The People of the Bayou, 2006 A.D.

Adversity with Hope for Resurrection through the Power of a Consensus Agreement

The Barataria-Terrebonne National Estuary Program

March 2006

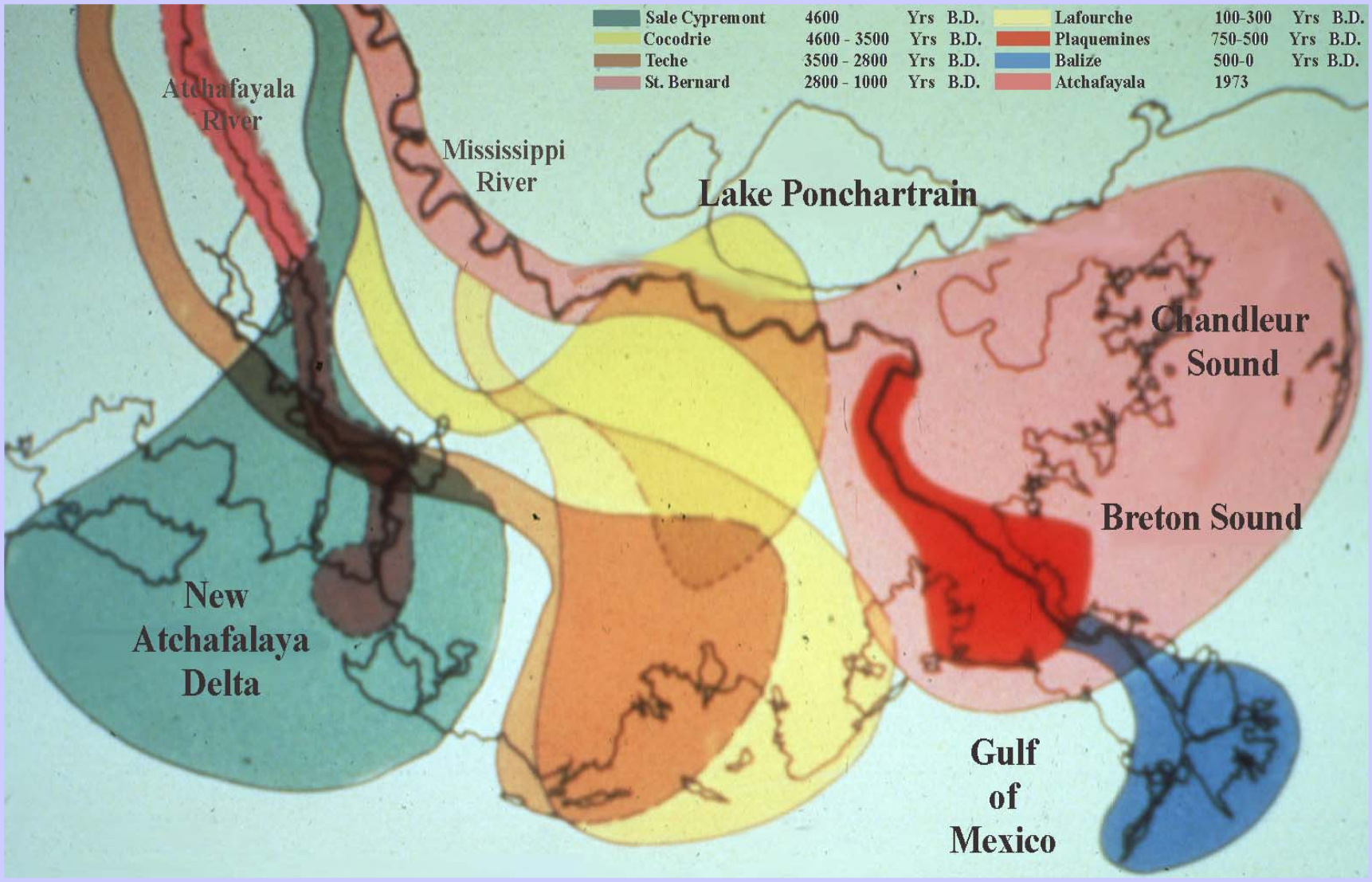
BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Barataria-Terrebonne National Estuary

www.btnep.org

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Major Mississippi River Delta Lobes



BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Habitat types of the Barataria-Terrebonne Basins

- Chenier (French for oak) ridges have been designated as critically-imperiled habitats in the BTNEP, particularly for Neo-tropical Migrant Birds

Seven Priority Problems

affecting the 4.2 million-acre Barataria-Terrebonne system were identified in 1990

- Hydrologic Modification
- Reduced Sediment Inflow
- Habitat Loss / Modification
- Eutrophication
- Pathogen Contamination
- Toxic Substances
- Changes in Living Resources

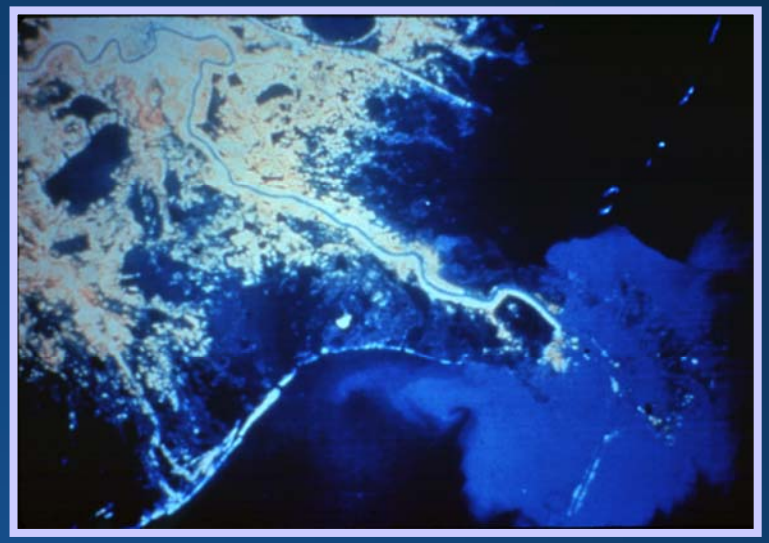
BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Hydrologic Modification

Man-made changes in the way water moves through the system

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Reduction in Sediment Availablity



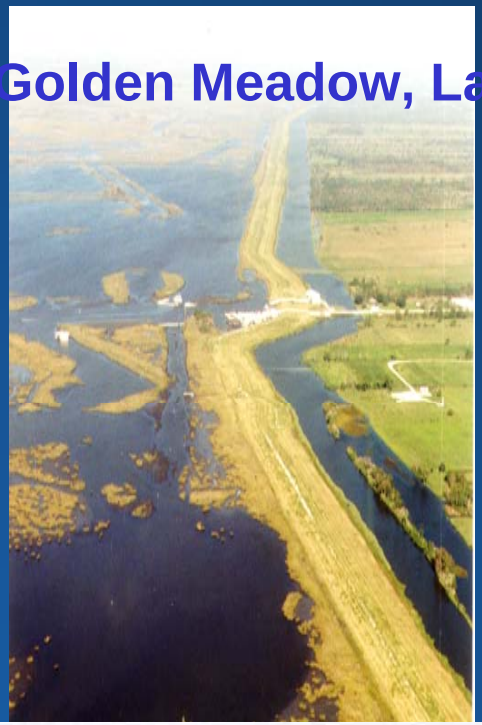
Silt deposition in wetlands no longer offsets subsidence

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Since 1850, the suspended sediment load in the Miss. River has declined by 80% !

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

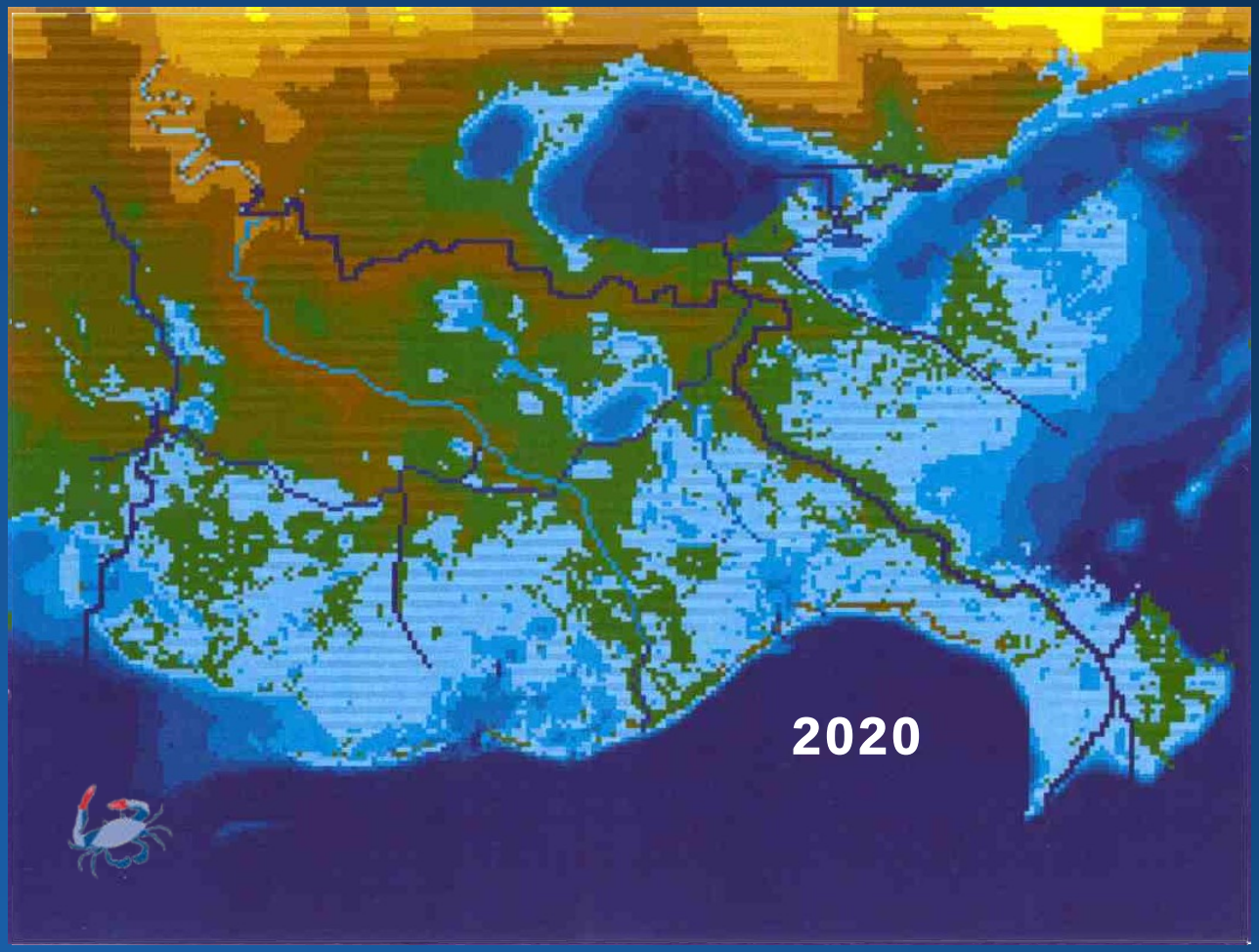
Habitat Loss



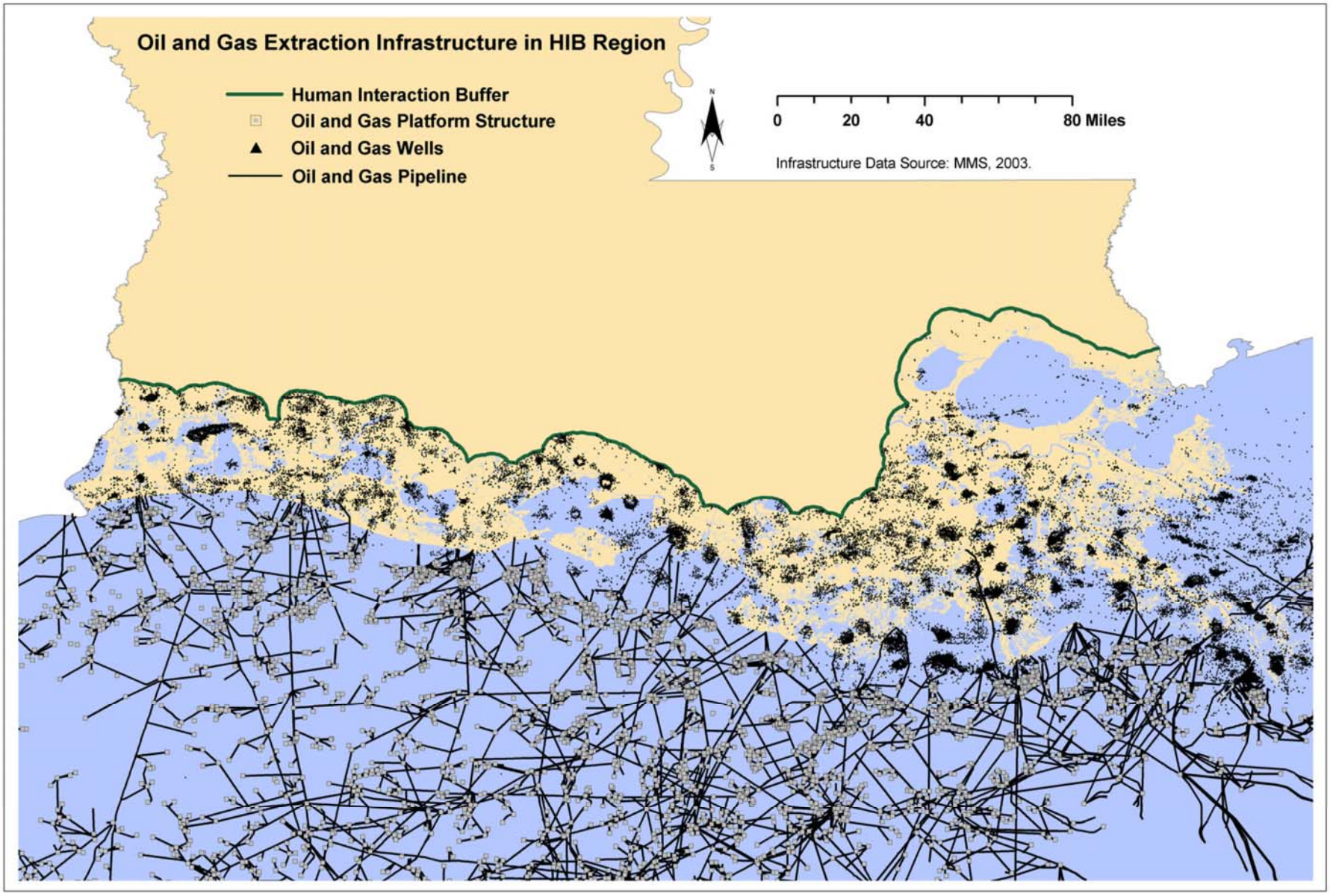
Barataria-Terrebonne is disappearing faster than any other area in the world

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Past and Projected Wetland Loss in the BTNEP (1839 to 2020)



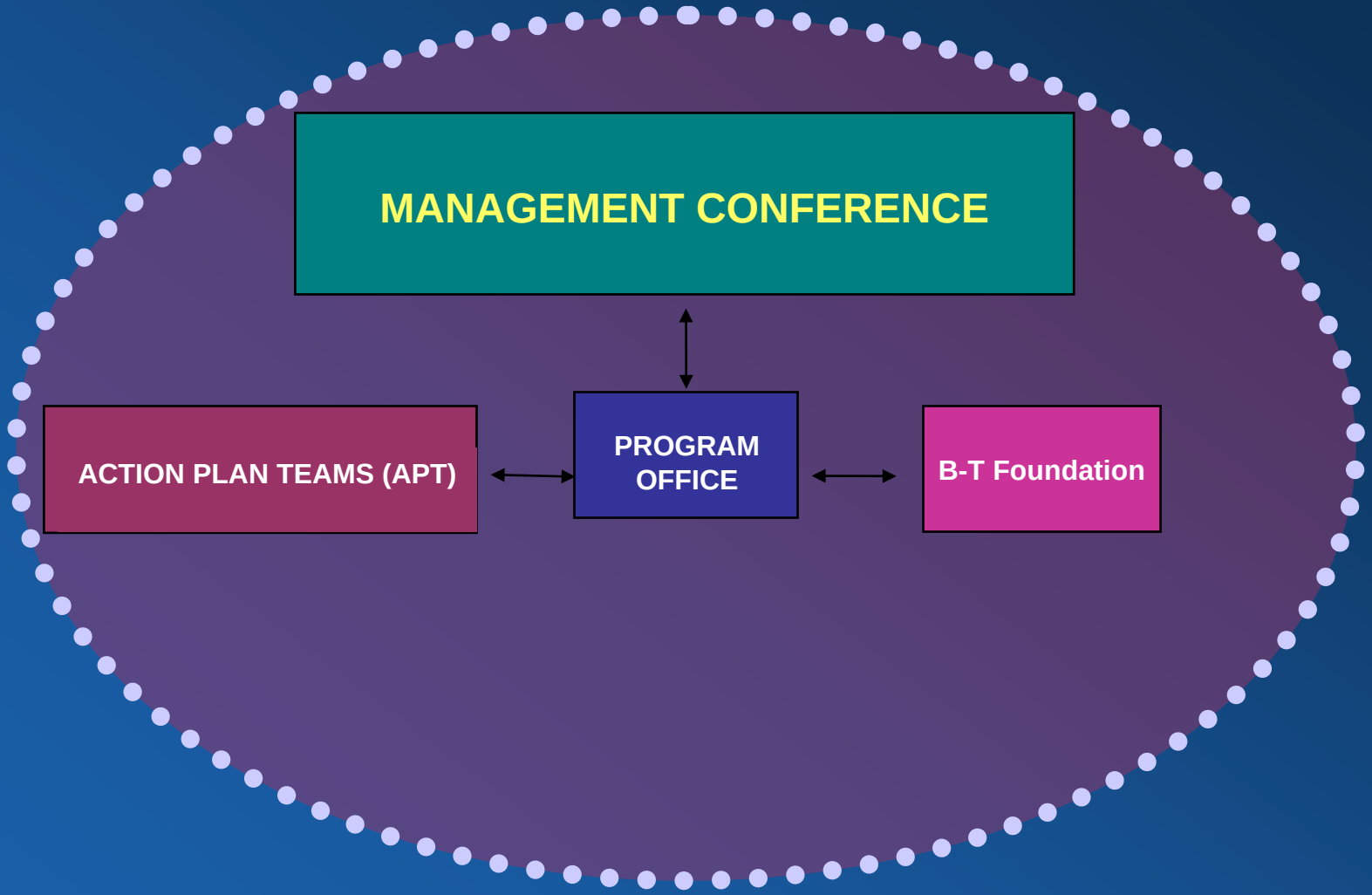
BTNEP
BARATARIA-TERREBONNE
NATIONAL ESTUARY PROGRAM



BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

BTNEP

Implementation Phase Structure



The B-T Management Conference

Natural Resources Conservation Service
Greater Lafourche Port Commission
La Dept. of Environmental Quality
La Dept of Economic Development
Coalition to Restore Coastal La.
The Nature Conservancy
National Park Service
Gulf Intracoastal Canal Assoc.
La. Assoc. of Levee Boards
US Geological Survey
Plaquemines Parish
La Farm Bureau
LSU Ag Center
US Coast Guard
Jefferson Parish
La Science Teachers Assoc.
South La Economic Council
La Dept of Natural Resources
American Sugar Cane League
American Waterways Operators
La Environmental Action Network
La Independent Oil and Gas Assoc.
La. Assoc. of Conservation Districts
US National Marine Fisheries Service

La Dept of Culture, Recreation and Tourism
US Environmental Protection Agency
La Dept of Health and Hospitals
Gov. Office of Coastal Activities
La Mid Continent O & G Assoc
US Army Corp. of Engineers
US Fish & Wildlife Service
La Wildlife Federation
Nicholls State Univ.
Assumption Parish
Lafourche Parish
St Charles Parish
Land Owners. Assoc.
La Dept of Education
Terrebonne Parish
La Oil Spill Coordinators Office
La. Dept. of Wildlife & Fisheries
La Seafood Management Council
Coastal Conservation Assoc of La.
La. Dept of Agriculture & Forestry
Bayou Lafourche Freshwater District
La. Universities Marine Consortium
South Central Planing & Development Com.

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

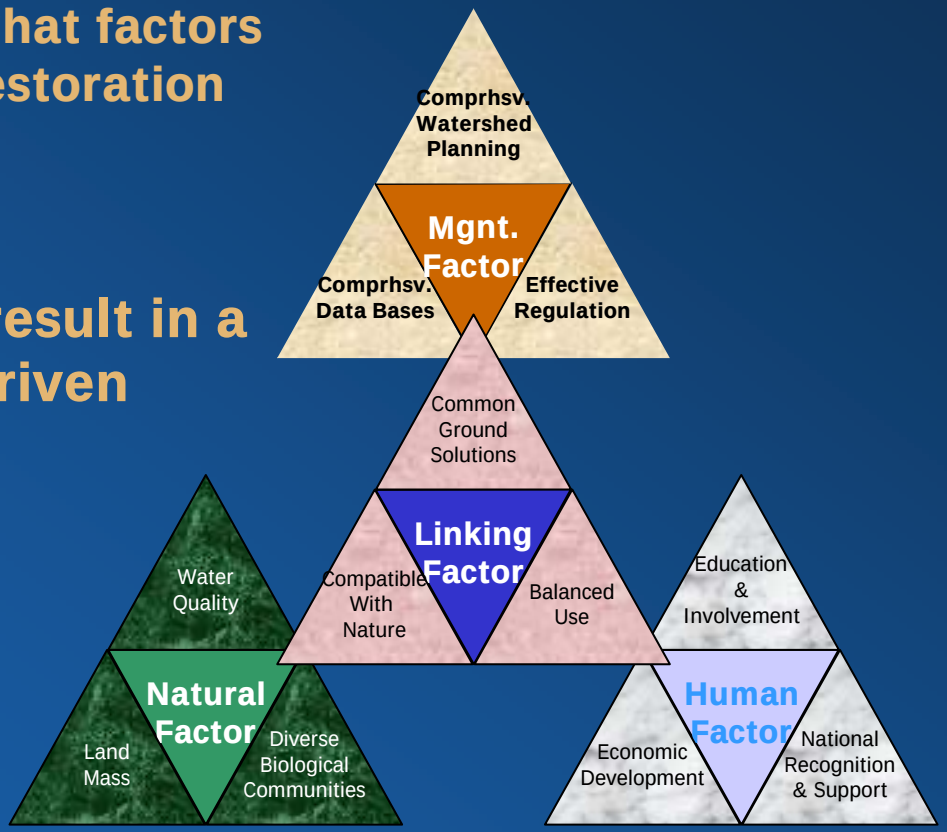
A Conceptual Model for the BTNEP Approach to System Restoration

"Most people are concerned about the environment but feel overwhelmed by the complexity and scale of the problems." - Maurice Strong, Chairman of the Earth Council, 2001

Given the overwhelming complexity and scale of our problems, what factors need to be considered in a restoration plan?

Answer:

Any and All Factors that result in a holistic, consensus driven agreement.



BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

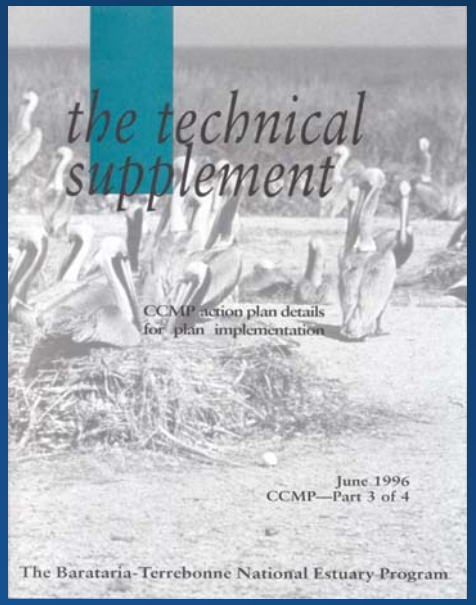
Barataria-Terrebonne National Estuary Program Comprehensive Conservation and Mgt. Plan

51 Action Plans address living resources, habitat, and water quality issues

PLUS…

Cultural Heritage, Education, National Recognition, Economic Development, and Coordinated Planning.

- **This broader, holistic approach is the greatest strength of the NEPs and can be used to effect positive change among program partners.**

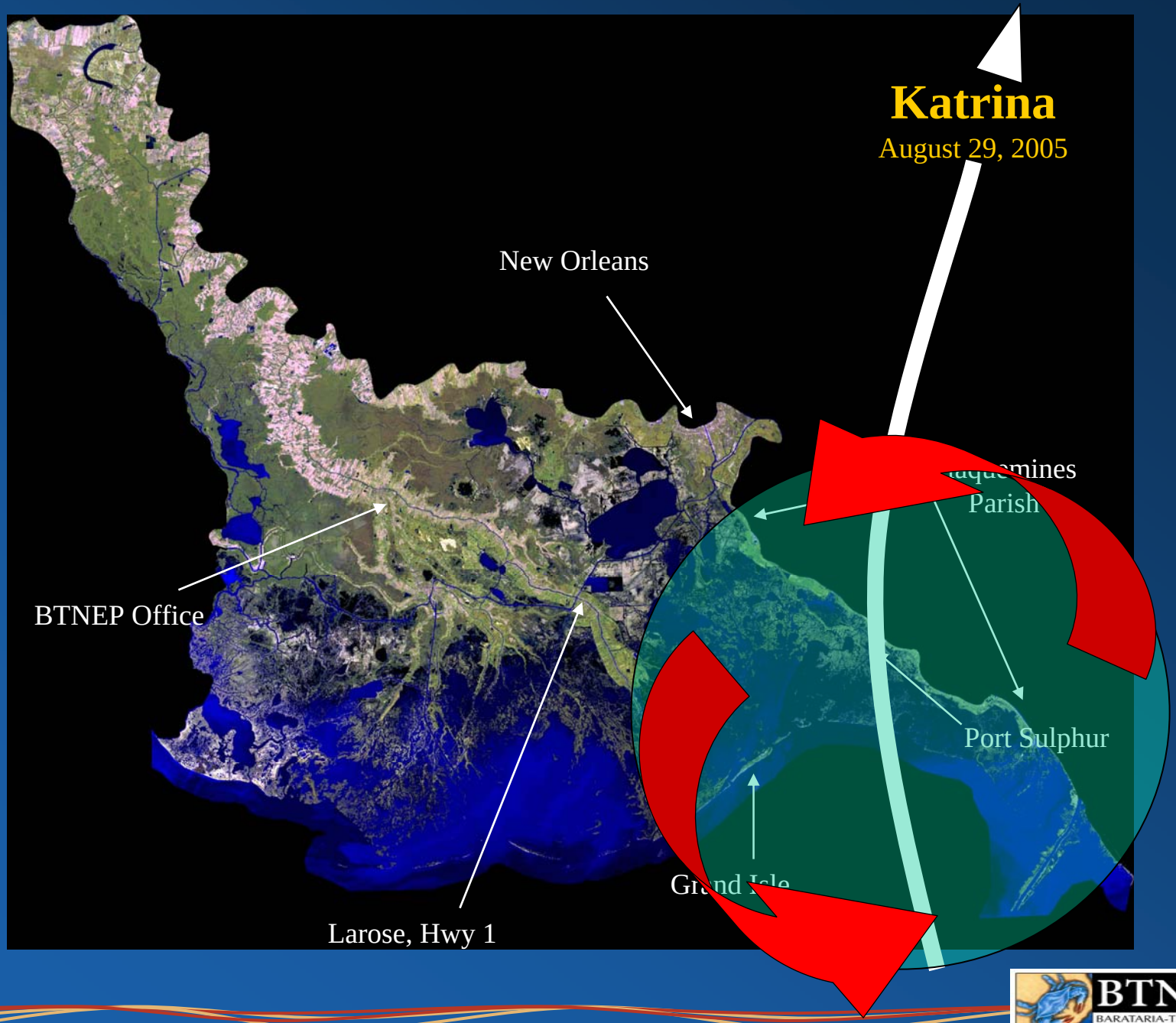


BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

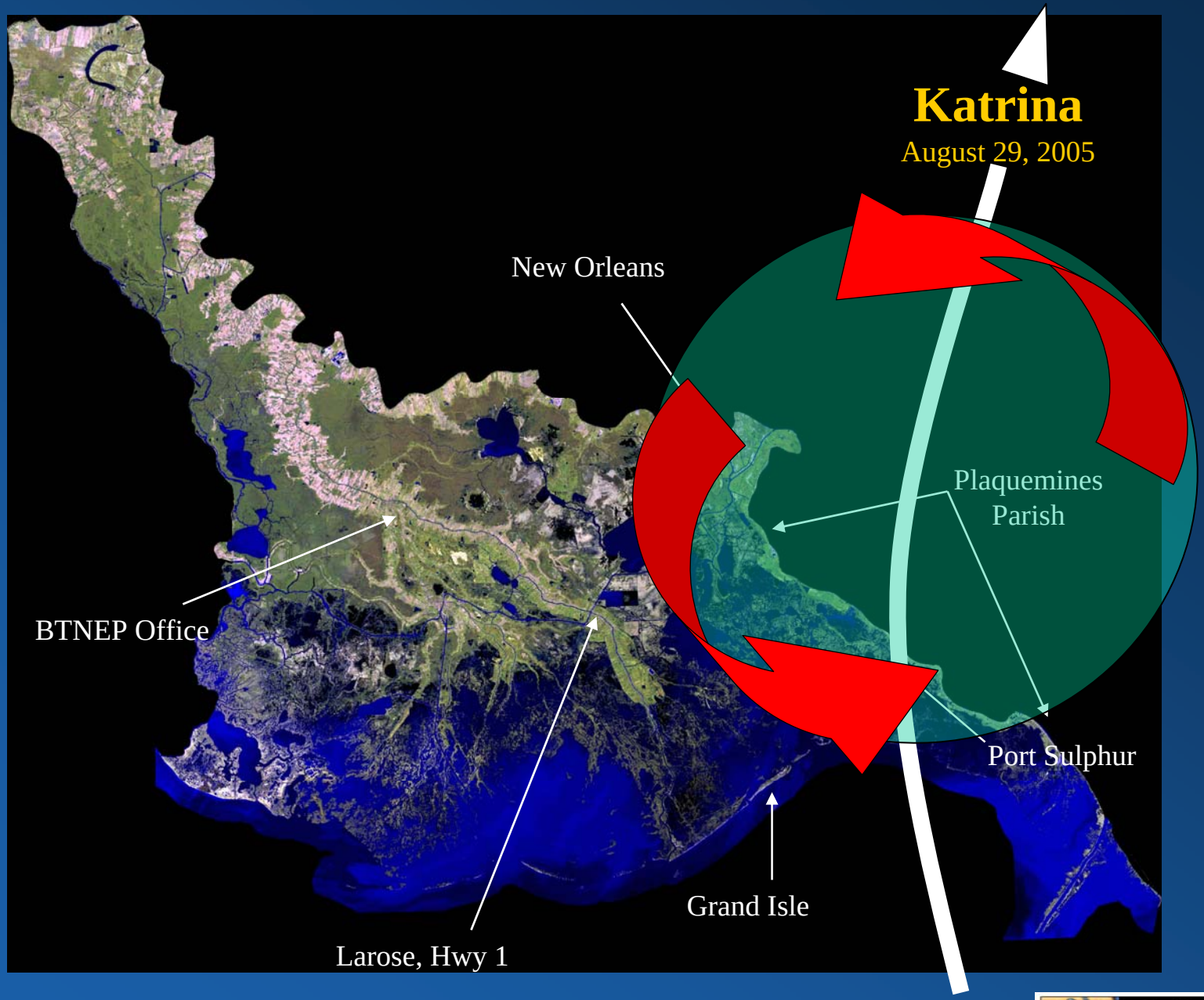
Hurricane Katrina

August 29, 2005

BTNEP
BARATARIA-TERREBONNE
NATIONAL ESTUARY PROGRAM



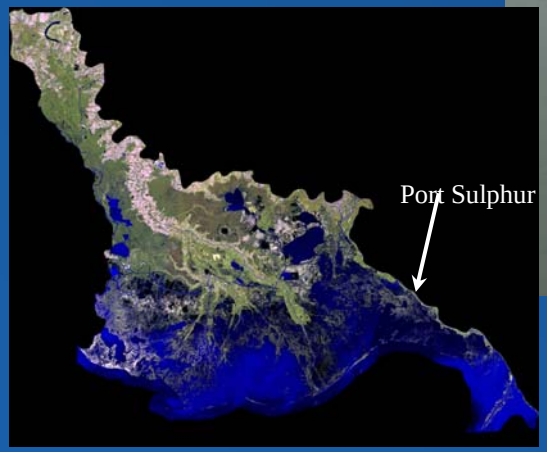
BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM



BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

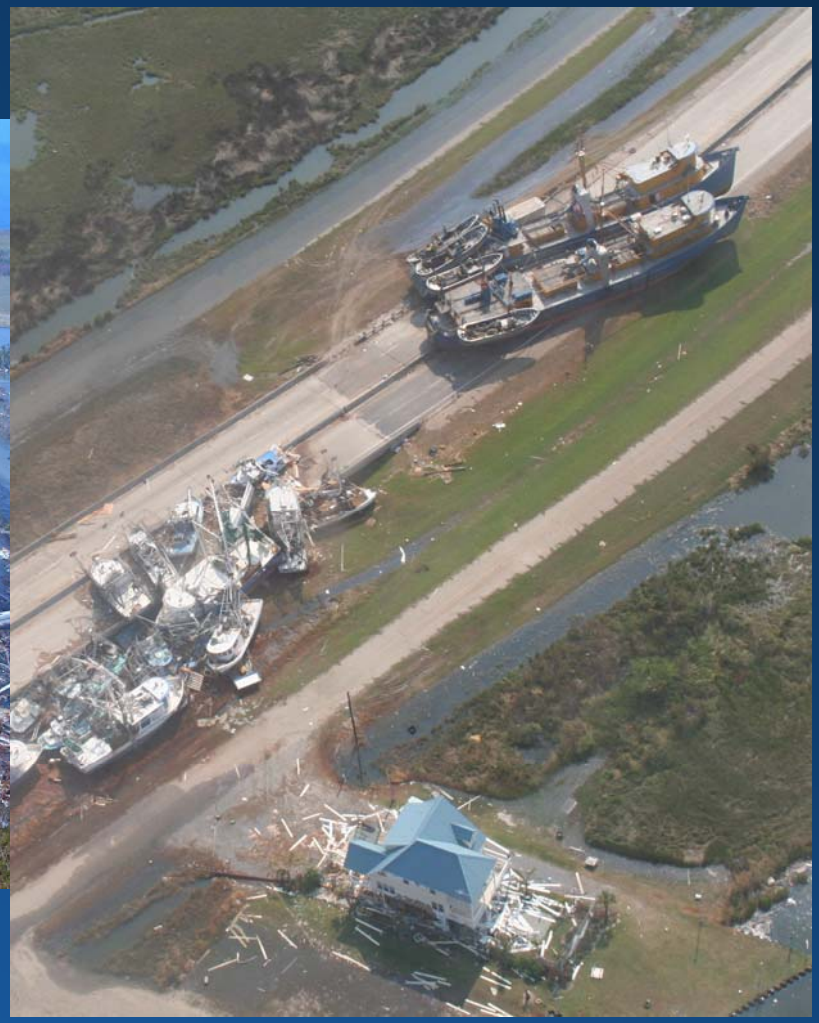
Port Sulphur, La.

Plaquemines Parish



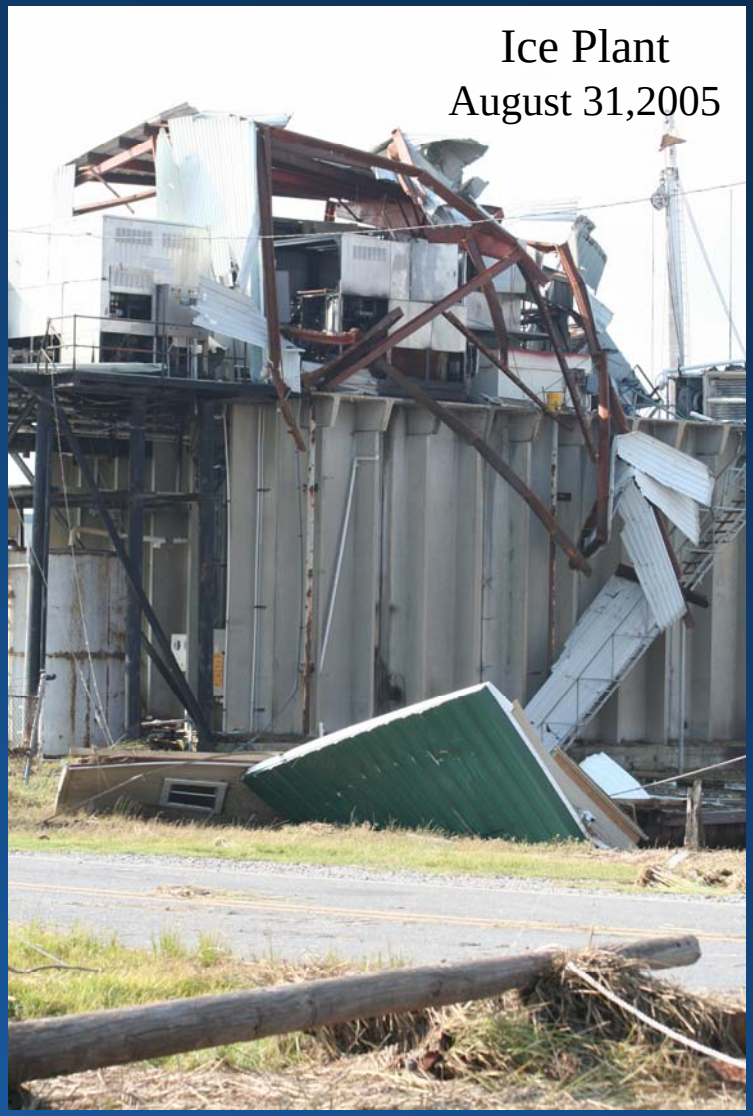
BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Empire, La.- Shrimp and Oyster Harbor



BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Port Fourchon, La. August 31,2005



BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Fisheries Implications from Katrina and Rita

- Shrimp Losses – $72 - $81 Million
- Crab Losses - $12.3 – $15.1 Million
- Oyster Losses – $25.2 – $44 Million
- Commercial Vessels Missing – 1,800 – 3,500
- Recreational Vessels Missing – 30,000 –40,000

* Data compiled by Rex Caffey, LSU Sea Grant and BTNEP Management Conference Rep.

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Oak, Maritime Forest, Grand Isle, La.

August 31,2005

Katrina surge from this direction

Live-Oak, Maritime Forests

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Forestry Impacts from Katrina and Rita

- Cypress and tupelo faired well.
- Oak, maple, willow, and cottonwood had significant damage
  - 40,500 acres of damaged forest in Louisiana

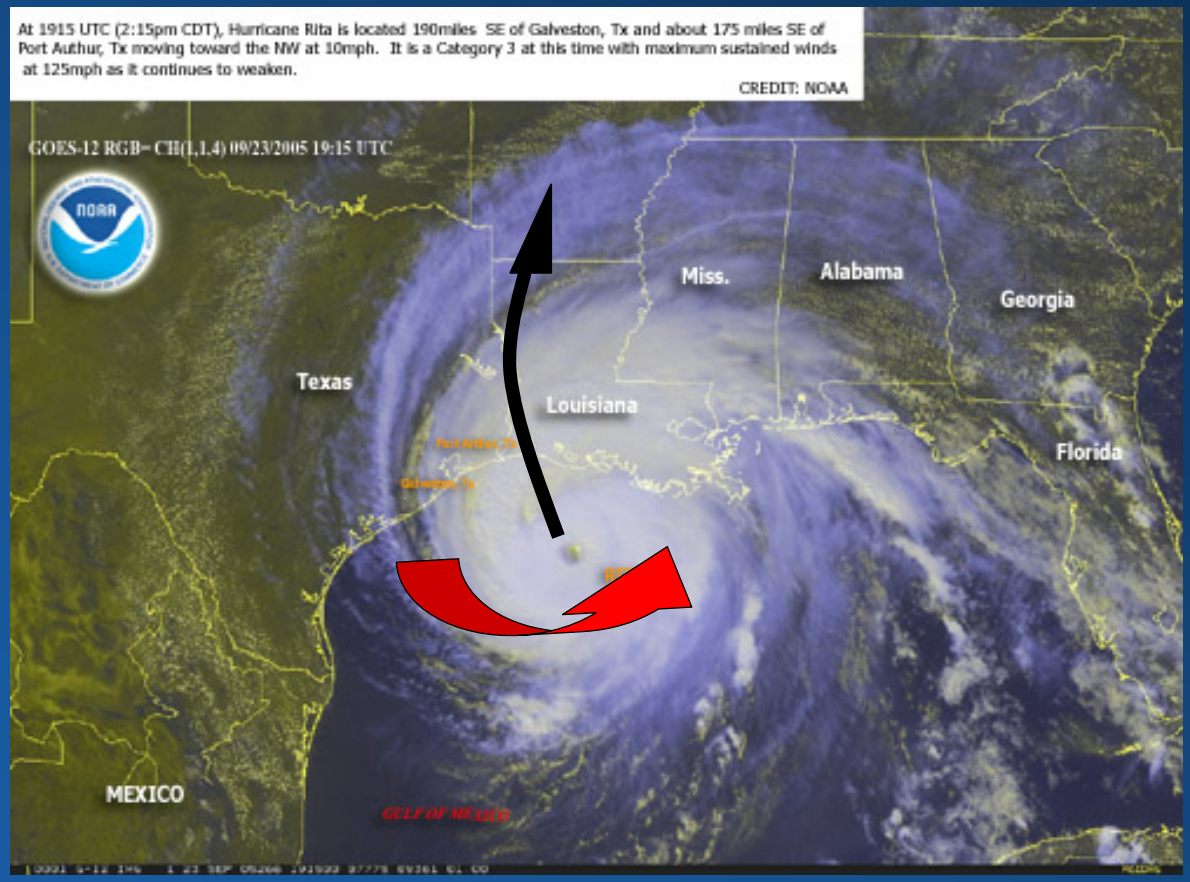
*Data compiled by Rex Caffey, LSU Sea Grant and BTNEP Management Conference Rep.

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Hurricane Rita

September 24, 2005

BTNEP
BARATARIA-TERREBONNE
NATIONAL ESTUARY PROGRAM

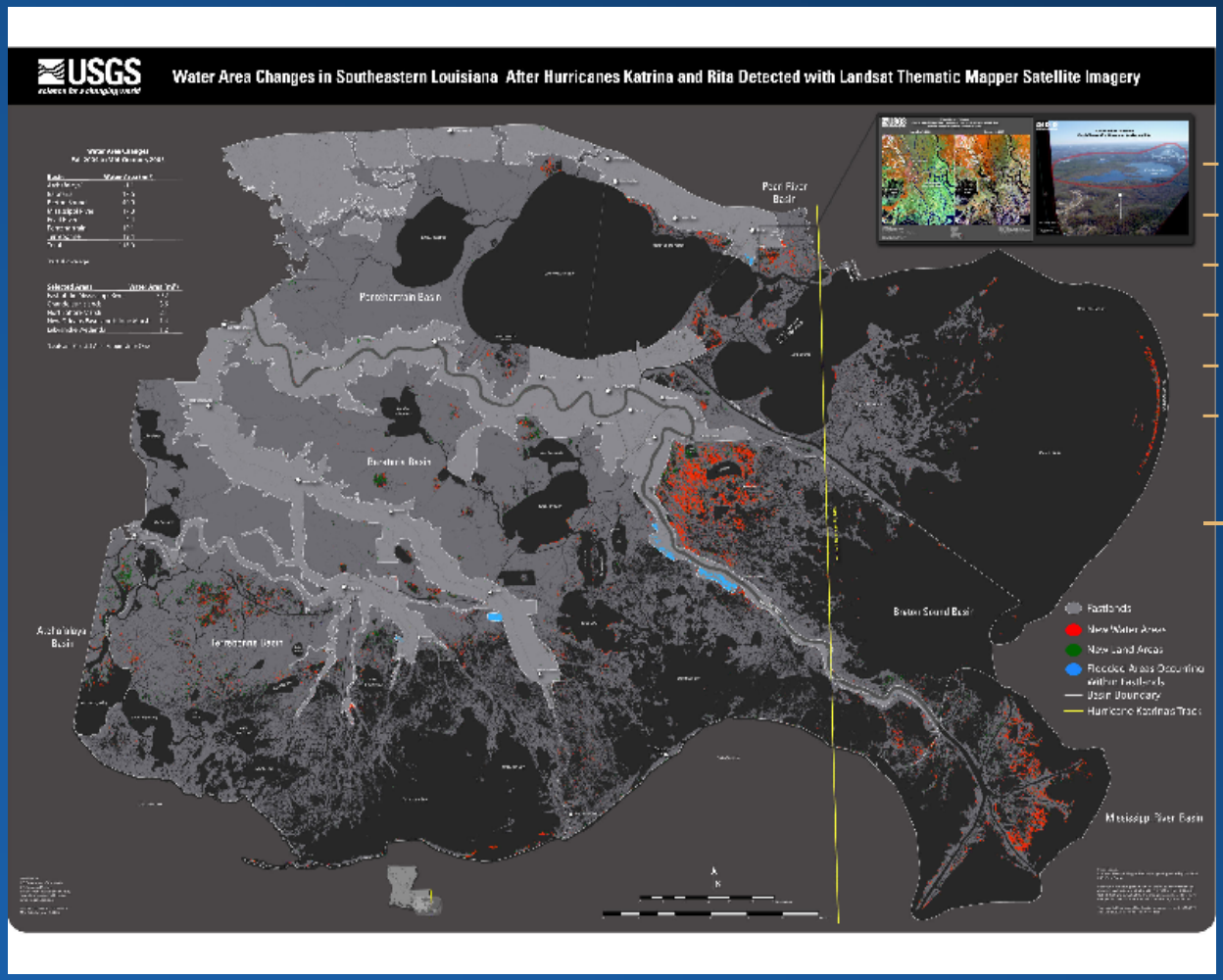


BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Levee Breach at Montegut, Terrebonne Parish, La.

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Hurricane Land Loss Summary



- Breton Sound……. 40.9 mi^2
- Pontchartrain …….19.1 mi^2
- Miss. Riv. Basin……17.8 mi^2
- Pearl Basin……..4.4 mi^2
- Barataria……..…..17.6 mi^2
- Terrebonne……..…19.4 mi^2

- **Total = 118 square miles**

*** Data supplied by John Barras, USGS**

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Still Smiling in Chauvin, La.

Mr. Lucius Thibodaux, star of USA Today and teller of several new "Boudreaux and Thibodaux" jokes…while cleaning his flooded home

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

So how do we fix it…

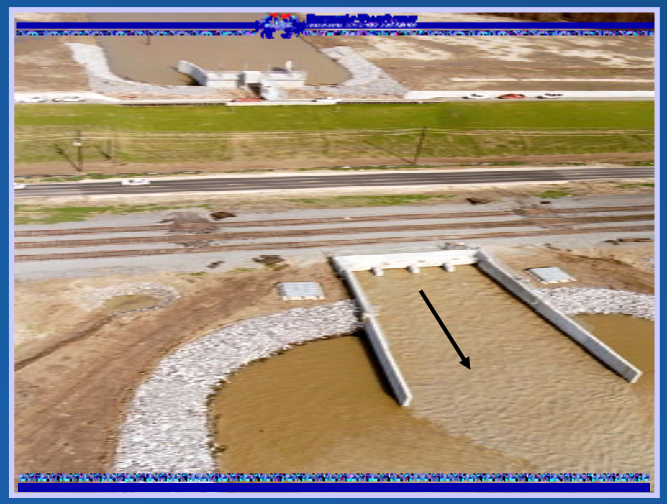
BTNEP
BARATARIA-TERREBONNE
NATIONAL ESTUARY PROGRAM

If we are to be successful in our coastal restoration efforts we must allow for some level of current socio-economic patterns

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Davis Pond Freshwater Diversion

- Largest diversion to date in the Barataria Basin
- Completed in 2002
- Cost = $119.6 million
- 10,650 cubic feet per second (max)

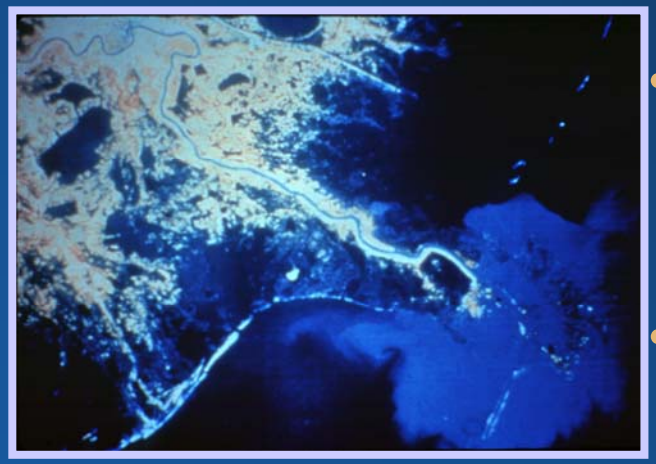


BTNEP
BARATARIA-TERREBONNE
NATIONAL ESTUARY PROGRAM

Sediment Delivery from Miss and Atchaf. River Bottoms

- Need? Obviously, we need sediments! (Barrier Islands, marshes, ridges, etc.)
- Public Support? Get needed sediment with little water, so publicly acceptable!
- Is this possible? Been doing it for decades! (La Hwy. 3127 road bed, Lake Palourde park, etc.)

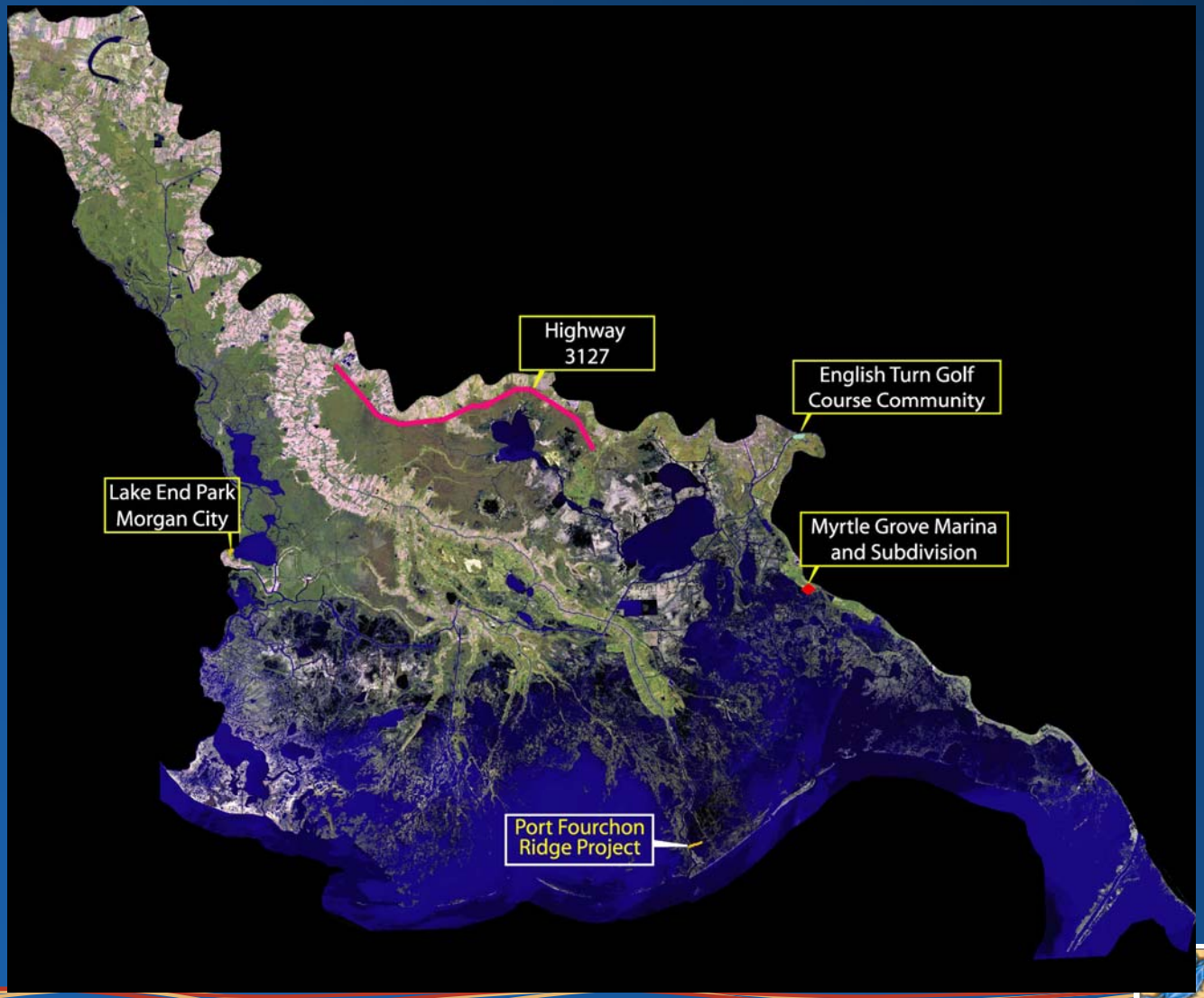
BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM



- Miss. and Atchafalaya convey over 180 million cu. yds. sediment annually.
- Corps N.O. District alone dredges 70 million cu. yds annually
- The amount dredged from the Miss. and Atchaf. exceeds the amount needed for restoration (ACOE).
- 100 million metric tons wasted over continental shelf.

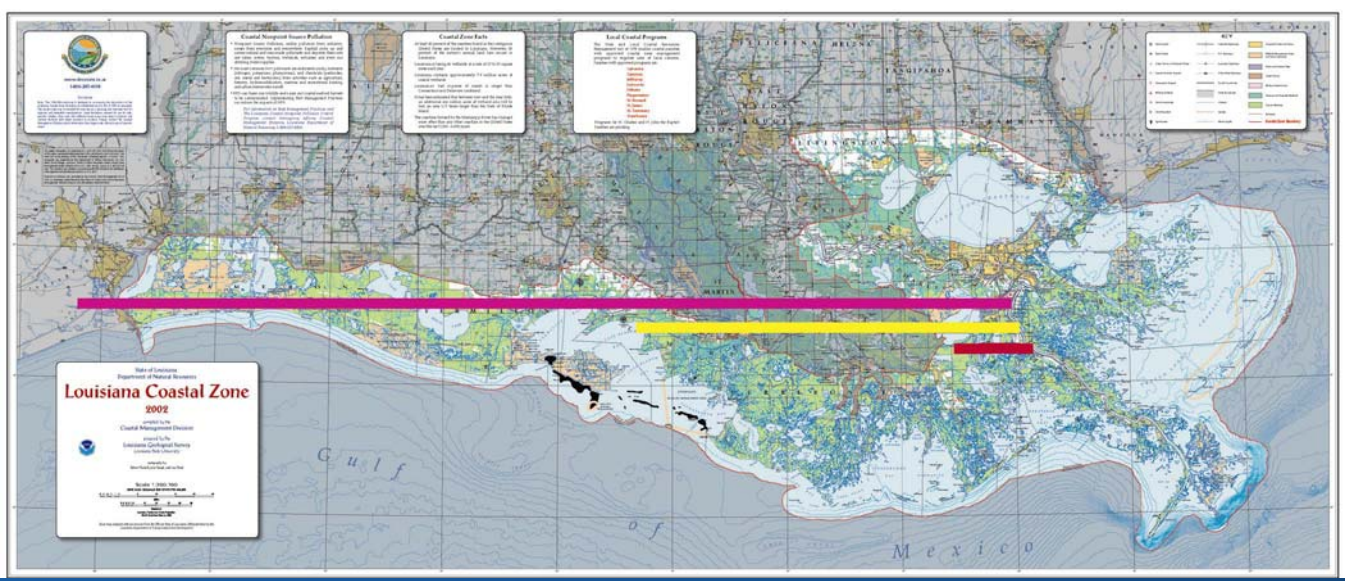
BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Sediment Slurry Projects Built within BTES from Pumped River Materials

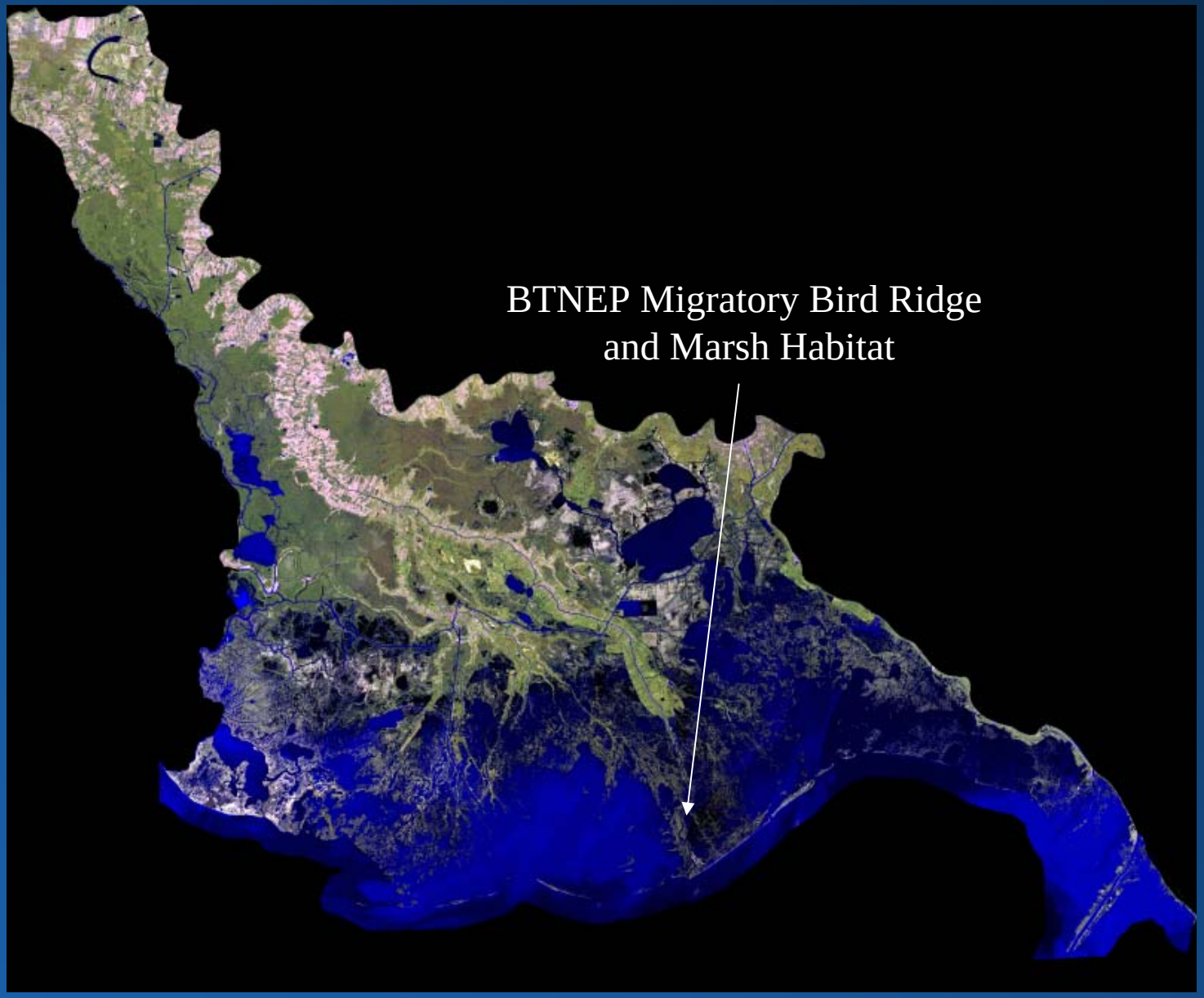


BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Distances possible with Existing Slurry Technology



- Sabine Pass to Port Arthur – 19 miles
- Atchafalaya Bay – 243 miles
- Rockefeller Refuge – 19 miles
- Terrebonne Bay – 19 miles
- Barataria Bay – 19 miles
- Pontchartrain Bay – 19 miles
- Slurry – Slurry – Slurry
- The Netherlands ..... 19,700 miles
- Samarco, Brazil ..... 245 miles



BTNEP
BARATARIA-TERREBONNE
NATIONAL ESTUARY PROGRAM

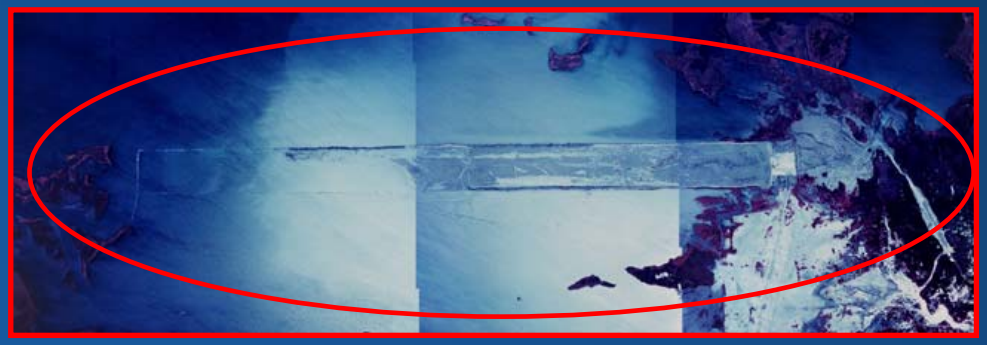
BTNEP Ridge Project

BTNEP
BARATARIA-TERREBONNE
NATIONAL ESTUARY PROGRAM

BTNEP
BARATARIA-TERREBONNE
NATIONAL ESTUARY PROGRAM

Maritime Forest Ridge and Fringe Marsh

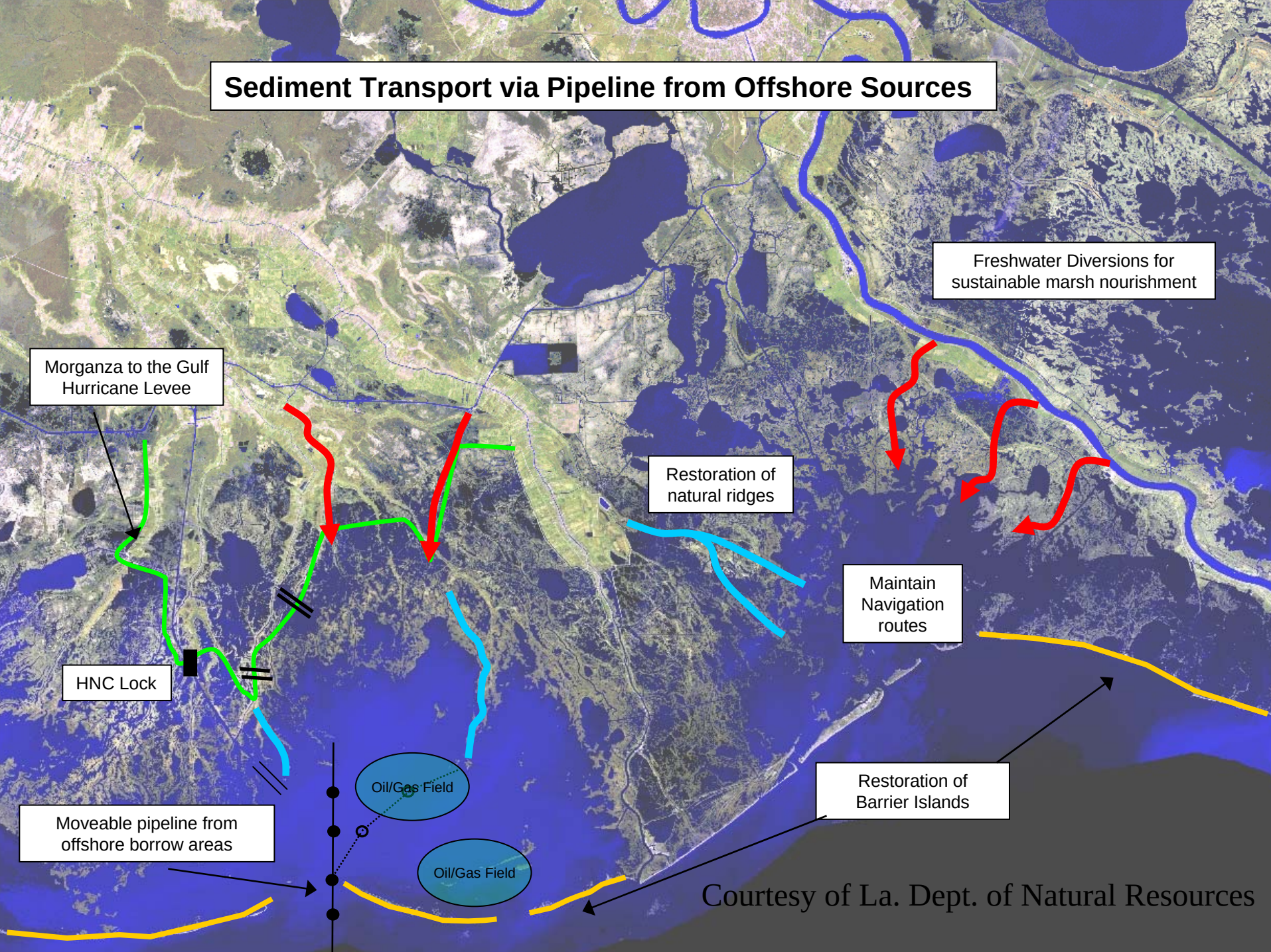
- Maritime ridge at Port Fourchon surrounded by marsh.
- 6000 feet long and 400 feet wide.
- Tidal Creek every 1000 feet for water exchange.
- Marsh grasses and woody plants used for project.
- Project Partners:
  - BTNEP
  - Greater Lafourche Port Commission
  - NOAA
  - Shell Pipeline
  - NRCS
  - Terrebonne Bird Club
  - Orleans Audubon, and the
  - U.S. EPA Gulf of Mexico Program

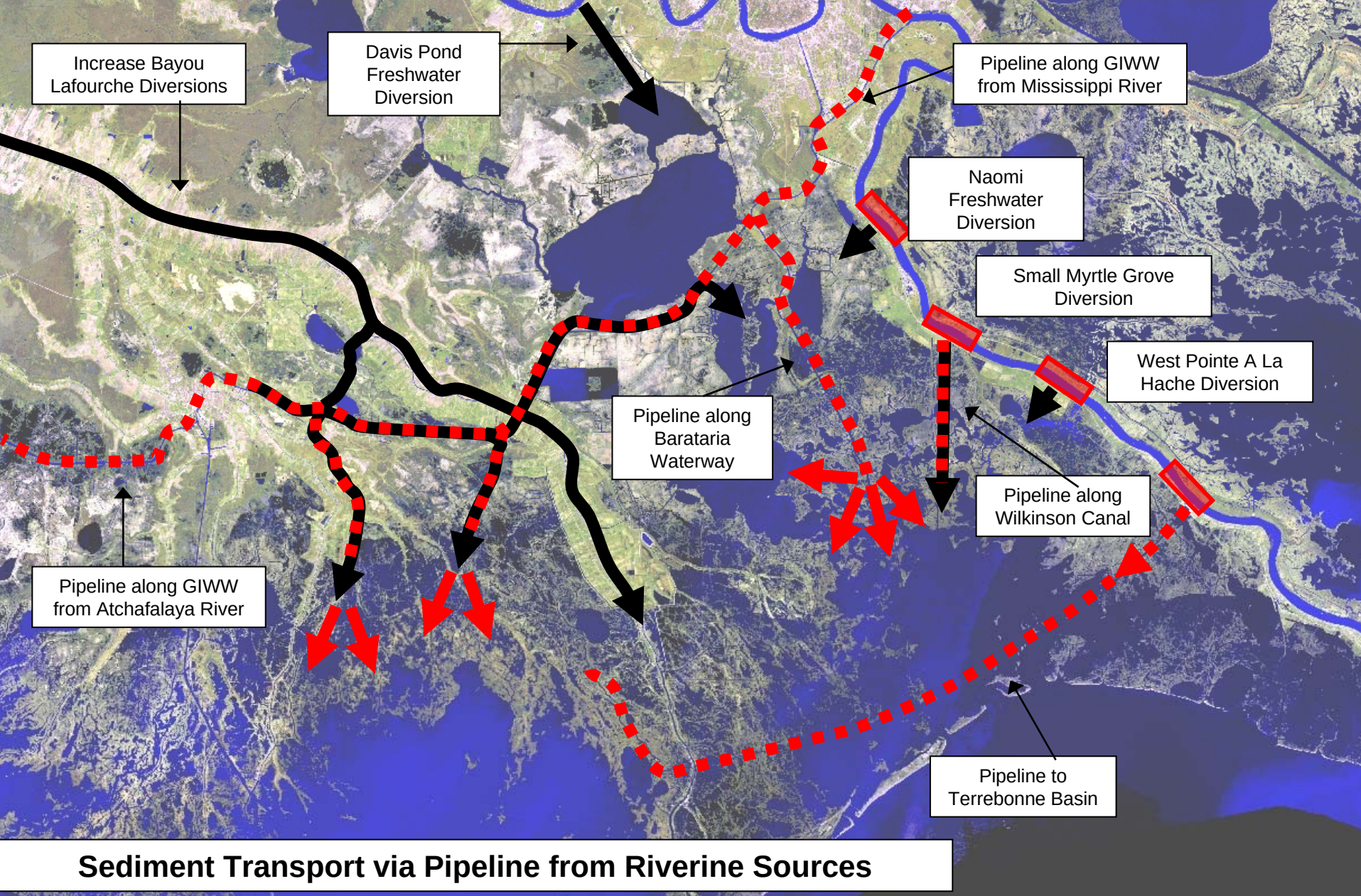


BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Wetlands can be created from sediments transported through pipelines with minimal amounts of water

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

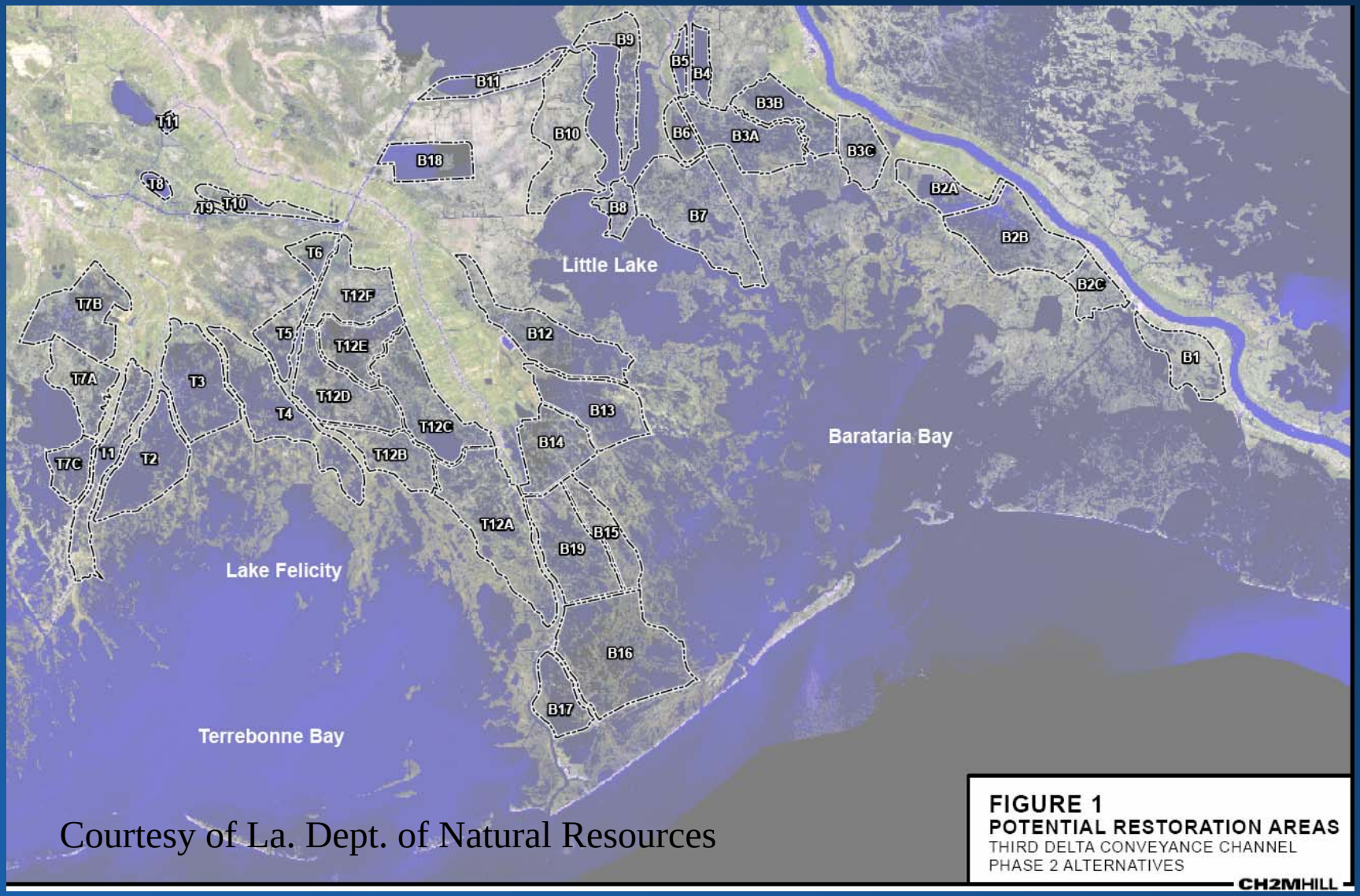

Sediment Transport via Pipeline from Offshore Sources
Freshwater Diversions for sustainable marsh nourishment
Morganza to the Gulf Hurricane Levee
Restoration of natural ridges
Maintain Navigation routes
HNC Lock
Restoration of Barrier Islands
Oil/Gas Field
Moveable pipeline from offshore borrow areas
Oil/Gas Field
Courtesy of La. Dept. of Natural Resources



Sediment Transport via Pipeline from Riverine Sources

Courtesy of La. Dept. of Natural Resources

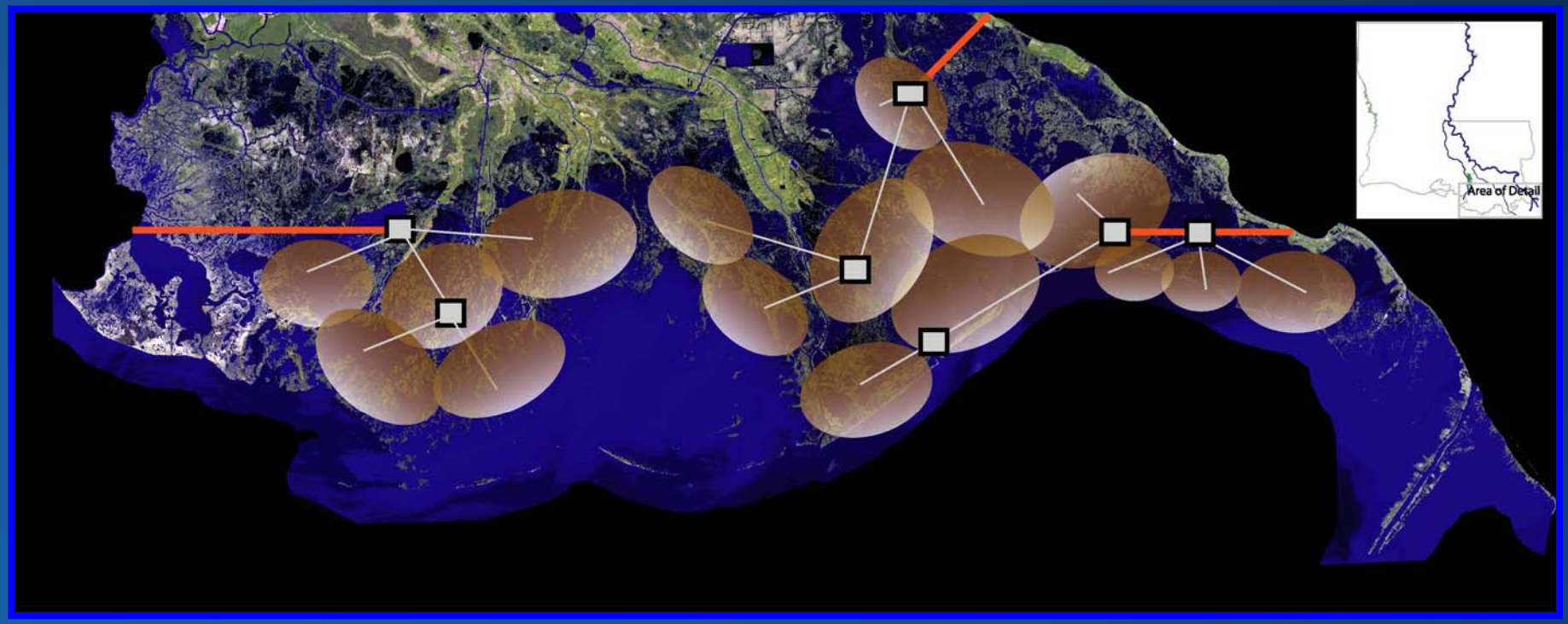
Potential Restoration Areas



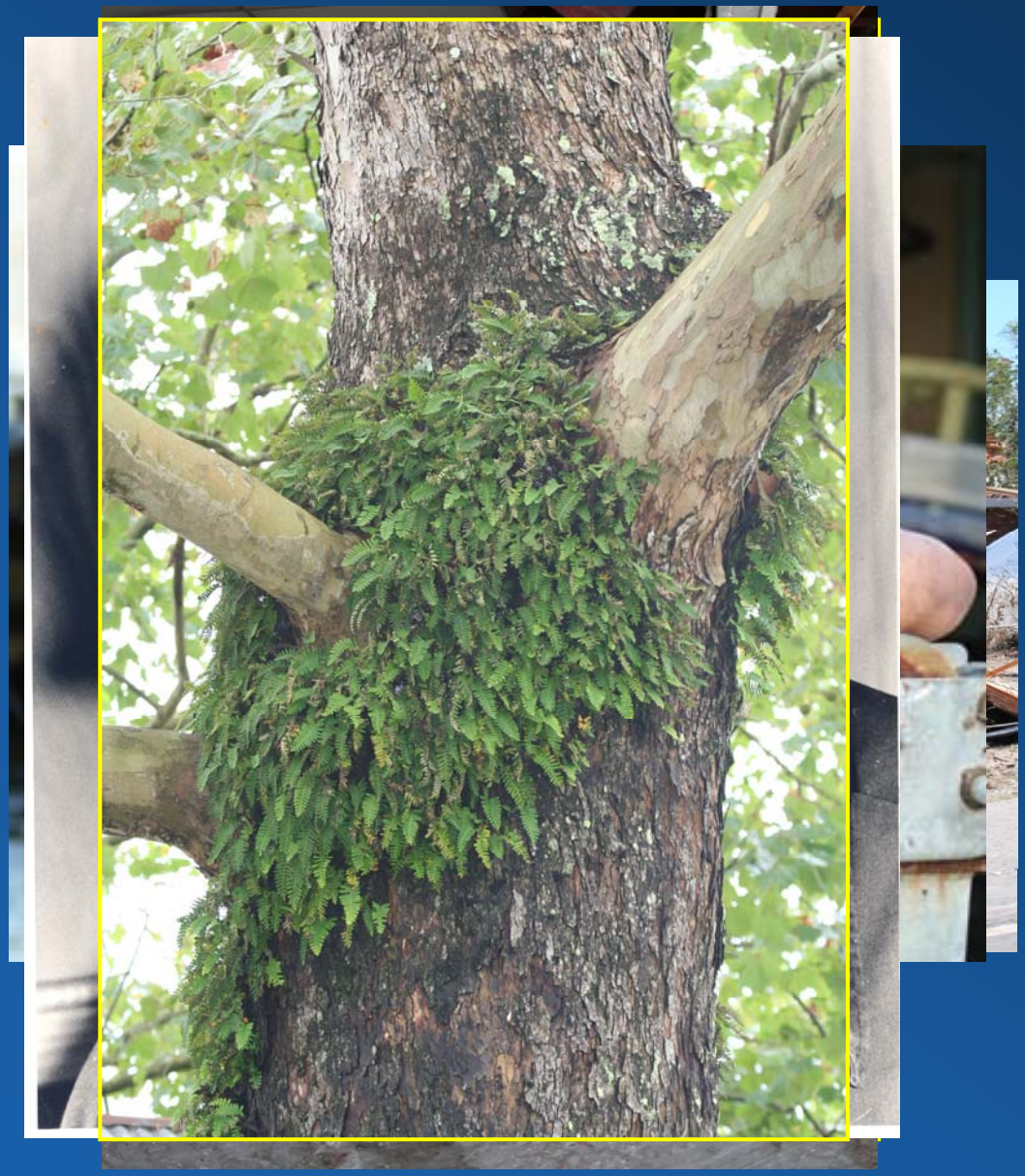
Courtesy of La. Dept. of Natural Resources

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

So let's get started!



BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM



Resurrection

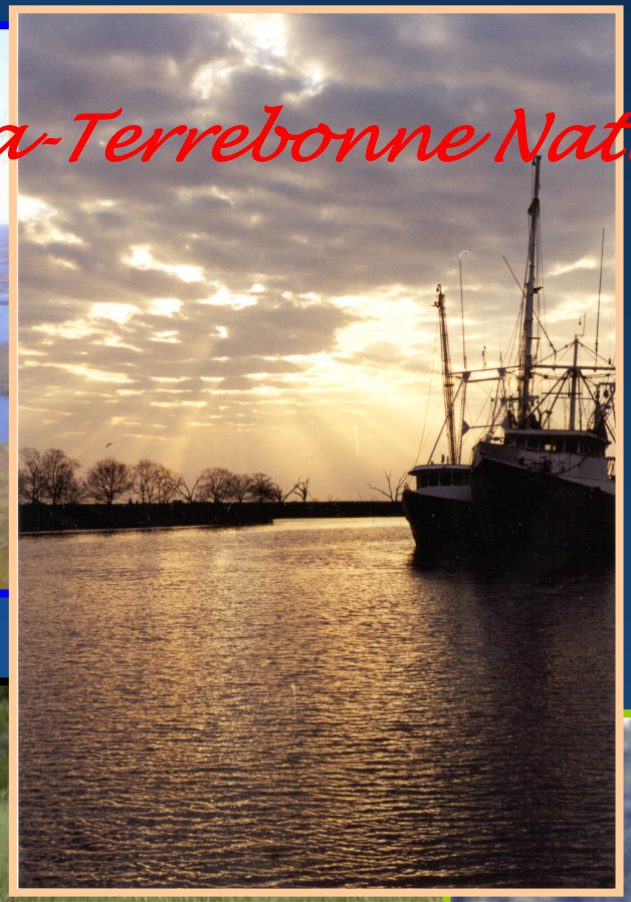
But when the rain comes,
resurrection fern
springs up in a green mass
of strong backs and arched fronds
making leaf out of water
and the reservoirs of hope
hidden in their wiry roots…

If you listen you can hear them singing
the gospel of life's stubborn return.

©2005 Aurora Levins Morales, Friend and Poet

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

The Barataria-Terrebonne National Estuary…



Like No Other Place on Earth

BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM