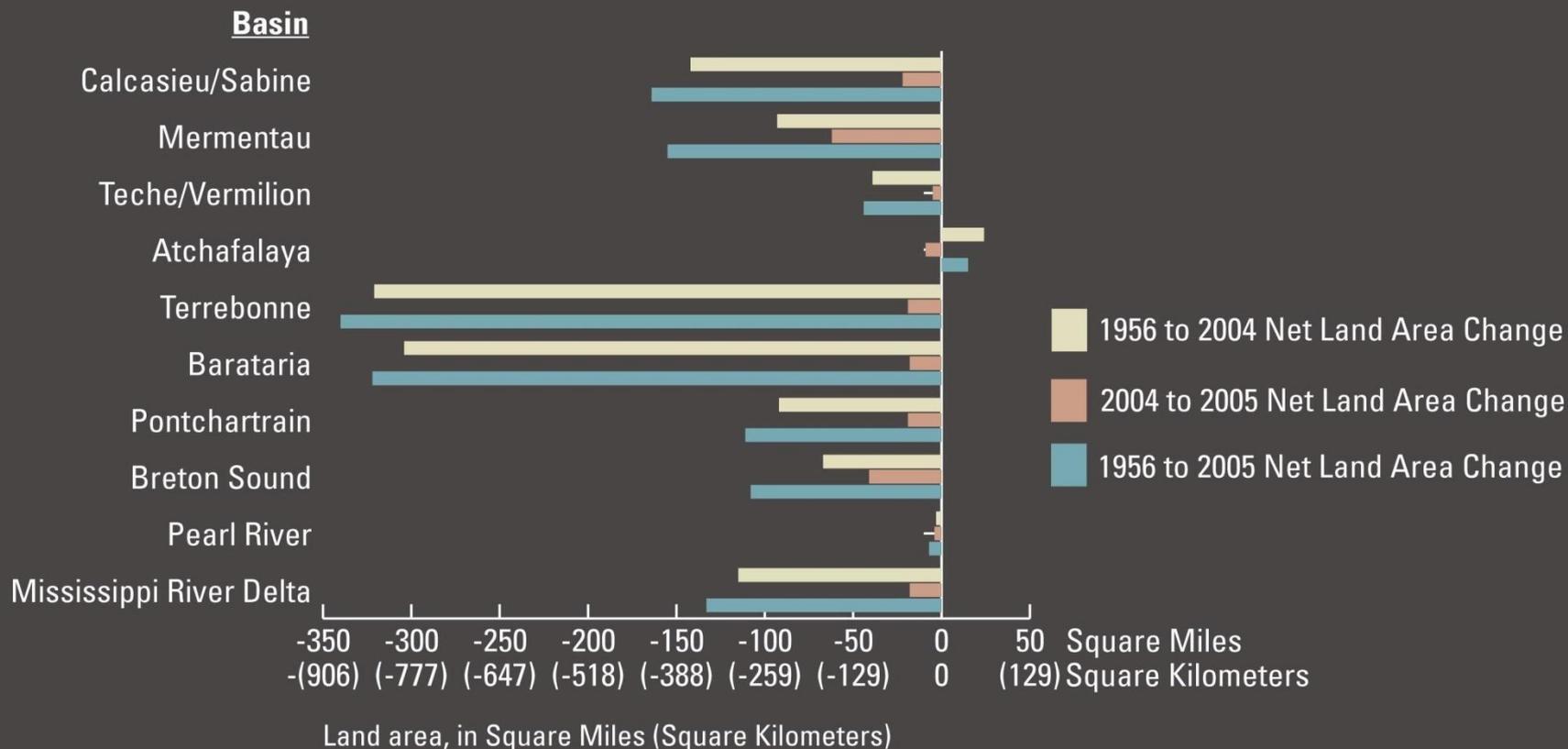
Chauvin

Point Aux
Chene

Dulac

Cocodrie

1956 to 2004 and 2004 to 2005 Net Land Area Changes Graph*



*The 1956 to 2004 net land decrease is 1,149 mi² (2,975.91 km²). The 2004 to 2005 net land decrease is 218 mi² (564.62 km²), which slightly varies from the 217 mi² given elsewhere in this report. The variation results from matching the CZB (1956) and LCA (2004 to 2005) data sets, as discussed in this methodology.

Source: Open-File Report 2006-1274, Land Area Change in Coastal Louisiana After the 2005 Hurricanes: A Series of Three Maps

Land Area Change in Coastal Louisiana After the 2005 Hurricanes: A Historical Perspective (from 1956)

Greatest Ecosystem Loss

GAO

United States Government Accountability Office
Report to Congressional Addressees

December 2007

COASTAL WETLANDS

Lessons Learned from
Past Efforts in
Louisiana Could Help
Guide Future
Restoration and
Protection



GAO-08-130

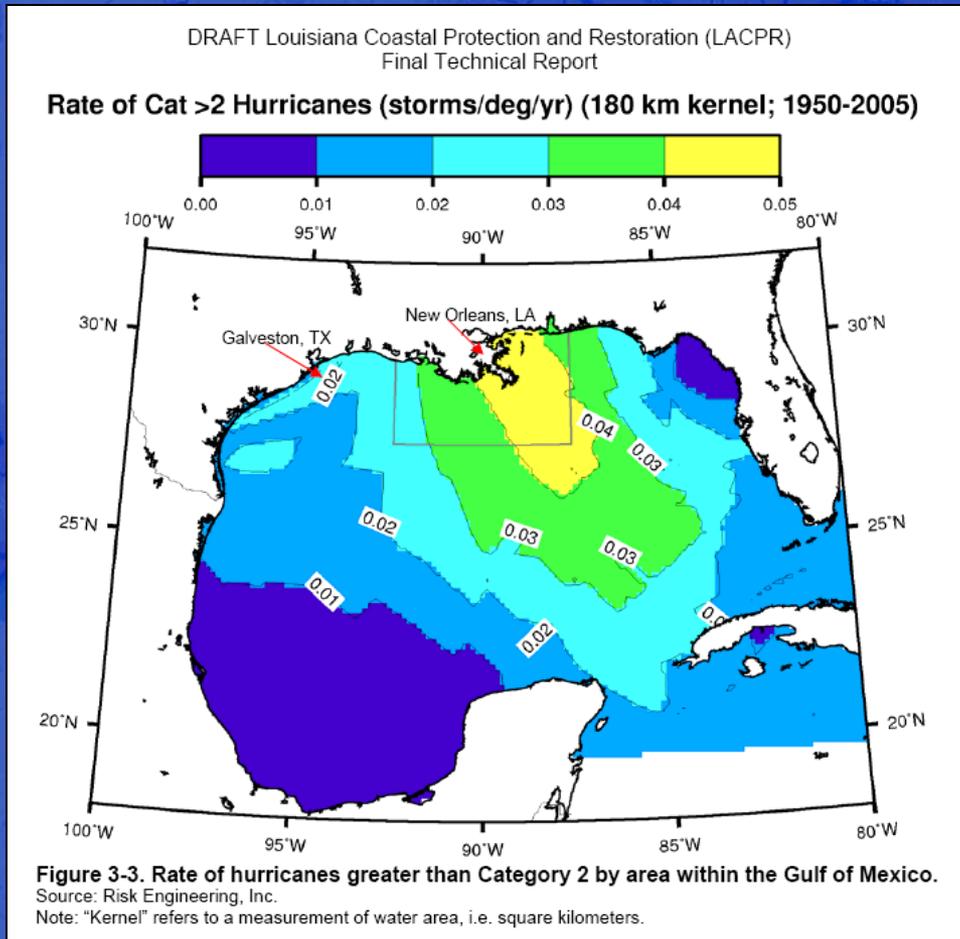
“Coastal wetland losses in Louisiana account for up to 90 percent of the total coastal wetlands loss occurring in the lower 48 states today and expose the state’s coastal areas to the devastating effects of hurricane storm surges.”

Coastal Wetlands: Lessons Learned From Past Efforts in Louisiana Could Help Guide Future Restoration and Protection
GAO, December 2007



Coastal Protection and
Restoration Authority of Louisiana

Hurricanes Approaching Louisiana's Coast Are More Likely to Be Intense



- Based on probabilities calculated from the historical record from 1950 to 2005, storms striking New Orleans, LA are twice as likely to be a Cat 2 or higher storm than storms striking the Galveston, TX area.

DRAFT LACPR
Final Technical Report
USACE
March 2009

Effects of Hurricane Katrina

Four major hurricanes in last four years:

- Katrina (2005)
- Rita (2005)
- Gustav (2008)
- Ike (2008)



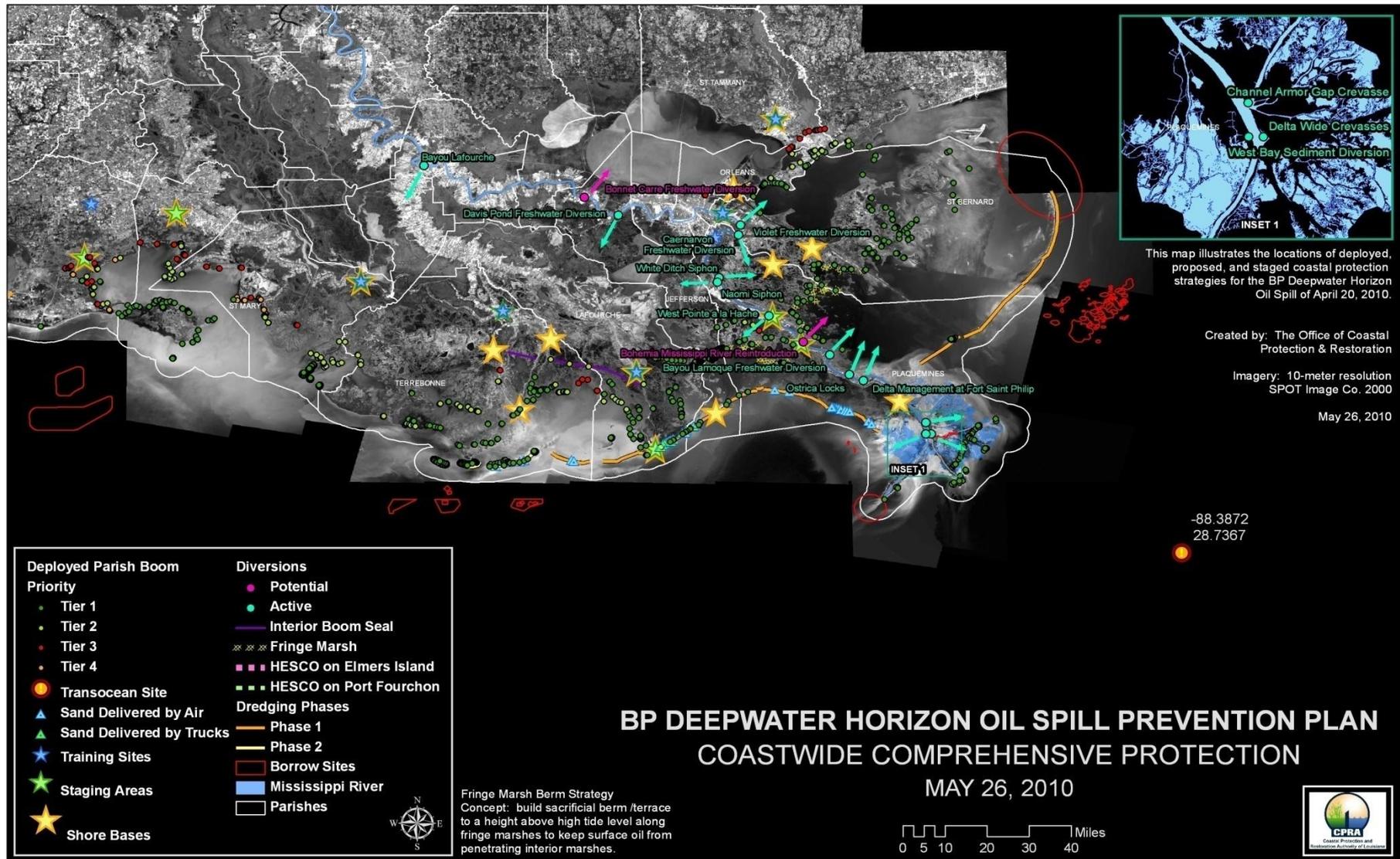
2005 Hurricane Impacts

- 
- Over 1400 Louisianans died
 - Over 200,000 homes and businesses destroyed, damaged or flooded
 - 1,000,000 displaced citizens
 - Economic Impact Exceeded \$100 billion
 - State/parish budget/economy devastated

Multiple Lines of Defense

1. Well capping
2. Dispersant
3. Skimming
4. Burning
5. Freshwater Diversions
6. Shoreline Terracing/Fringe Marsh
7. Boom plans
8. Gap-filling/Air-drops
9. Tiger Dams/gabion baskets
10. Barrier Island Sand booms
11. Active skimming/sorbent operations

Comprehensive Plan



This map illustrates the locations of deployed, proposed, and staged coastal protection strategies for the BP Deepwater Horizon Oil Spill of April 20, 2010.

Created by: The Office of Coastal Protection & Restoration

Imagery: 10-meter resolution SPOT Image Co. 2000

May 26, 2010

-88.3872
28.7367

- | | |
|--------------------------------------|------------------------------|
| Deployed Parish Boom Priority | Diversions |
| ● Tier 1 | ● Potential |
| ● Tier 2 | ● Active |
| ● Tier 3 | — Interior Boom Seal |
| ● Tier 4 | ⊗ ⊗ ⊗ Fringe Marsh |
| ● Transocean Site | ■ ■ ■ HESCO on Elmers Island |
| ▲ Sand Delivered by Air | ■ ■ ■ HESCO on Port Fourchon |
| ▲ Sand Delivered by Trucks | Dredging Phases |
| ★ Training Sites | — Phase 1 |
| ★ Staging Areas | — Phase 2 |
| ★ Shore Bases | □ Borrow Sites |
| | □ Mississippi River |
| | □ Parishes |

Fringe Marsh Berm Strategy
Concept: build sacrificial berm /terrace to a height above high tide level along fringe marshes to keep surface oil from penetrating interior marshes.

BP DEEPWATER HORIZON OIL SPILL PREVENTION PLAN COASTWIDE COMPREHENSIVE PROTECTION MAY 26, 2010

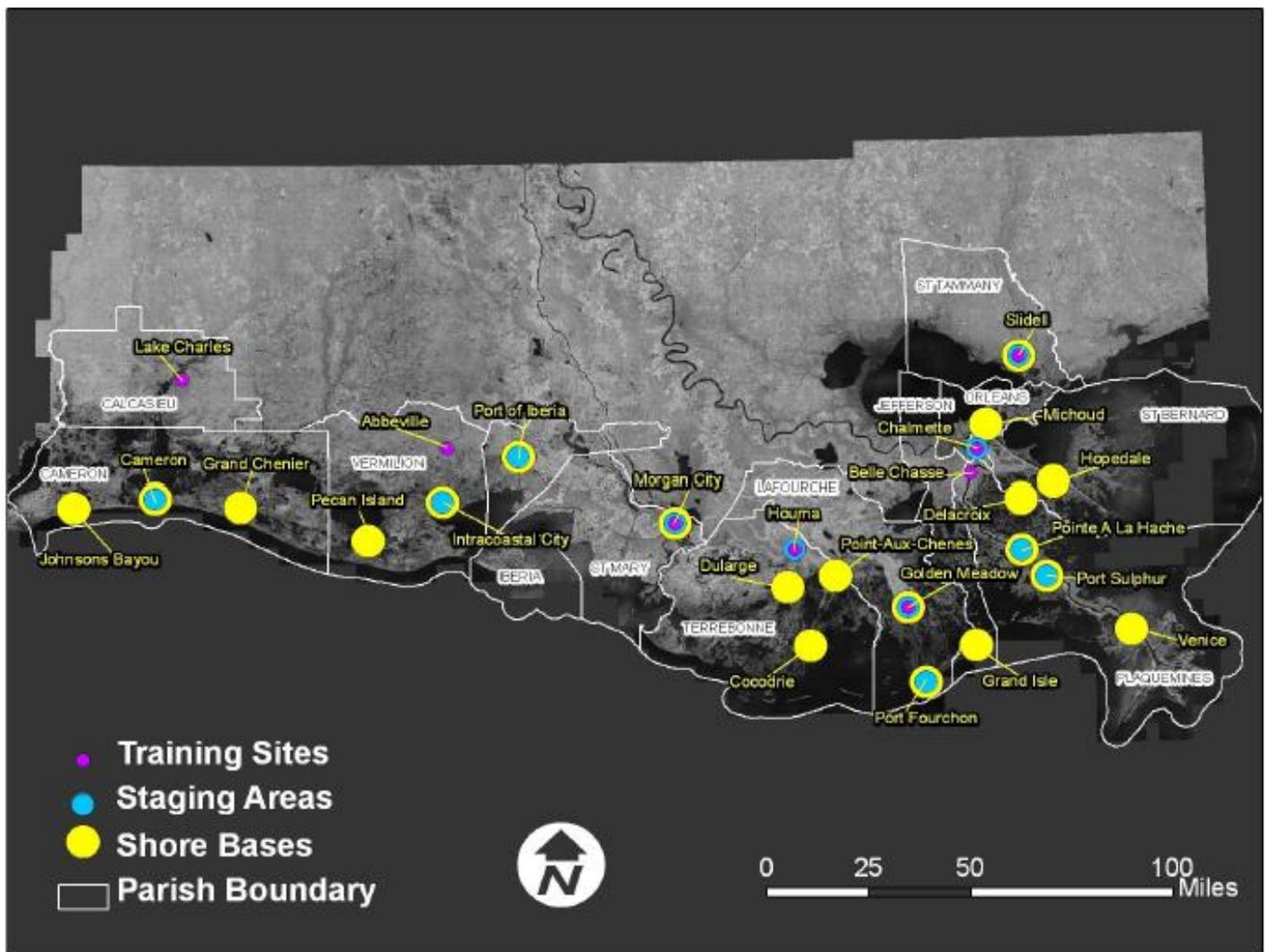


Diversions

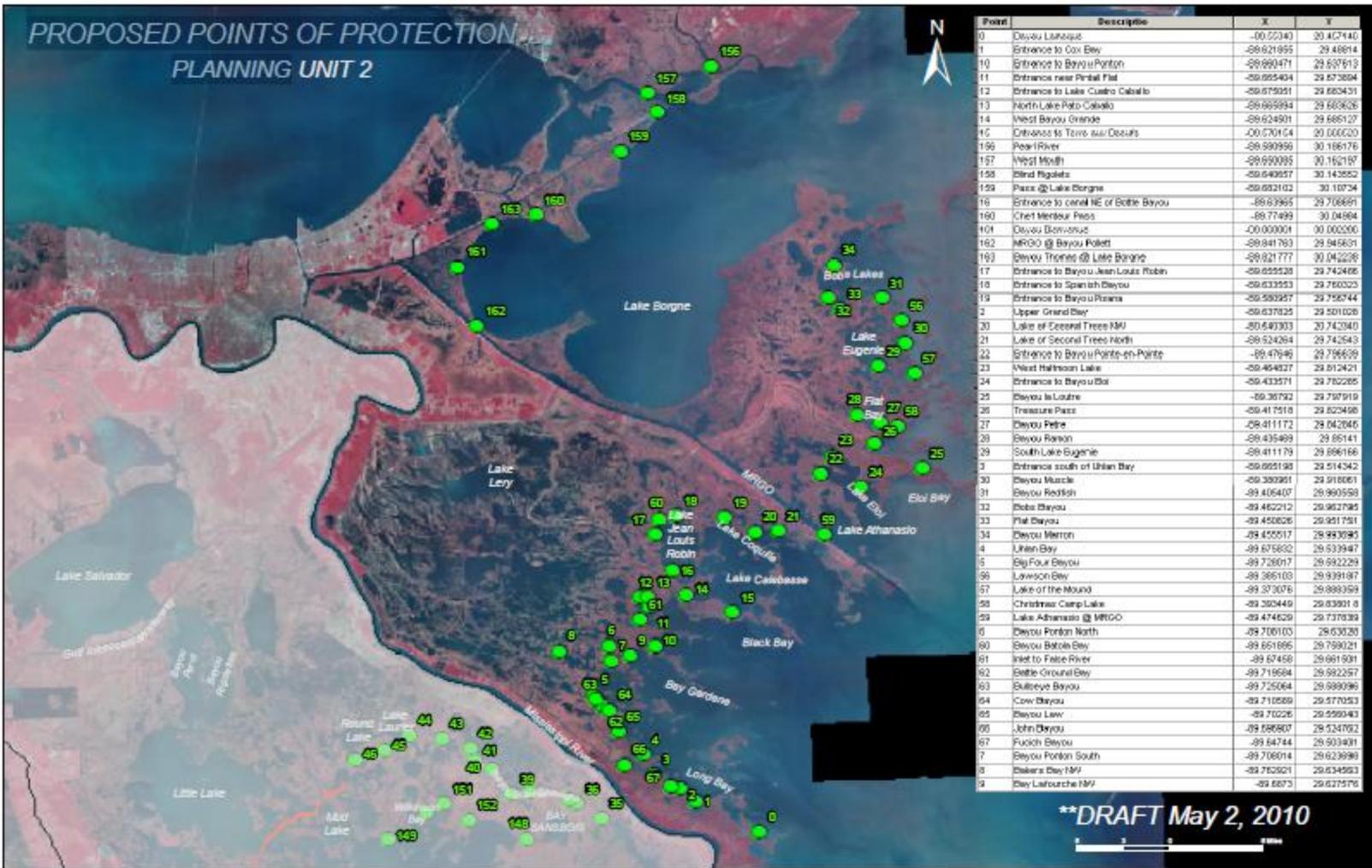
- Caernarvon Diversion
- Davis Pond Diversion
- Ostrica Locks
- Bayou Lamoque
- Bohemia Spillway
- Violet Siphon
- White's Ditch Siphon
- Naomi Siphon
- West Pointe a la Hache
- Lower Delta Management



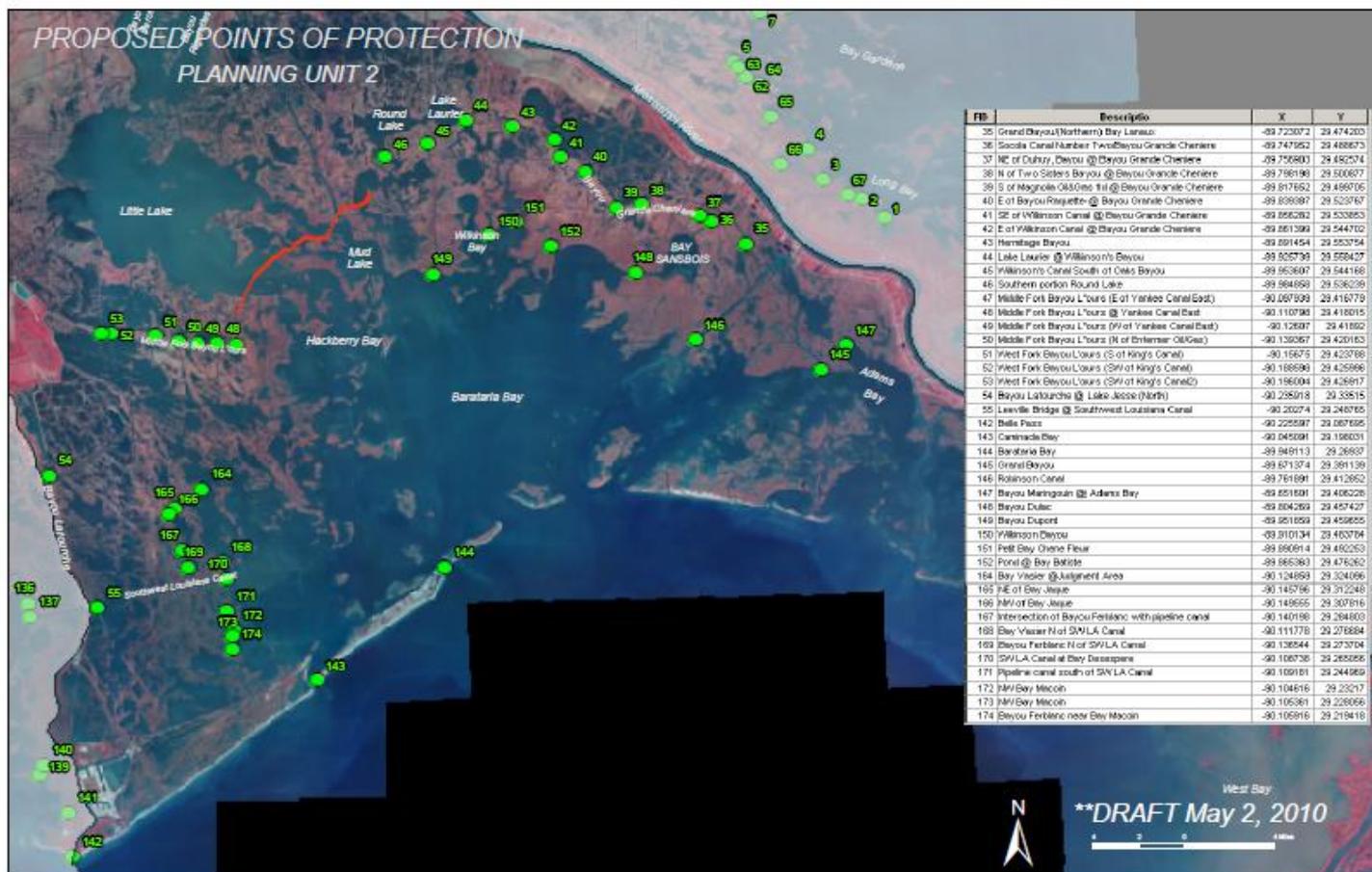
Coastal Boom Strategy



Boom Plan



Boom Plan



Air Drops



Gap Filling/Landbridge



Proven Success!

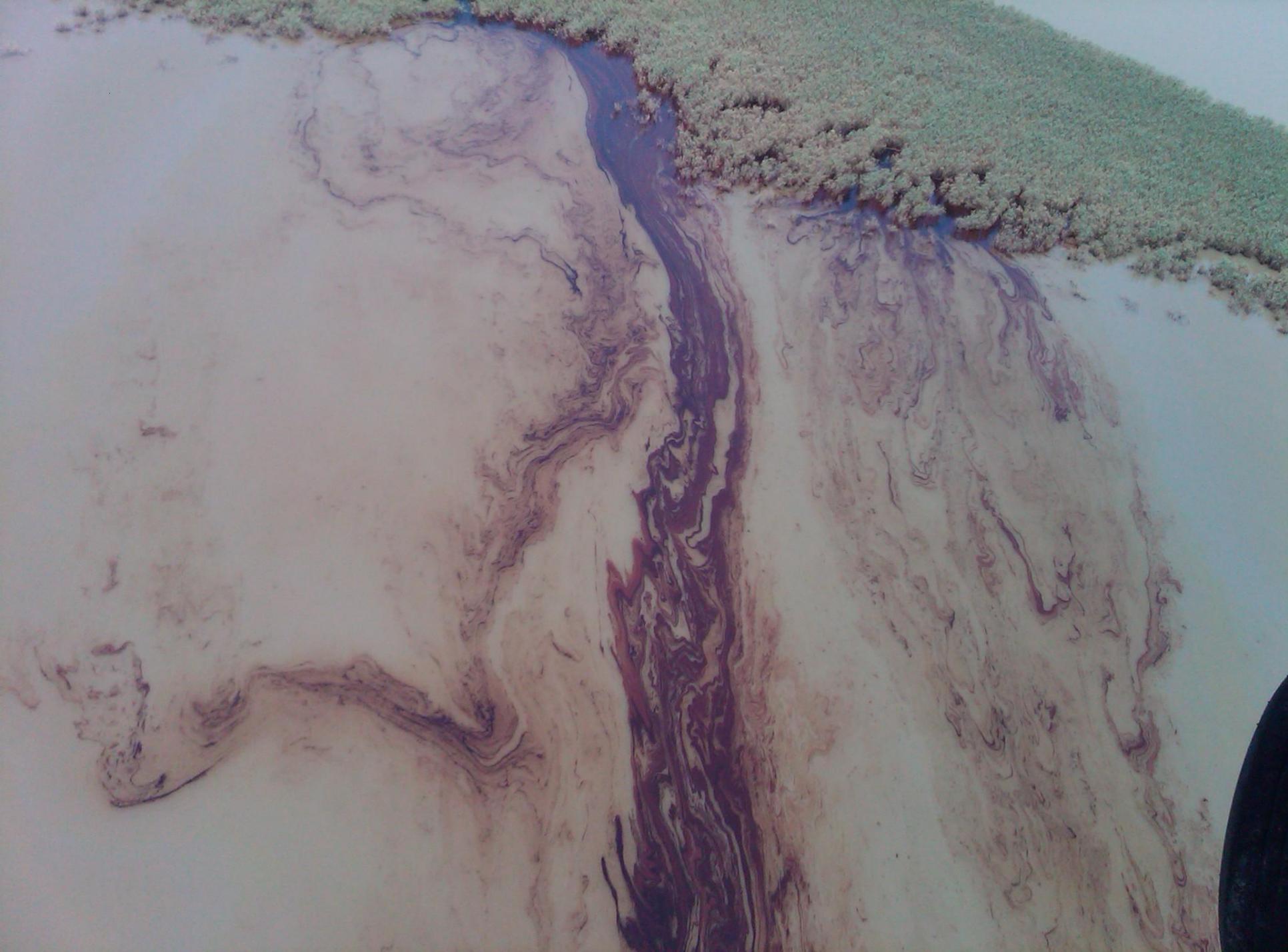


Landbridges Working



Sand Berms





























At Risk

- Commercial Fishermen
 - Hundreds of thousands of Louisianans
 - Unique culture
 - Best food in the nation/restaurants
- Most Productive Ecosystem
 - Oysters
 - Shrimp
 - Finfish
 - Crabs



At Risk

Top Recreational Fishing Destination

- Bait shops
- Marinas
- Tackle suppliers
- Restaurants
- Hotels



At Risk

- Reverses recovery from Hurricanes Katrina, Rita, Gustav and Ike
 - Communities
 - Coastal systems
 - Economies
- Threatens unique culture, heritage and way of life
- Fundamentally destroys ecosystems/coastal resources

At Risk

- 40% of the coastal marshlands in the continental United States
- 18% of all waterborne commerce in the United States
- USFWS: “fishery supported by this area remains the most productive in North America”
 - 90% of species
 - 98% of commercial fish and shellfish

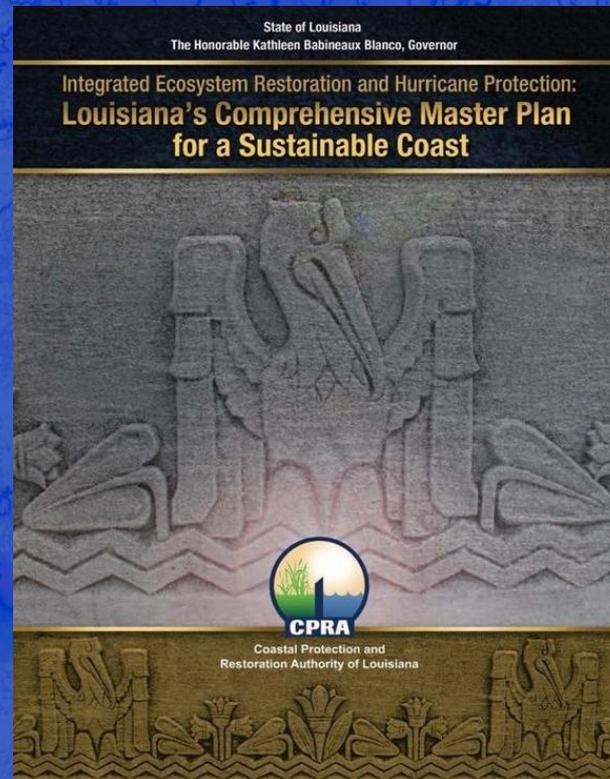


At Risk

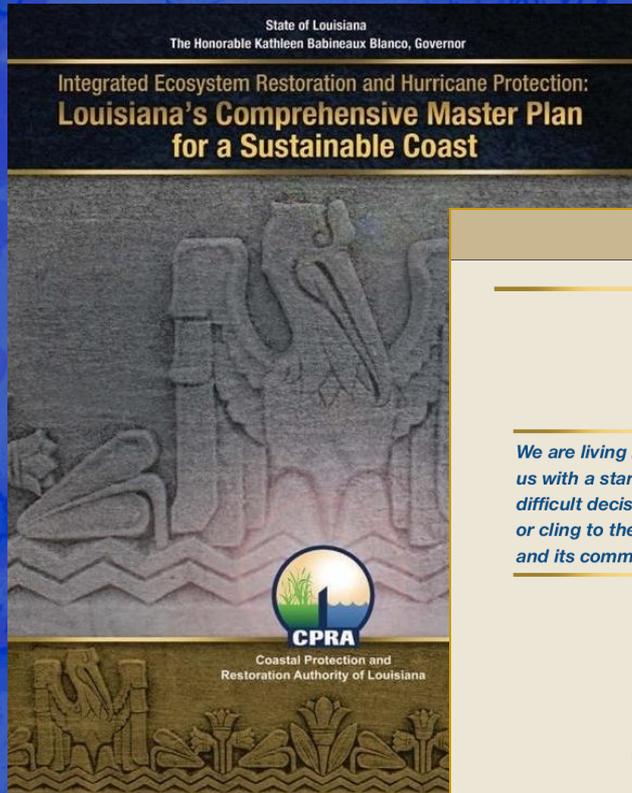
- Five million waterfowl
- 25 million songbirds
- America's largest wintering habitat for migratory waterfowl and songbirds
- 70 rare, threatened, or endangered species
- Coastal wetlands serve as a buffer and retention area for storm surge
- Wetlands serve as part of the hurricane protection system



Integrated Ecosystem Restoration and Hurricane Protection: Louisiana's Comprehensive Master Plan for a Sustainable Coast



Create a Structure to Support Implementation of the Master Plan



Integrated Ecosystem Restoration and Hurricane Protection:
Louisiana's Comprehensive Master Plan for a Sustainable Coast

We are living in a historic moment, one that presents us with a stark choice: either make the bold and difficult decisions that will preserve our state's future, or cling to the status quo and allow coastal Louisiana and its communities to wash away before our eyes.

As the coastal program moves ahead, the plan recommends that a Coastal Assessment Group be made part of the state's management structure, along with an Applied Coastal Engineering and Science Program. These groups would be responsible for making sure that advancements in science and technology are integrated into the state's program.

Stringent inspections of hurricane protection systems, assessments of the effects of restoration and protection actions, and regular updates of the Master Plan are also important tools for keeping the program on track.

These recommendations assume as their point of departure that saving coastal Louisiana and the critical services it provides requires the same basic commitment from all concerned: the resolve to achieve and maintain an unprecedented level of excellence in our stewardship of coastal Louisiana. This commitment does not seek to elevate one set of needs over another, but rather to balance the many interests—cultural, economic, and ecological—that together make America's Wetland one of the most unique and vital coastal regions in the world.

“We are living in a historic moment, one that presents us with a stark choice: either make the bold and difficult decisions that will preserve our state's future, or cling to the status quo and allow coastal Louisiana and its communities to wash away before our eyes.”

What the Master Plan is...



A Strategy for a Sustainable Coast

Four objectives:

Reduce risk to communities

Restore sustainability to the coastal ecosystem

Maintain a diverse array of fish and wildlife habitats

Sustain Louisiana's unique heritage and culture

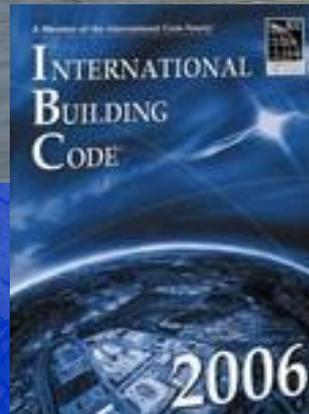


Single Approach is Not the Solution



Prioritization Tool

Tool Kit



USACOE

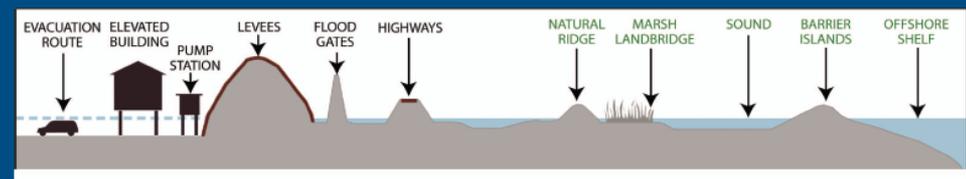


Figure 5: Multiple lines of defense concept (adapted from graphic produced by the Lake Pontchartrain Basin Foundation).

Cannot Allow for Wasted Sediment (aka potential land)



Storm Surge Attenuation Benefits Provided by Coastal Wetlands

