



Evaluation of Louisiana's Mitigation Program

Enhancing Consistency with the State's Master Plan
and Improving the Coastal Use Permit Program

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Compensatory Mitigation



Mitigation:

All actions taken to avoid, minimize, restore, and compensate for loss of wetland ecological values due to an activity.

Compensatory Mitigation:

Compensatory mitigation is the replacement, substitution, enhancement or protection of ecological values to offset anticipated losses of wetland ecological values caused by a permitted activity.

How does OCM Quantify Compensatory Mitigation?:

The OCM uses the Wetland Value Assessment (WVA) to assess and quantify mitigation once it has been established that permanent adverse impacts have been avoided, minimized and/or justified, any permanent impacts to coastal ecosystems are assessed and quantified using the WVA for wetland ecological value losses. The WVA is OCM's habitat evaluation tool which quantifies impacts and benefits to wetlands.

Mitigation Evaluation Document



The Mitigation Evaluation Document is a 50+ Page Document that provides the data and information supporting the need for programmatic change.

- Executive Summary
- Introduction
 - Goals and Objectives
 - Overview of the Program
 - Individual Mitigation Project Option Evaluation
 - Mitigation Banking Option Evaluation
 - In-Lieu-Fee Mitigation Option Evaluation
 - Summary of the Evaluation of all Mitigation Options
- Appendix A – Process Appendix to the Evaluation of Mitigation Program
- Appendix B – Summary of Recommendations for Programmatic Improvement
- Appendix C – Charts, Figures and Images

Why was the Evaluation Necessary?



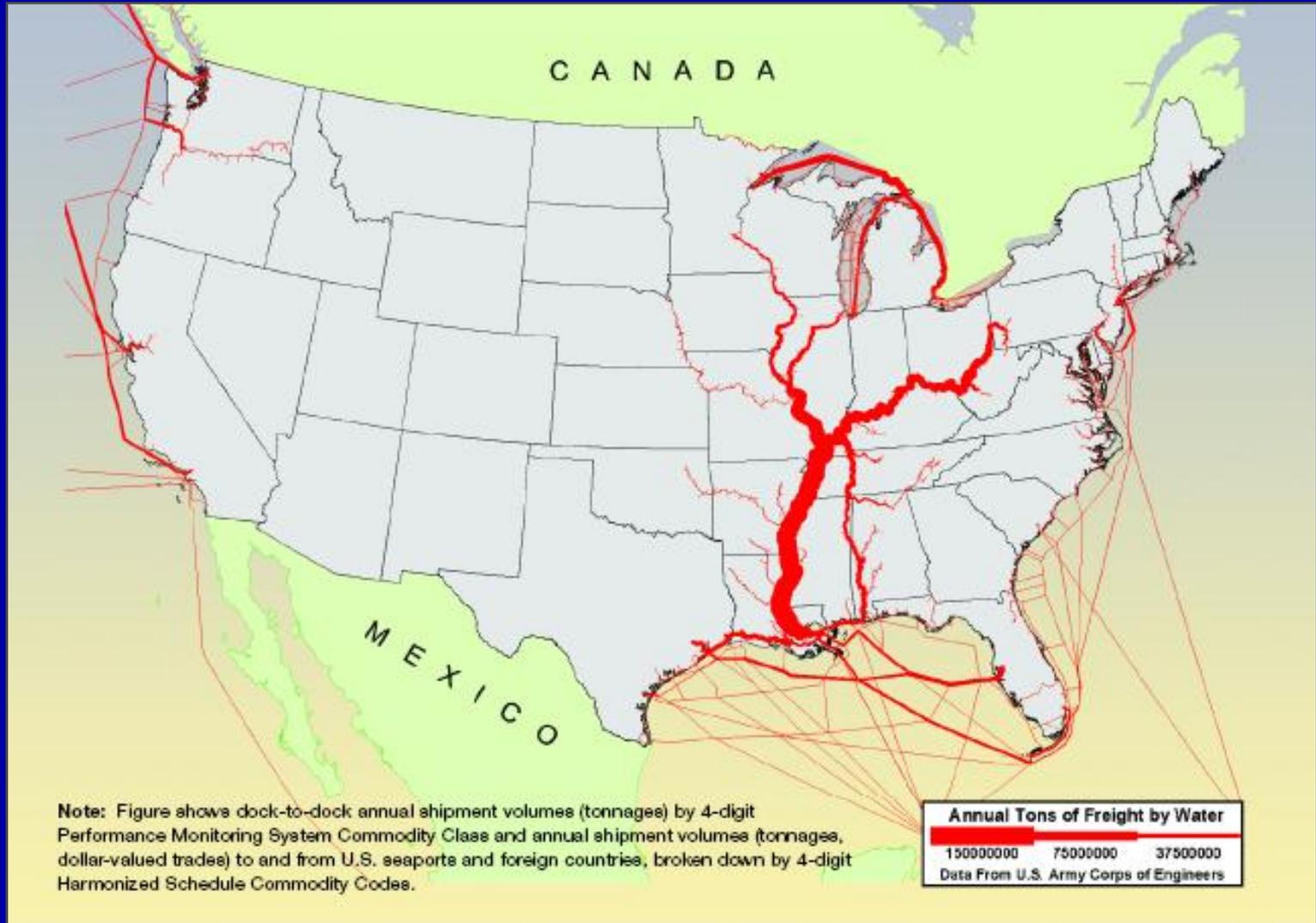
- Louisiana is a Working Coast that is currently in a state of crisis due to coastal land loss.
- The results of the hurricanes of 2005 changed the 'status-quo' for the Louisiana Coast leading to integrated coastal protection and restoration efforts.
- The State has no resources to waste – mitigation efforts should be optimized to enhance sustainability and further compliment ongoing coastal protection and restoration.
- Modification to Current Mitigation Program is in order to better compliment the State's Master Plan and become a more effective programmatic tool.

LOUISIANA'S COAST

IMPORTANCE OF COAST TO STATE AND THE NATION:

- Coastal Population: over 2 million residents
- Maritime/Ports: estimated \$35 billion annually
 - nearly 300,000 jobs
- Fisheries: nearly \$3 billion annually
- Energy: over \$70 billion annually
 - 325,000 jobs
 - Increase of \$1 per barrel = \$11 million state budget

TONNAGE ON DOMESTIC WATERWAY NETWORK: 2005



NATIONAL PERSPECTIVE: PORTS-CARGO

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



LOUISIANA'S WATERWAYS



Louisiana Marine Transportation System Plan
State Project No 750-99-0130



Department of Transportation and Development
1201 Capitol Access Road
Baton Rouge, LA 70804-9245

September 2007

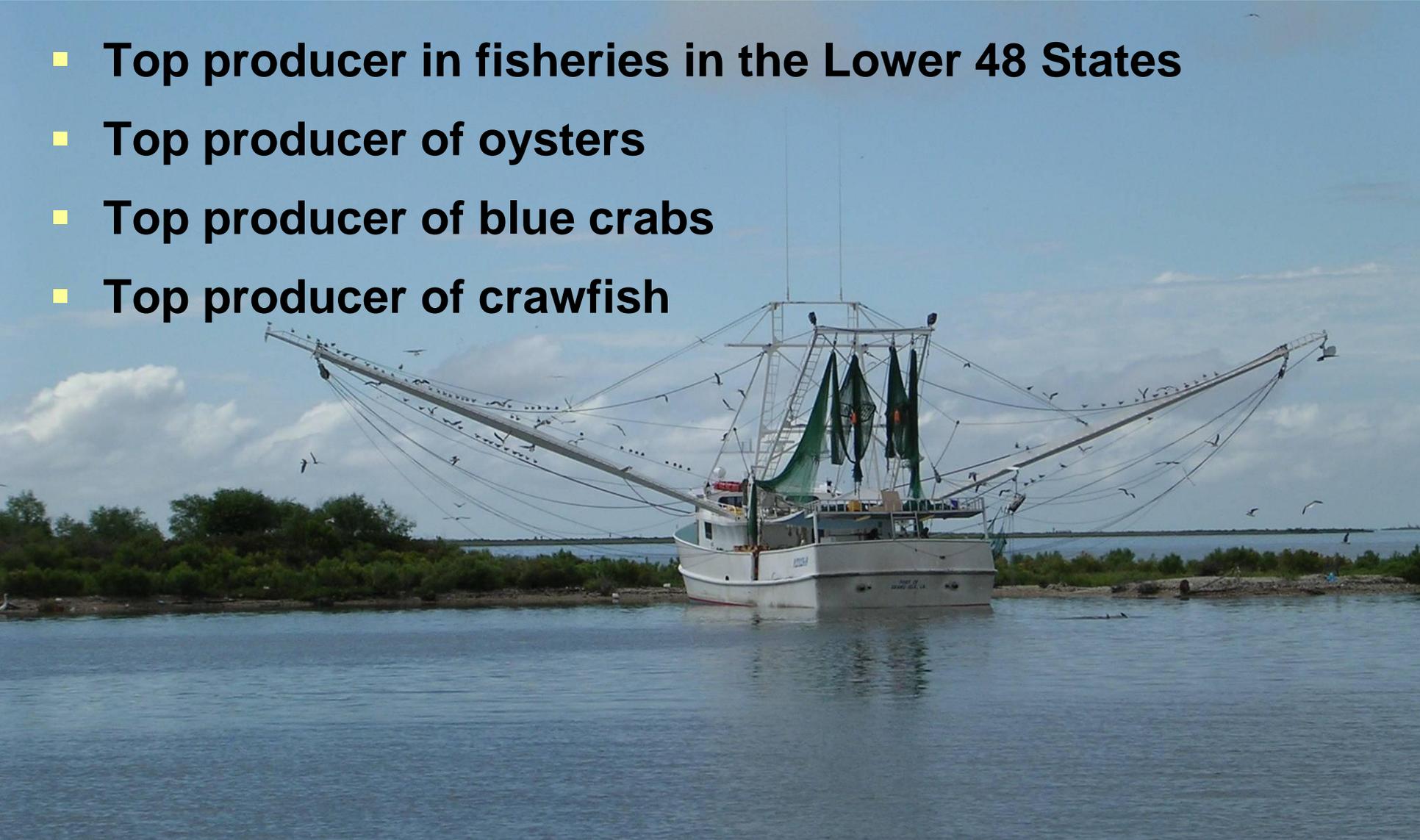


Shaw Shaw Environmental, Inc.

- “Direct impacts from waterway related employment generate \$3.8 billion in earnings and \$22 billion in output, approximately 13% of the state’s gross domestic product.”
- “One in seven jobs in the state are waterway dependent.”

NATIONAL PERSPECTIVE: FISHERIES

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



NATIONAL PERSPECTIVE: ENERGY

- **Top producer of domestic oil**
- **Top domestic reserves of oil and gas**
- **Top producer of offshore oil**
- **Top producer of offshore gas**
- **Top producer of offshore revenues for US Treasury**



NATIONAL PERSPECTIVE: ENERGY

- **Top liquefied natural gas (LNG) terminal capacity**
- **Top in foreign oil import volume**
- **Top natural gas processing capacity**
- **2nd: Producer of natural gas**
- **2nd: Oil refining capacity**

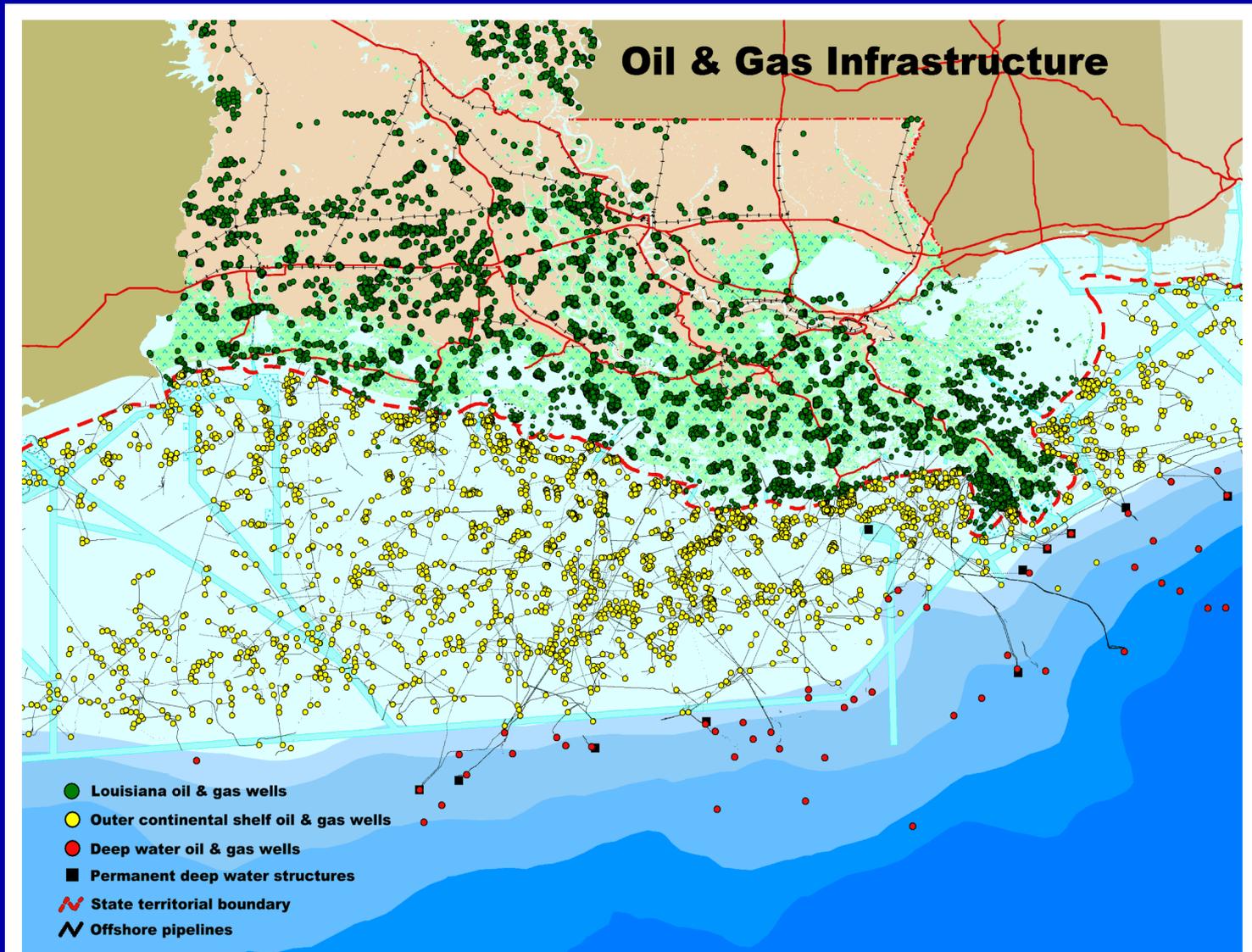


NATIONAL PERSPECTIVE: ENERGY

- Henry Hub connects 13 major pipelines (in state and interstate)
- Henry Hub– the pricing point for natural gas spot and future prices traded on the New York Mercantile Exchange (NYMEX)



NATIONAL PERSPECTIVE: ENERGY



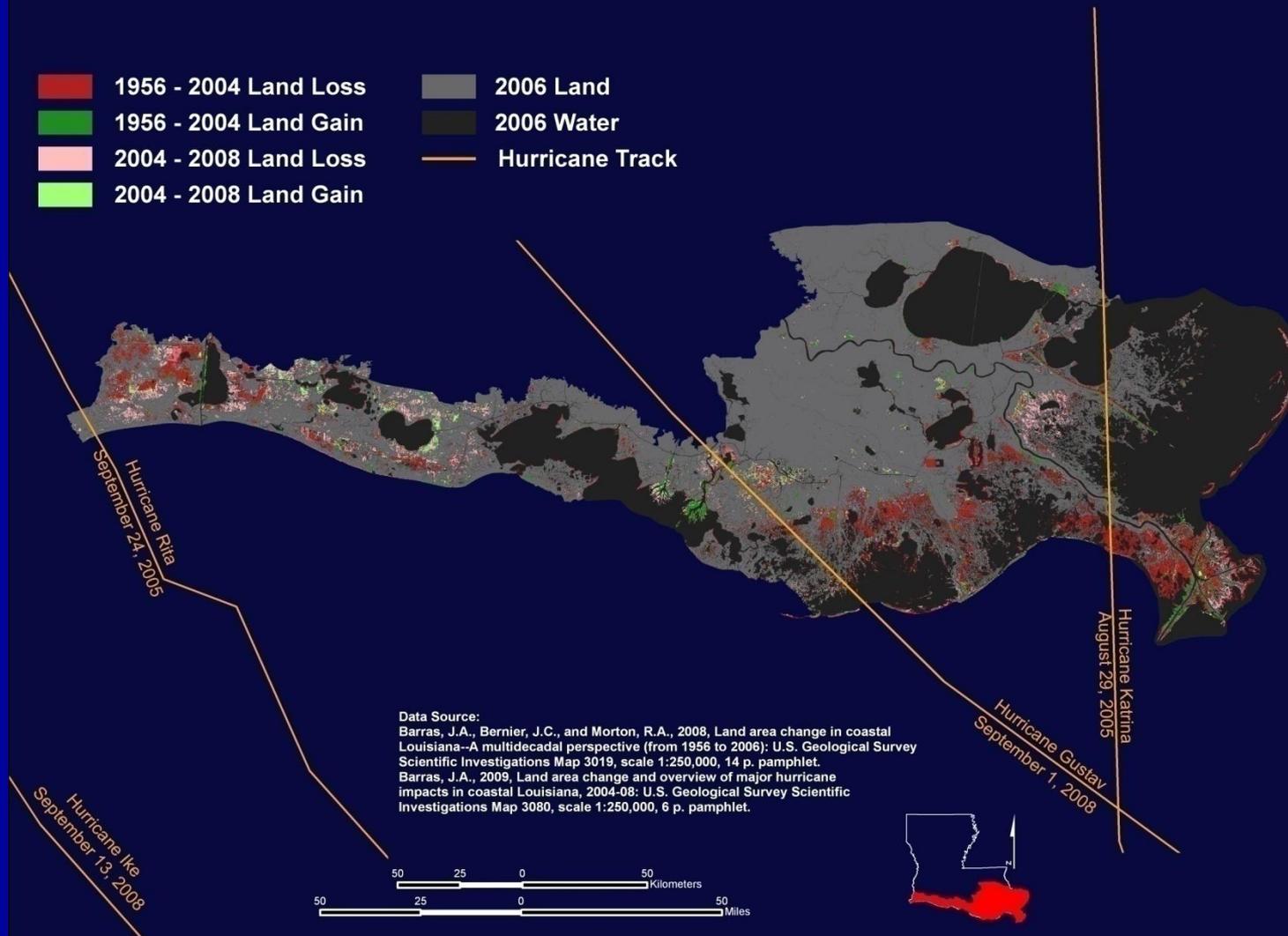
IMPORTANCE OF THE ESTUARY

- The deltaic estuary is critical habitat for countless species of mammals and fish. The coast is home to many threatened or endangered species.
- The marshes and coastal forests serve a key role in regard to storm surge reduction.
- The estuary filters water by removing sediments, nutrients, metals and many forms of pollutants.
- These wetlands serve important recreational and cultural functions.

*The Louisiana Coast is
the Lifeblood of the
State and Nation*

COASTAL LAND LOSS

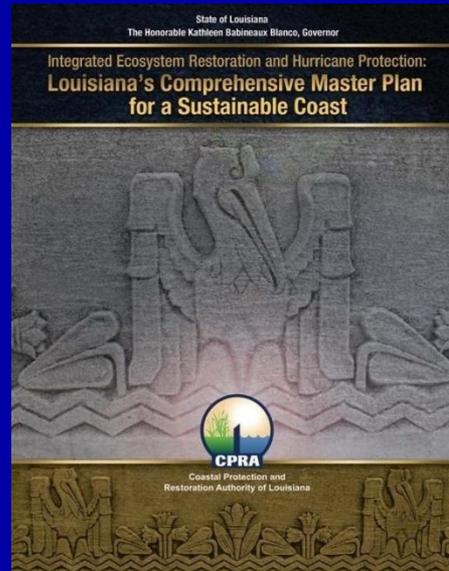
Land Area Change In Coastal Louisiana: A Multidecadal Perspective (from 1956 to 2008)



COASTAL LAND LOSS

- Louisiana has lost 2,300 sq. miles of land since the 1930s.
- Between 1990 and 2000, wetland loss was approx. 24 sq. miles per year.
- The projected land loss over the next 50 years, with current restoration efforts taken into account, is estimated to be approximately 500 sq. miles.
- Hurricanes Katrina and Rita transformed 382 sq. miles of marsh to open water in coastal Louisiana.

Responding to the Crisis



Long term commitment to coastal protection and restoration is vital to ensure the sustainability of the coast and the way of life of its residents

State Master Plan

- The 2007 State Master Plan provided a conceptual vision of a sustainable coast based on the best available science and engineering.
- It builds on past efforts and existing programs to provide this comprehensive vision.
- 2007 Master Plan has four primary objectives:
 - Reduce risk to communities,
 - Restore sustainability to coastal ecosystem,
 - Maintain a diverse array of fish and wildlife habitats, and
 - Sustain Louisiana's unique heritage and culture.

2012 State Master Plan

- The 2012 Master Plan is currently being developed
- This 2012 Master Plan will further enhance on going efforts and vision of the coast
- Specifically, the 2012 Master Plan will:
 - Define a spatially explicit vision for a sustainable coast.
 - Identify specific restoration and hurricane protection projects.
 - Define priorities for implementation to ultimately achieve the State's vision.
- This mitigation evaluation effort and future mitigation program will be tailored to compliment this more refined plan.

Responding to the Devastation and Land Loss Crisis

- Following Hurricanes Katrina and Rita, Louisiana ramped up long term commitment to coastal protection and restoration.
- 2005:
 - Coastal Protection and Restoration Authority (CPRA) is formed
- 2007:
 - State Master Plan for Sustainable Coast completed
- 2008:
 - OCM Began to Promulgate New Rules for Beneficial Use
 - Governor Jindal issues proclamation requiring all activities of State agencies and activities regulated by those agencies to be compliant with the State's Master Plan

Responding to the Devastation and Land Loss Crisis

- Following Hurricanes Katrina and Rita, Louisiana ramped up long term commitment to coastal protection and restoration.
- 2009:
 - OCM Began Coastal Zone Boundary Study
 - OCM denies consistency and challenges “status quo” of USACE dredging and disposal activities of Lower MS River Maintenance Operations
 - OCM Implemented New Beneficial Use Regulations
 - OCM Began Evaluation of Mitigation Program for Consistency with Master Plan
- 2010:
 - OCM again denies consistency and challenges “status quo” of USACE dredging and disposal activities of Lower MS River Maintenance Operations
 - OCM Completes the Evaluation of Mitigation Program and Makes Recommendations for Increased Consistency with Master Plan



Broad Goals and Objectives of the Mitigation Program:

The overall goals and objectives of OCM's Mitigation Program:

1. Avoid impacts where practicable and otherwise minimize adverse impacts identified in the permit review process.
2. Restore impacted sites as appropriate.
3. Accurately quantify anticipated unavoidable wetland ecological value losses.
4. Make available reasonable and practicable mitigation options and establish mitigation projects.
5. Achieve No Net Loss of Coastal Wetlands due to permitted activities.



Goals and Objectives Relative to Options for Mitigation:

1. Obtain appropriate, sufficient and quality compensatory mitigation to the impacted coastal ecosystem where feasible and practicable. Achieve no net loss of wetlands due to permitted activities.
2. Properly track and monitor mitigation projects, mitigation banks and in-lieu-fee projects. Monitoring and tracking should not be a burden on public resources.
3. Mitigation in coastal Louisiana must be sustainable and provide adequate and meaningful coastal ecosystem restoration.
4. Integrate and coordinate mitigation to support State's overall goal of coastal ecosystem restoration. Mitigation should be consistent with the State's Comprehensive Master Plan for a Sustainable Coast. The State must promote a sustainable coastal ecosystem by harnessing the processes of the natural system.



The State's Current Mitigation Program:

CHAPTER 7, TITLE 43 – Coastal Management Regulations

Rules for Selecting Compensatory Mitigation, §724.J: (From 1996)

The Three Mitigation Options in Current Priority Order:

1. Individual Mitigation Measure - Project on Landowner(s) Property
2. Mitigation Banks - Acquire Credits
3. In-Lieu-Fee Option - Monetary Contribution to Mitigation Trust Fund



The Current Federal Mitigation Program:

Wetland Regulations - Clean Water Act section 404
And Rivers and Harbors Act section 10

New 2008 Compensatory Mitigation for Losses to Aquatic Resources, 40 CFR Part 230; §332.3 General compensatory mitigation requirements:

The Compensatory Mitigation Options in Priority Order:

1. Mitigation Banks Credits
2. In-Lieu-Fee Programs
3. Permittee Responsible Mitigation under a Watershed Approach

These rules apply to all “wetlands” - in Montana, Wyoming & Coastal Louisiana?



Mitigation Options Required by State Law:

1. Individual Mitigation Projects
2. Mitigation Banks
3. In-Lieu Fee Contribution



Individual Mitigation Projects

- Individual Mitigation Projects present challenges with regard to sustainability and efficient resource allocation in Coastal Louisiana.
- **PRO's** Individual Projects are desirable because:
 - Projects meet the requirement for No Net Loss for Permitted Activities
 - Benefits often realized where impacts occur
- **CON's** Individual Projects are not desirable because:
 - Individual Projects have questionable Sustainability
 - Monitoring and accounting of these projects is a drain on public resources
 - In the past, projects have not been located properly to meet the goals and objectives of the State's Master Plan and Mitigation Program
 - These individual projects do not address the requirement for integrated hurricane protection and coastal ecosystem restoration.

The "Corps" Way Case Study



Lake Catherine

The State's Preference Case Study



Lake Catherine

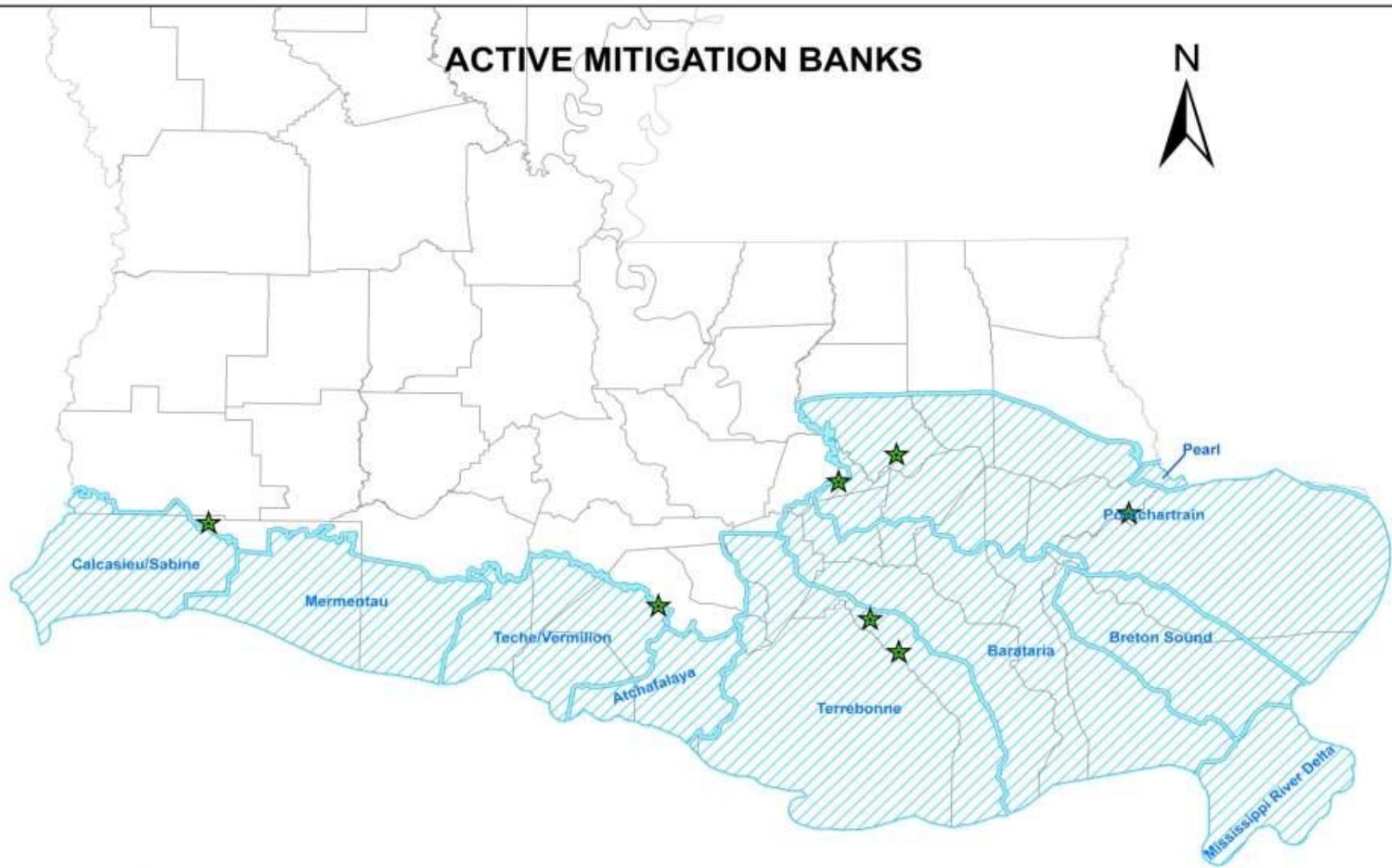


Mitigation Banks – Part of the Solution

- Mitigation Banking can be a viable option for mitigation in Coastal Louisiana
- **PRO's** Mitigation Banks are desirable because:
 - Banks meet the requirement for No Net Loss for Permitted Activities
 - Monitoring and accounting of the banks is not a drain on public resources
 - Banks have the ability to be sustainable once planted and hydrology restored
- **CON's** Mitigation Banks are not desirable because:
 - Currently banks are not being located to meet the objectives of the State's Master Plan



ACTIVE MITIGATION BANKS



Legend

- ★ ACTIVE MITIGATION BANKS*
- ▨ HYDROLOGIC BASINS OCPB
- PARISHES



Miles
1:2,000,000

September 28, 2010
LDNR-OCM
AnaY

* Mitigation Banks Authorized for Use by LDNR-OCM

MITIGATION BANK PURCHASES DUE TO WETLAND IMPACT PROJECTS FY 05-09



Legend

-  ACTIVE MITIGATION BANKS*
-  INACTIVE MITIGATION BANKS*
-  WETLAND IMPACT PROJECTS
-  HYDROLOGIC BASINS OCPB
-  PARISHES



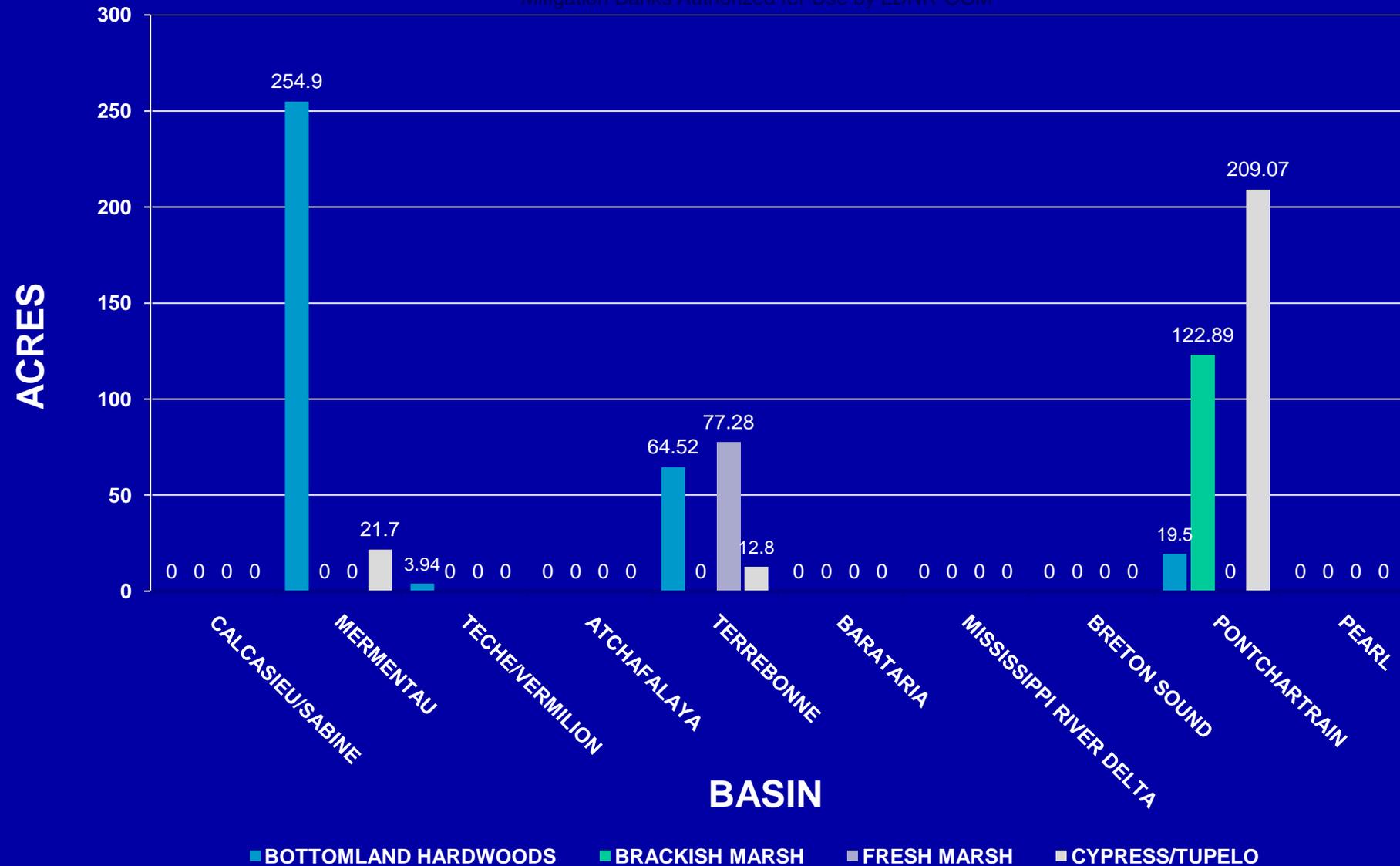
Miles
1:2,000,000

September 28, 2010
LDNR-OCM
AnaY

* Mitigation Banks Authorized for Use by LDNR-OCM

ACTIVE MITIGATION BANKS: AVAILABLE HABITAT ACREAGES BY HYDROLOGIC BASIN as of September 30, 2010

Mitigation Banks Authorized for Use by LDNR-OCM



Mitigation Banks –The Cost of Mitigation in Coastal Area:



PRICE PER ACRE (BASED ON EQUAL MITIGATION POTENTIALS)

- Bottomland Hardwoods \$ 17,582 to \$ 53,774/acre
- Fresh Swamp \$ 21,951 to \$ 70,000/acre
- Fresh/Intermediate Marsh \$ 45,000/acre
- Brackish/Salt Marsh \$ 80,000/acre



Other Mitigation Recent Mitigation Costs in the Coastal Area:

Ward 7 Levee

- Construction Cost: \$ 12.5 Million
- Mitigation Cost: \$ 5.7 Million **31%**

Reach H Levee

- Construction Cost: \$ 17 Million
- Mitigation Cost: \$ 30 Million **64%**

Reach F Levee

- Construction Cost: \$ 25 Million
- Mitigation Cost: \$ 9 Million **26%**

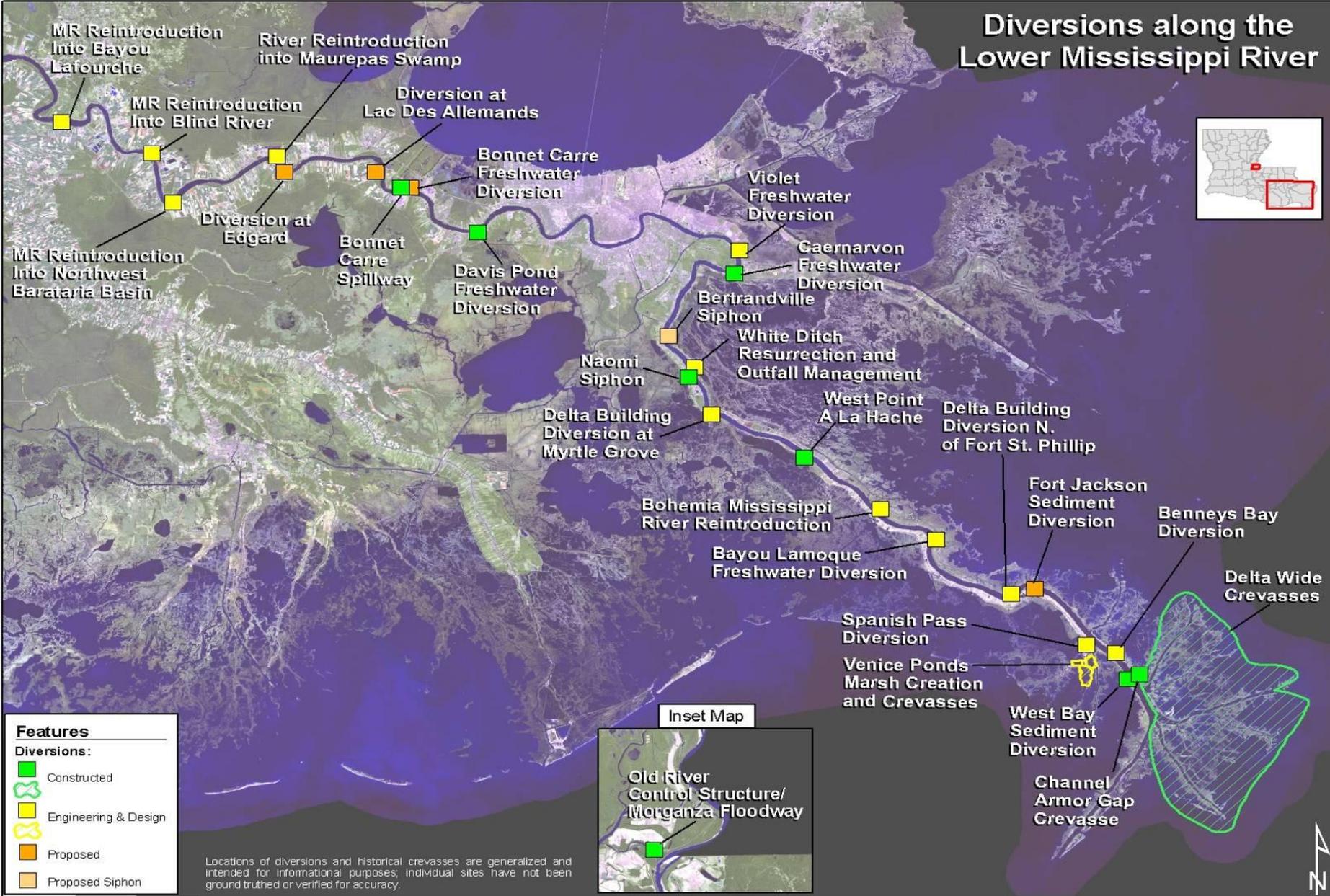


Mitigation Banks –The Cost of Mitigation in Coastal Area

Factors that affect the cost of mitigation:

1. Long-term maintenance obligations
2. Monitoring obligations required of the mitigation bank
3. Reporting requirements associated with the mitigation bank
4. Legal and conservation easement costs
5. Property acquisition costs and profit margin
6. The time and costs associated with Interagency Review Team (IRT) review:
 - Limited pre-proposal guidance, uncertain outcome and lack of predictability
 - Constantly changing requirements, lack of promulgated rules for some facets
 - Uncertainty and lack of predictability in the financial assessment to determine credits generated

Diversions along the Lower Mississippi River



- Features**
- Diversions:**
- Constructed
 - Engineering & Design
 - Proposed
 - Proposed Siphon

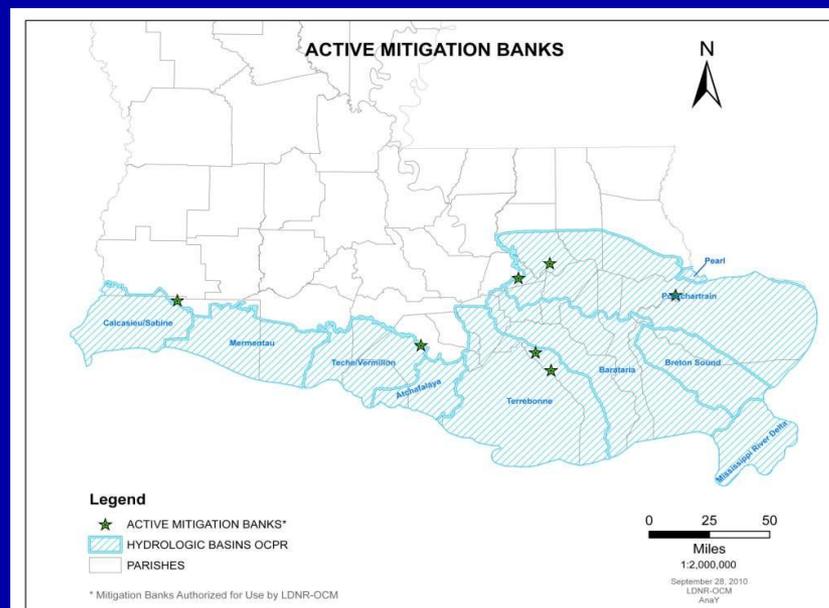
Locations of diversions and historical crevasses are generalized and intended for informational purposes; individual sites have not been ground truthed or verified for accuracy.





Lack of Mitigation Banks in Coastal Area

- Only One (1) Brackish/Salt Marsh Mitigation Bank
- Only One (1) Fresh/Intermediate Marsh Mitigation Bank
- There are No Marsh Mitigation Banks west of the Atchafalaya River
- There are limited Swamp and Bottomland Hardwood Mitigation Banks in most coastal basins and lack of competition.





How Impacts have been Mitigated:

Type of Mitigation:	% Occurrence:	% Acres:
1. Individual Projects	22%	50%
2. Mitigation Banks	40%	36%
3. In-Lieu-Fee Contributions	38%	14%

Reasons why we need to reconsider the current arbitrary prioritization hierarchy for mitigation:

- The current hierarchy hinders important public works projects that protect the coast and our citizens.
- The current hierarchy hinders the coastal economy that is the life blood of Louisiana.
- We do not have resources to waste, we must apply these resources to work in concert with the State's Master Plan to protect our coast, our citizens and our economy.



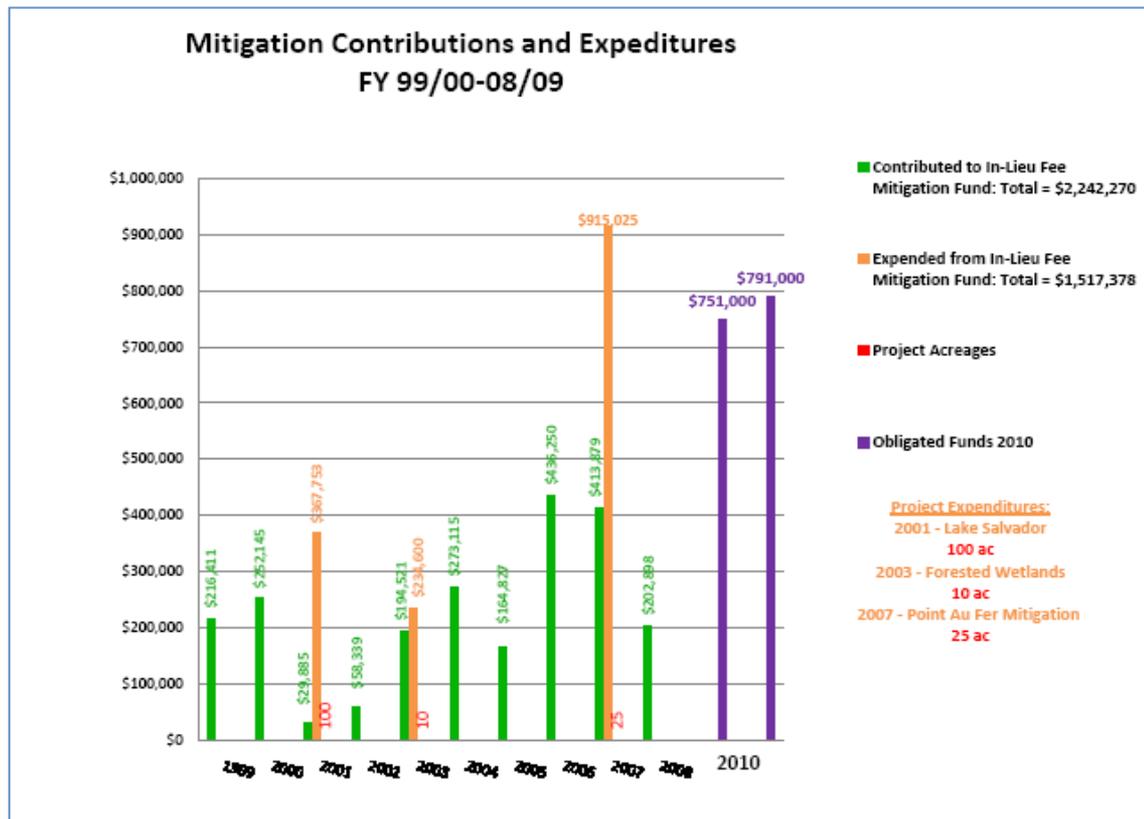
In-Lieu-Fee Program Mitigation – Part of the Solution

- In-Lieu-Fee is an option for mitigation in Coastal Louisiana
- **PRO's** In-Lieu-Fee Option is desirable because:
 - Projects meet the requirement for No Net Loss for Permitted Activities
 - Monitoring and accounting of Projects is not a drain on public resources
 - Projects have proven to be sustainable once planted and hydrology restored
 - Creates more opportunities for mitigation in high risk areas.
 - AND projects can be located properly to meet the objective of the State's Master Plan
- **CON's** None

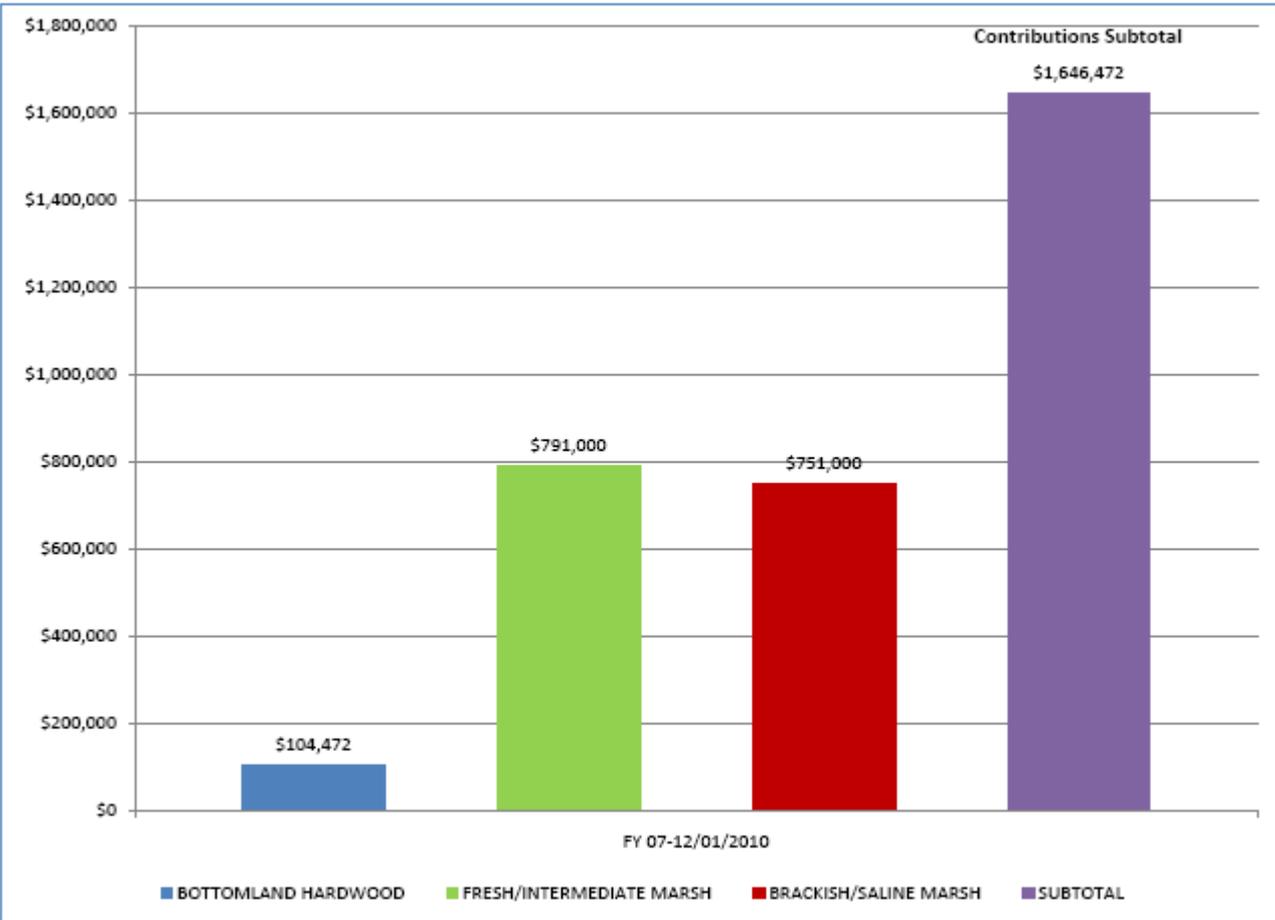




Mitigation Contributions and Expenditures (FY 99/00-08/09)



LDNR-OCM MITIGATION IN-LIEU-FEE CONTRIBUTIONS BY IMPACTED HABITAT



Images of Point Au Fer Mitigation Fund Project (2007)

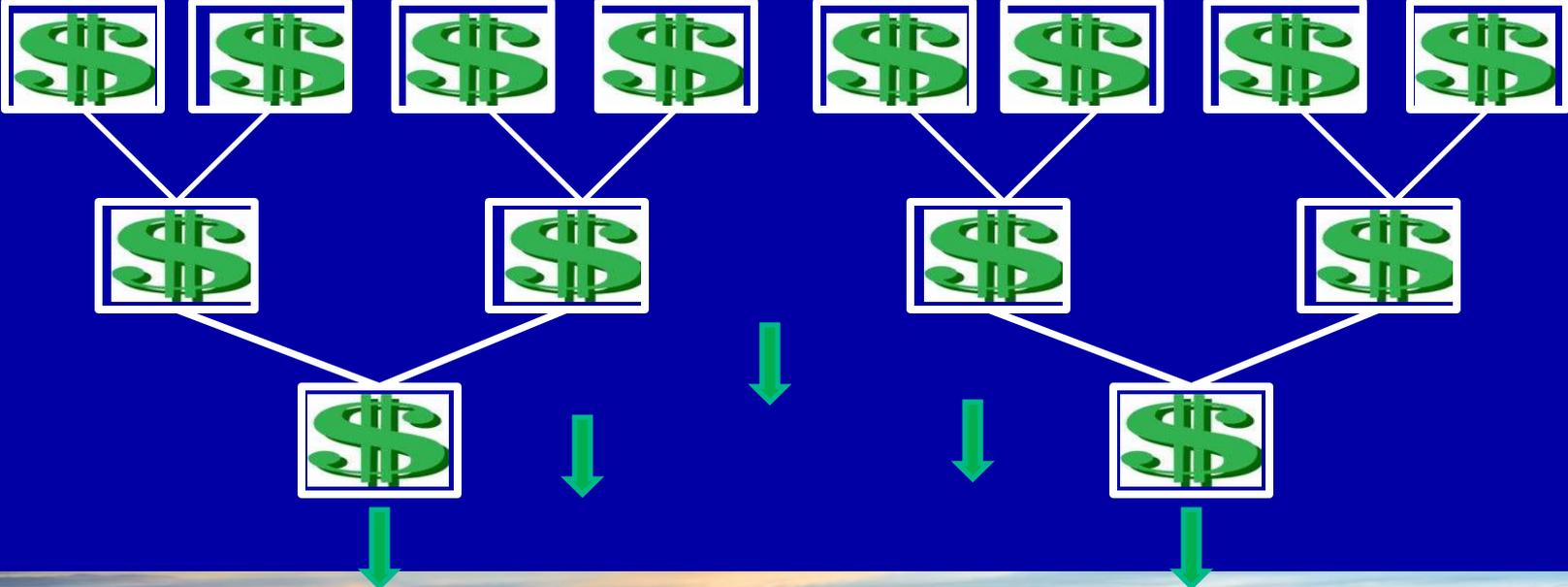


12/21/2010

Images of Lake Salvador Shoreline Protection (2001)



In-Lieu Fee Contributions



Summary-

Importance of the Louisiana Coast:



- Coastal Population: over 2 Million Residents
- Coastal Fisheries: Top Fisheries Producer in Lower 48, Over \$3 Billion Annually
- Coastal Energy: Top Producer of Domestic Oil, Over \$70 Billion Annually
- Coastal Ports: Largest Port Complex in the World, \$35 Billion Annually
- Louisiana's Unique Heritage and Culture – No \$\$\$



Summary- *Coast in Crisis:*



- The Hurricanes of 2005 changed the “Status-Quo”
- Louisiana has lost 2,300 mi.² of land loss since the 1930’s
- Between 1990 and 2000, wetland loss was approx. 24 mi.² per year
- Hurricanes Katrina and Rita transformed 382 mi.² of marsh to open water in Coastal Louisiana
- The Master Plan – the State makes long term commitment to integrated coastal protection and coastal ecosystem restoration.



Summary-

Results of the Evaluation:



- There are not enough options for mitigation available.
- Individual Mitigation Projects as currently implemented are not desirable, they are a drain on resources, are not sustainable and do not contribute to integrated coastal protection and ecosystem restoration
- Mitigation Banks are part of the solution but the banks need to be influenced to locate where they are more consistent with the goals and objectives of the State's Master Plan
- There is a strong need for a more robust and flexible in-lieu-fee mitigation option.

Summary- *Recommendations:*



- Challenge the 'status quo' of existing arbitrary Federal regulatory priorities for mitigating in “coastal wetlands”.
- Redirect the State’s efforts and thereby enhance sustainability and Master Plan objectives.
- No net loss is important, but its not enough in coastal Louisiana. This is not Wyoming, Montana or Nebraska.
- Create more flexible options for mitigation and restructure the current priorities regarding mitigation options.



Summary- *Recommendations:*



- Allow the use of the Individual Mitigation Projects only when proven to be sustainable and contribute to integrated coastal protection and ecosystem restoration.
- Work with the Federal Agencies and the Mitigation Banking Community to locate where they are more consistent with the goals and objectives of the State's Master Plan.
- Implement the use of a robust State operated in-lieu-fee program to increase sustainability and enhance Master Plan implementation, including comprehensive coastal protection and ecosystem restoration.
- Make use of the in-lieu-fee mitigation option to add flexibility and to provide options for critical public works and economic development projects.

Summary-

Actions to Implement Change:



- Legislative, Regulatory and Policy modifications to the current mitigation program are necessary to enhance the State's Mitigation Program.
- The U.S. Army Corps of Engineers and other Federal Regulatory Agencies must acknowledge that Rules for Mitigation in Wyoming, Montana and Nebraska are not appropriate in coastal Louisiana and make necessary adjustments that address the dynamics of our fragile coast.
- Federal Legislative and Regulatory change may be required.
- No resources to waste, mitigation must be part of the overall solution to address the coastal crisis.