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***Development of a Statewide  
Nutrient Management Strategy  
for Louisiana***

Presentation to:

Louisiana State Technical Committee  
United States Department of Agriculture

November 28, 2012



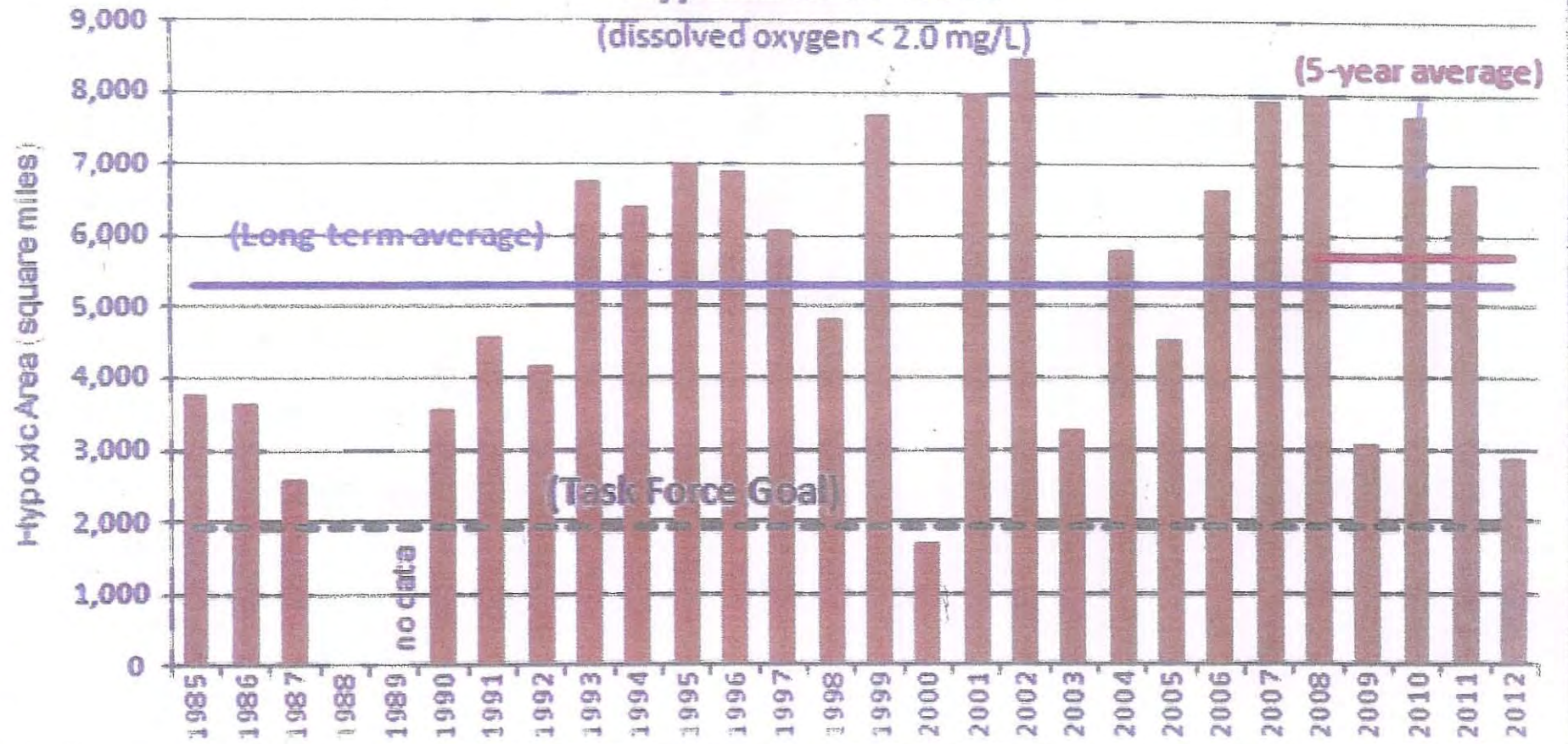
# Mississippi/Atchafalaya River Basin MARB



200, 811, 946, 1, 967

200, 811, 946, 1, 967

## Area of Northern Gulf of Mexico Mid-summer Bottom Water Hypoxia 1985-2012

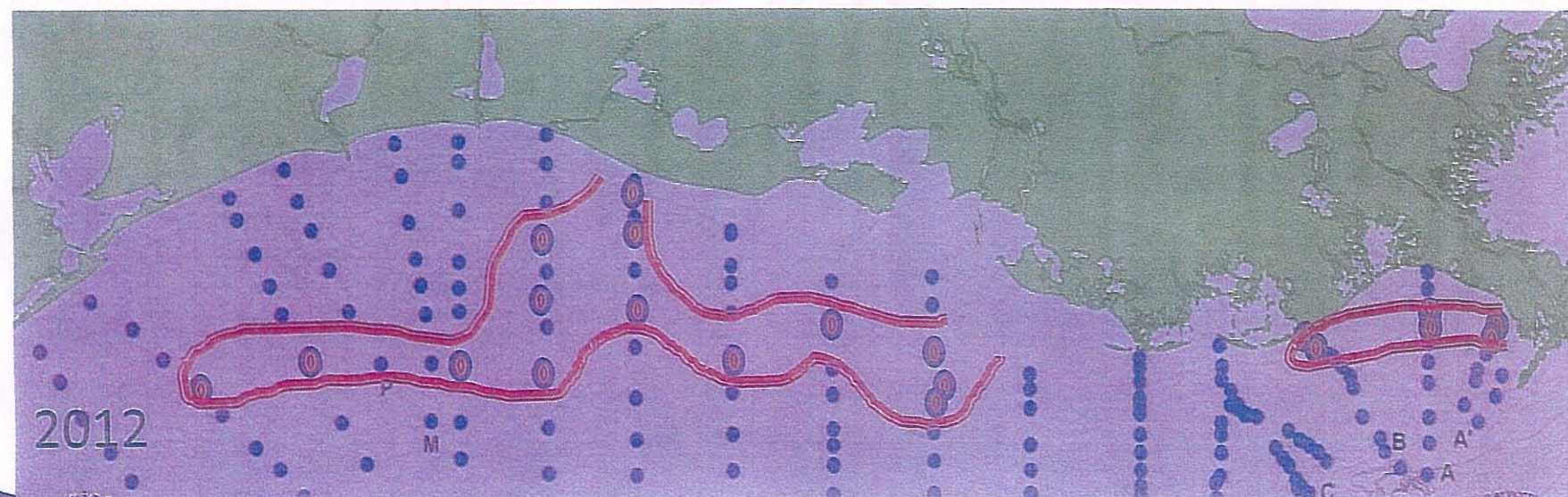
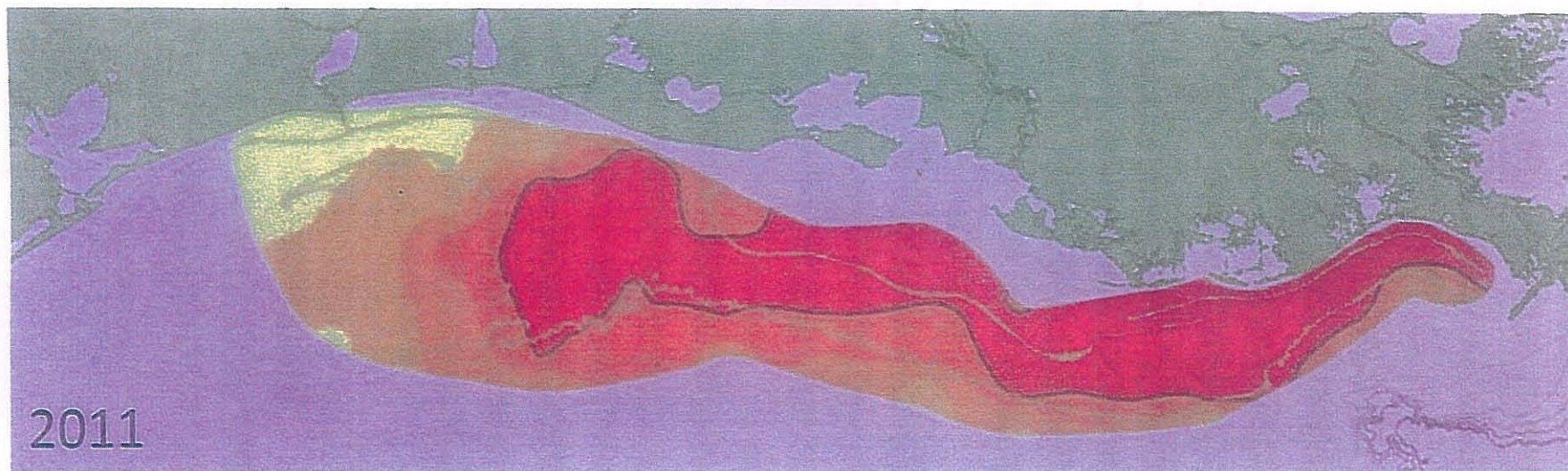


From NOAA/ Nancy Rabalais (LUMCON)

July 2012: 2,889 sq mi

$$5,000 \text{ km}^2 = 1,930 \text{ mi}^2$$

# Extent of Bottom-Water Hypoxia ( $DO < 2 \text{ mg L}^{-1}$ ) late July 2011 and late July 2012



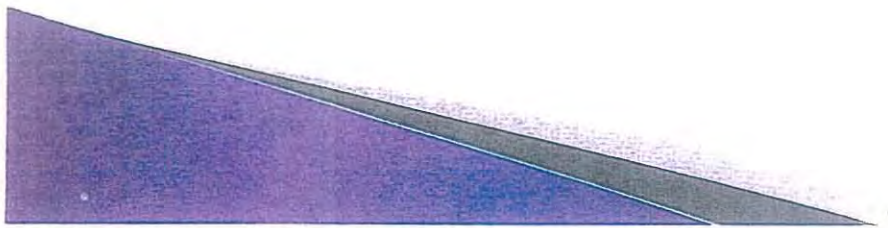
Data source: N.N. Rabalais, Louisiana Universities Marine Consortium, and R.E. Turner, Louisiana State University; funding from NOAA, CSCOR, NGOMEX09



## Hypoxic Zone Areal Extent (2011 vs. 2012)

Month	<sup>1</sup> Hypoxic Zone Areal Extent (square miles)	
	2011	2012
June	3,256	294
July	6,765	2,889
August	3,400	1,580

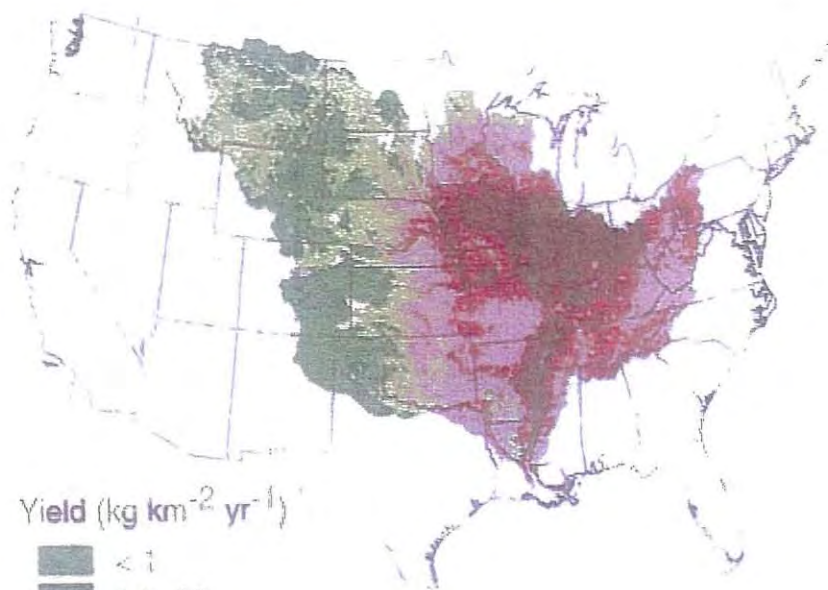
<sup>1</sup>From NOAA-sponsored surveys led by Steven DiMarco (Texas A&M Univ) in June and August, and Nancy Rabalais (LUMCON) in July



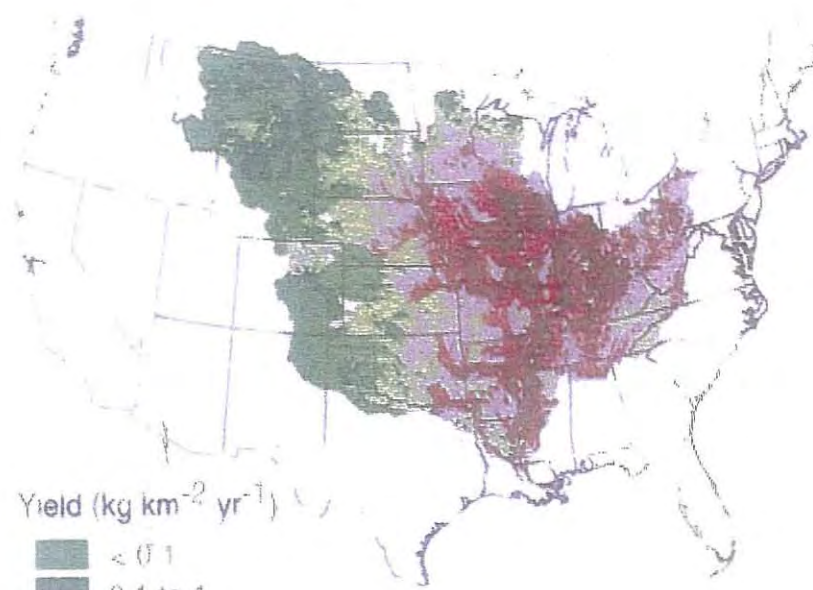
# Nutrient Delivery to the Gulf of Mexico

(A) Total Nitrogen

(B) Total Phosphorus



Yield ( $\text{kg km}^{-2} \text{ yr}^{-1}$ )



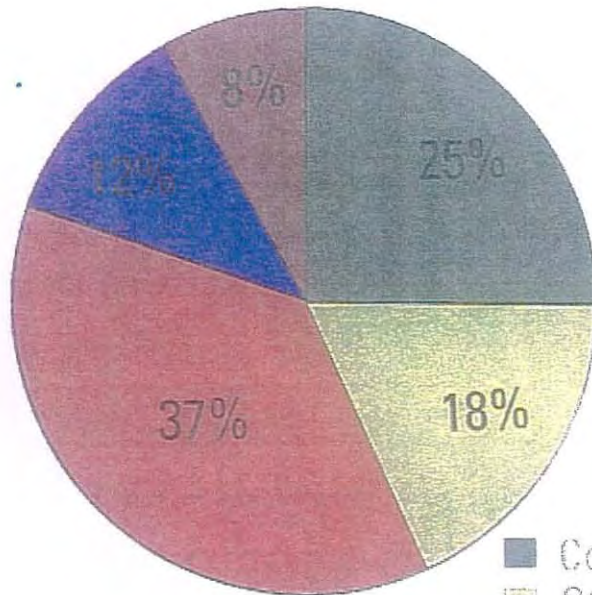
Yield ( $\text{kg km}^{-2} \text{ yr}^{-1}$ )



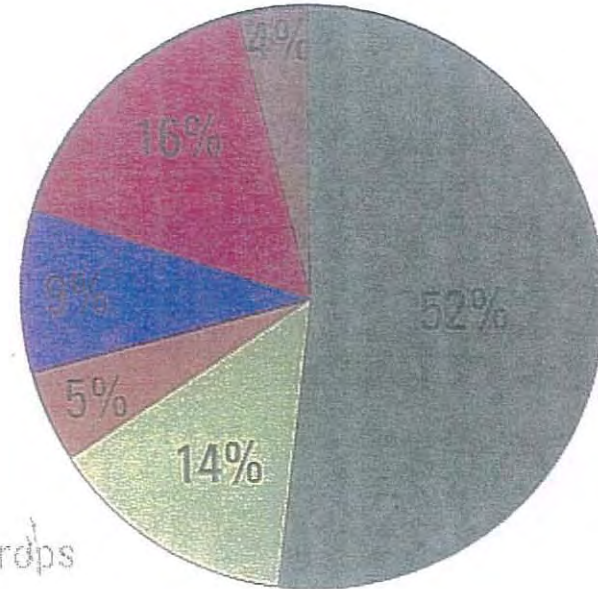
Alexander, et al, *Environ. Sci. Tech.*, 2008

## Sources of nutrients delivered to the Gulf of Mexico

**PHOSPHORUS**



**NITROGEN**



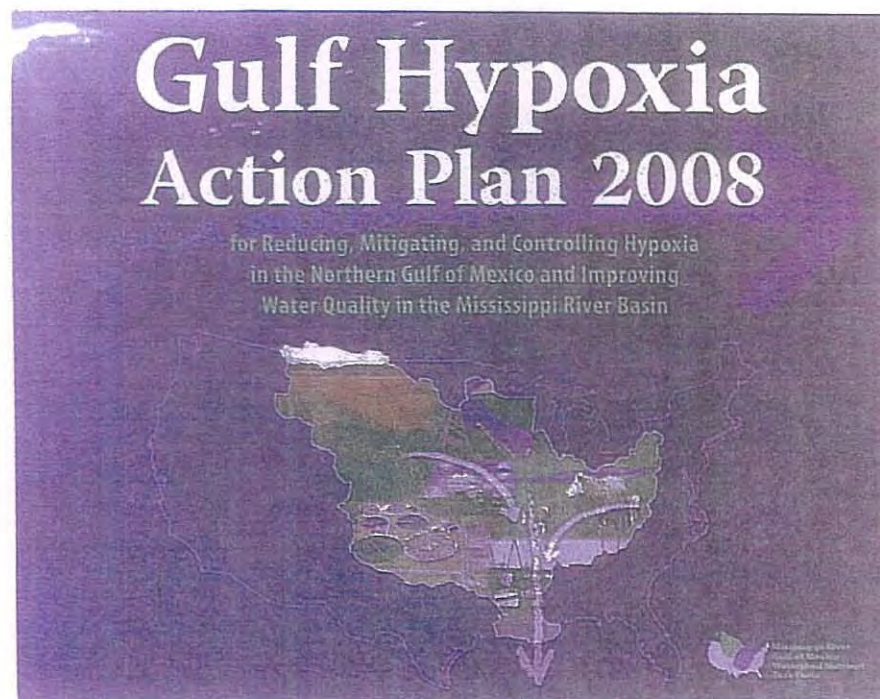
### Sources

- Corn and soybean crops
- Other crops
- Pasture and range
- Urban and population-related sources
- Atmospheric deposition
- Natural land

U.S. Department of the Interior  
U.S. Geological Survey

# Gulf Hypoxia Action Plan 2008

- ▶ Final product of 4-year reassessment of the 2001 Action Plan
  - 4 science symposia (2005–2006)
  - EPA SAB Hypoxia Advisory Panel Report, December 2007
  - 6 Task Force Meetings
  - Over 750 public comments



11 Actions were identified



# Next Steps: Getting Results

## Actions 1-3

- #1: Develop and promote state-level N & P reduction strategies
- #2: Develop and promote basin-wide (federal) N & P reduction strategies
- #3: Examine and enhance existing programs that target N & P reductions to feed into strategies



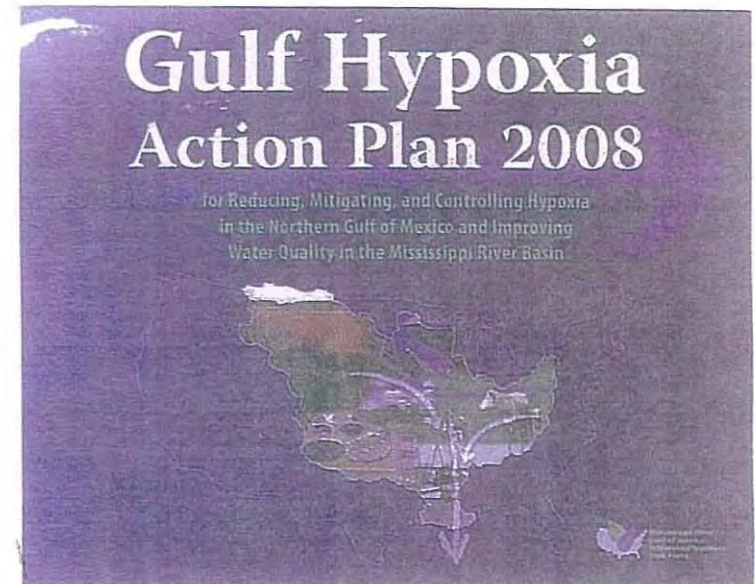
# Actions 4-11

- ▶ Actions to Advance the Science, Track Progress, and Raise Awareness
  - Build on the adaptive management approach *“continual feedback between the interpretation of new information and improved management actions” (2001 Action Plan)*
  - Emphasize tracking progress, filling the still existing gaps in the science, and engaging our stakeholders



# Guiding Principles

- ▶ Encourage voluntary, incentive-based, practical, and cost-effective actions
- ▶ Leverage existing programs and outputs
- ▶ Follow adaptive management
- ▶ Effective education/outreach
- ▶ Target existing/seek additional funding
- ▶ Identify opportunities for innovative, market-based solutions



# Louisiana's Nutrient Management Strategy

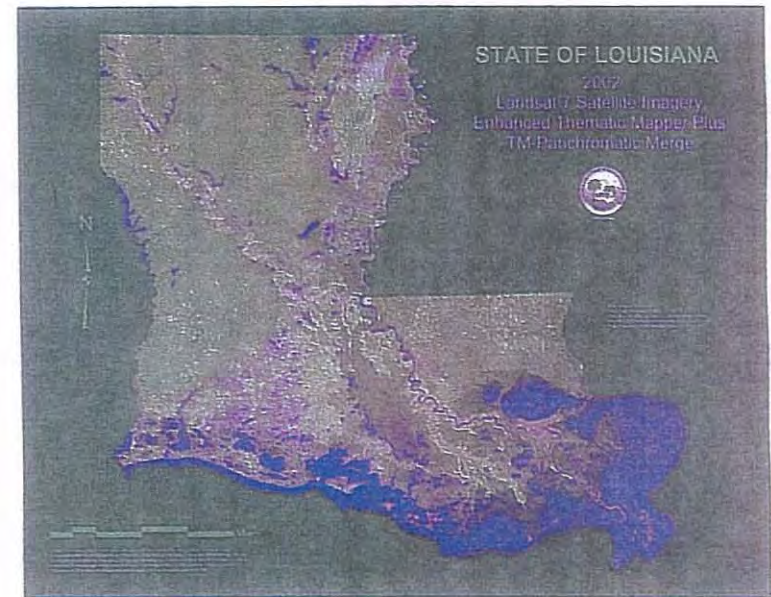


- Formed a core team of:
  - CPRA, LDAF, LDEQ, and LDNR



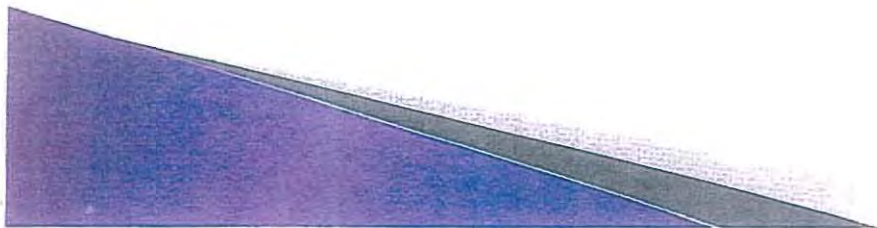
- Developed a Louisiana framework based guidance from

- Task Force
- Gulf of Mexico Alliance (GOMA)
- EPA Framework Elements



# Louisiana Statewide Nutrient Management Strategy

- ▶ Overall goal:
  - Manage nutrients impacting Louisiana water bodies
  - That ultimately impacts the Gulf of Mexico
  
- ▶ Interagency Team
  - Existing Programs
  - Strengthening Partnerships
  - Building Partnerships





## River Diversions

- Intercepting nutrients prior to reaching the Gulf
- Can quantify nutrient retention but need to resolve scientific/technical uncertainties relating to marsh productivity



## Master Farmer Program

- Scientifically based BMPs implemented to target reduction of pollutants into air and waters of the state
- Firmly rooted in state law, is backed by sound science and is a critical component of LA's overall water resource management programs



## Nonpoint Source (NPS) Program

- Best Management Practices (BMPs)
- Watershed Implementation Plans (WIPs)



## Parish-level Local Coastal Management Program

- Technical assistance, guidance, and management to parishes in the development, approval, and implementation of local coastal programs
- 10 coastal parishes active in the program

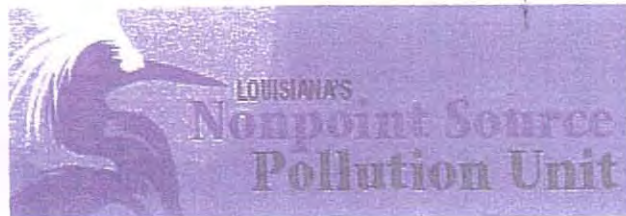
# Programs and Partnerships



Mississippi River  
Gulf of Mexico  
Watershed Nutrient  
Task Force



United States Department of Agriculture  
Natural Resources Conservation Service





# Louisiana's Nutrient Management Strategy

## Stakeholder Engagement:

To identify, engage, and involve stakeholders within the watershed community.

- *Identify stakeholders with interest in the Louisiana Statewide Nutrient Management Strategy*
- *Engage stakeholders and determine stakeholder interests and values*
- *Compile stakeholder interests and values*
- *Identify stakeholder interest within appropriate scale (statewide, regional, watershed)*
- *Identify areas where stakeholder involvement may need to be enhanced*
- *Prepare summary of findings for use in subsequent components of the strategy*

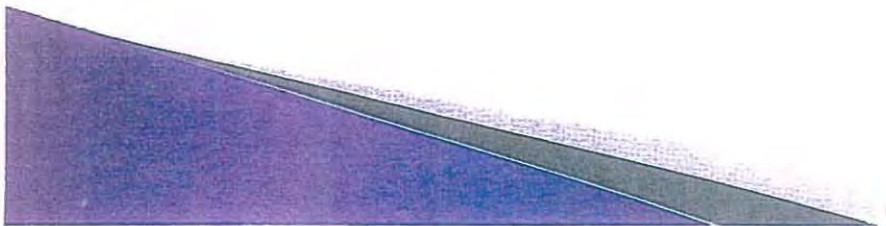
1	• Stakeholder Engagement
2	• Decision Support Tools
3	• Regulations, Policies, and Programs
4	• Management Practices and Restoration Activities
5	• Status and Trends
6	• Watershed Characterization, Source Identification, and Prioritization
7	• Incentives, Funding, and Economic Impact Analysis
8	• Targets and Goals
9	• Monitoring
10	• Reporting



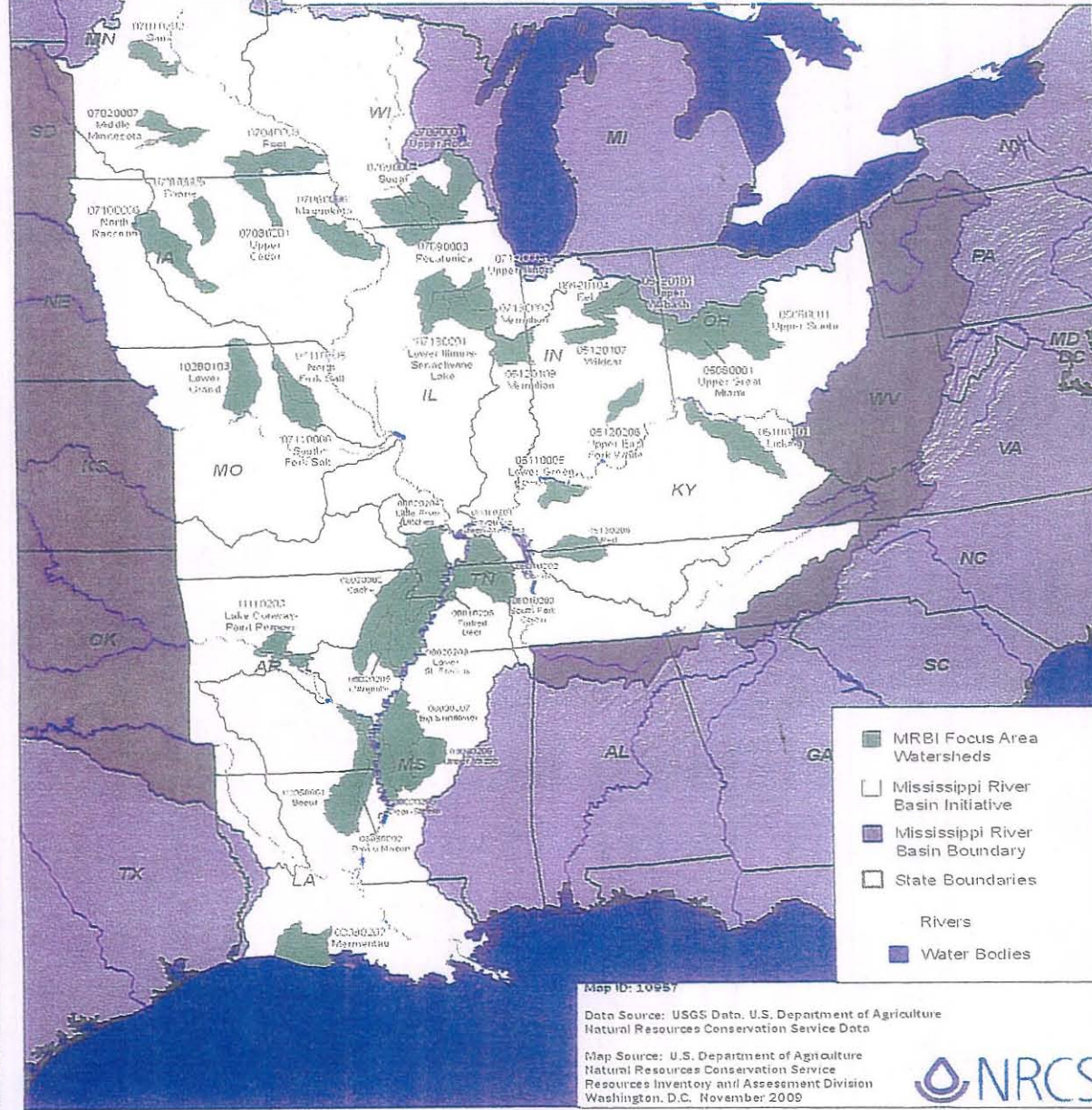
# Nonpoint Source Projects

Coordination Between USDA, USEPA and States  
on Targeted Nutrient Reduction Projects:

- ▶ Mississippi River Basin Initiative (MRBI)
- ▶ Gulf of Mexico Initiative (GOMi)
- ▶ National Water Quality Initiative (NWQI)

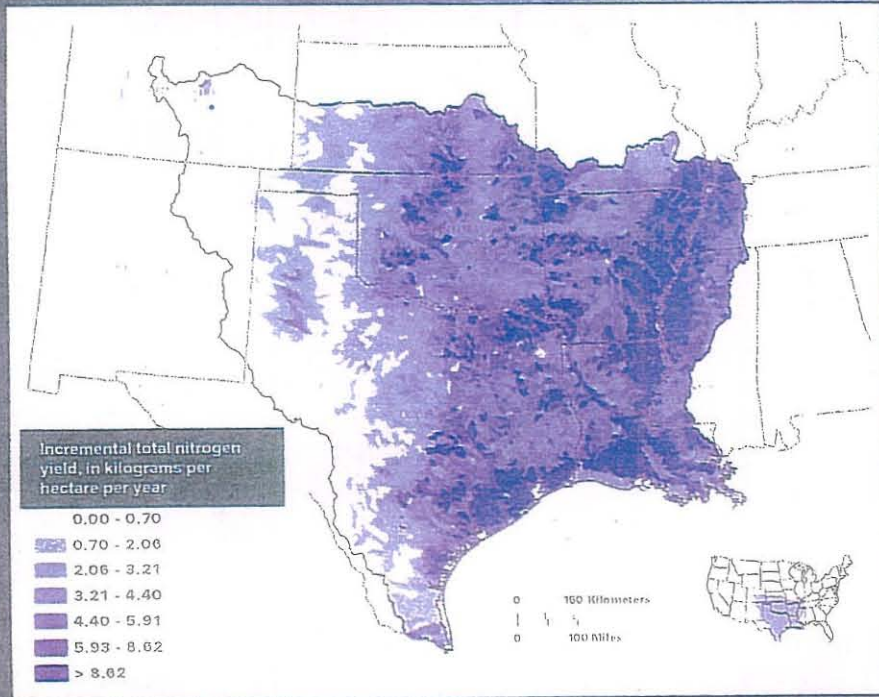


# Mississippi River Basin Initiative - Focus Area Watersheds

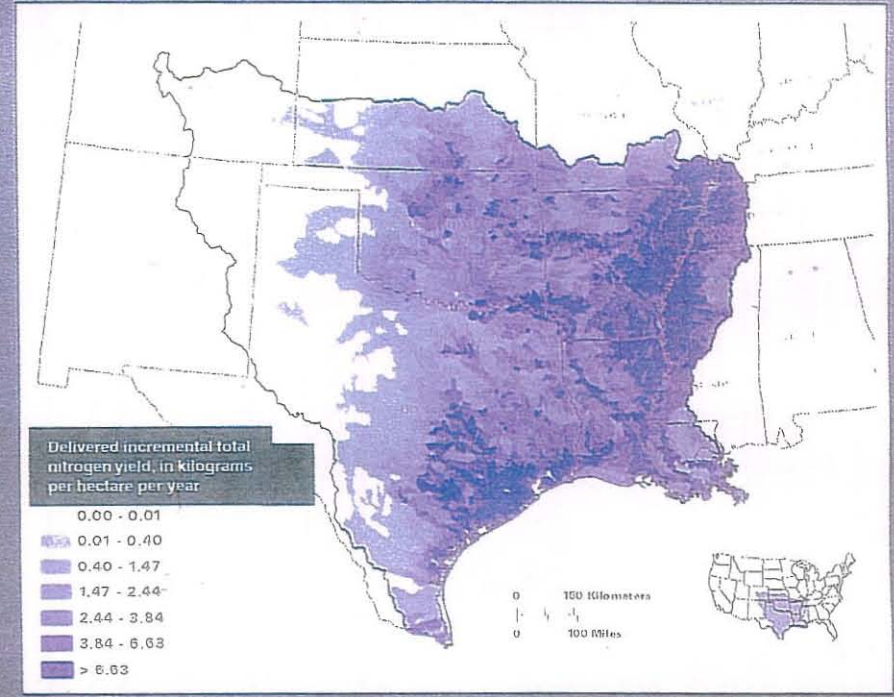


# Total Nitrogen Yield Results

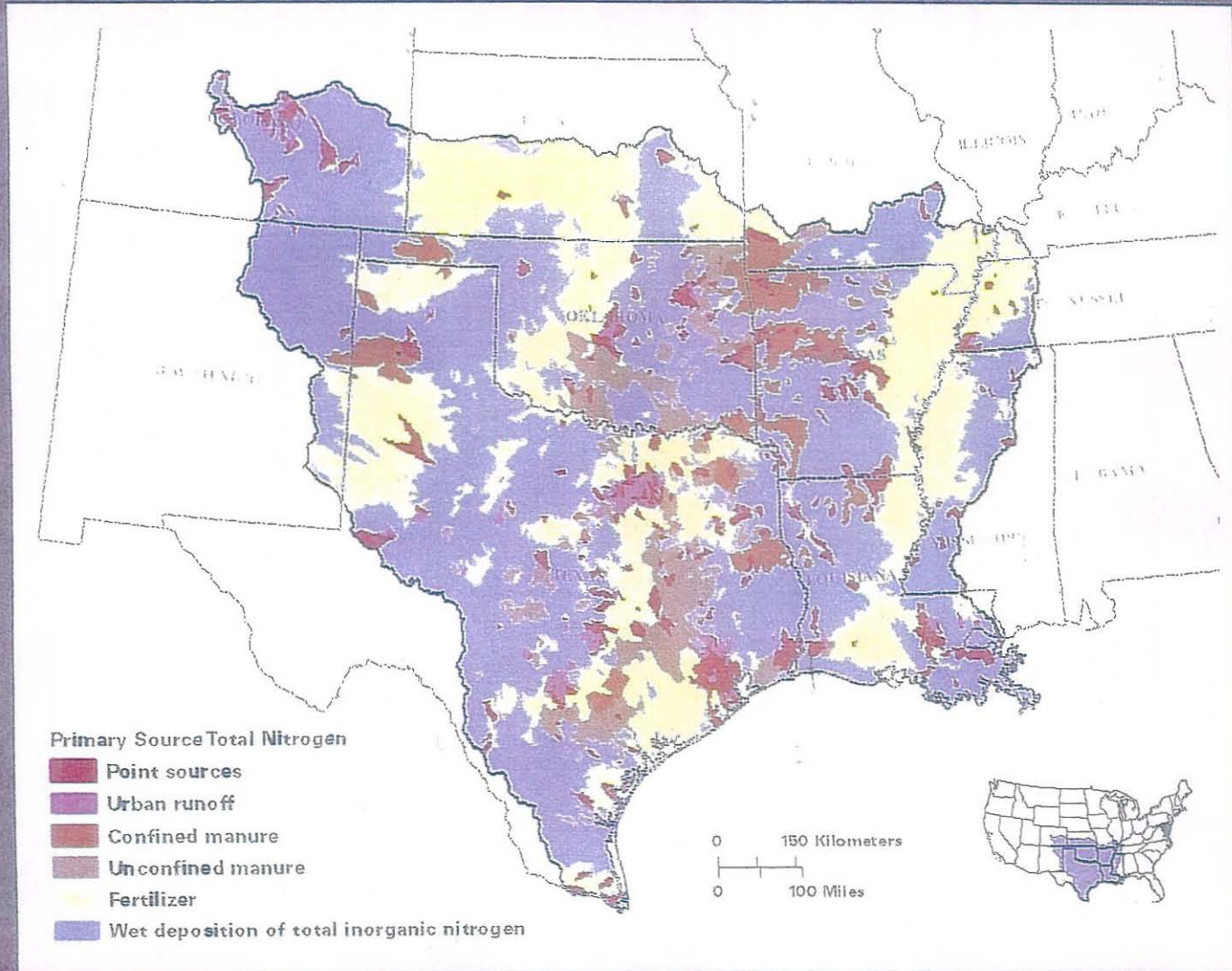
## Delivered to local streams



## Delivered to the Gulf of Mexico

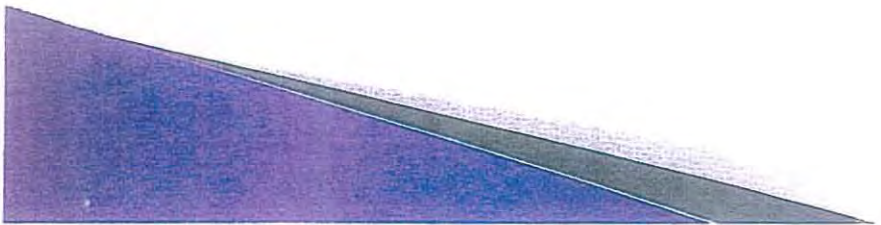


# Primary Sources of Nitrogen



# GOMi and NWQI

- ▶ Grand Bayou/Little Grand Bayou in Terrebonne Basin (sugarcane)
- ▶ Big Creek and East Fork of Big Creek in Lake Pontchartrain Basin (dairies and pasture)
- ▶ Indian Bayou in Queue de Tortue (pasture, rice and soybeans)
- ▶ Lake Louis/Bayou Louis in Ouachita River Basin (cultivated crops)



# 18-month Development Timeline

Aug 2012

Jan 2013

Jun 2013

Dec 2013



**1 Stakeholder Engagement**

**2 Decision Support Tools**

**3 Regulations, Policies  
& Programs**

**4 Management Practices and Restoration Activities**

**5 Status and Trends**

**6 Watershed Characterization  
& Prioritization**

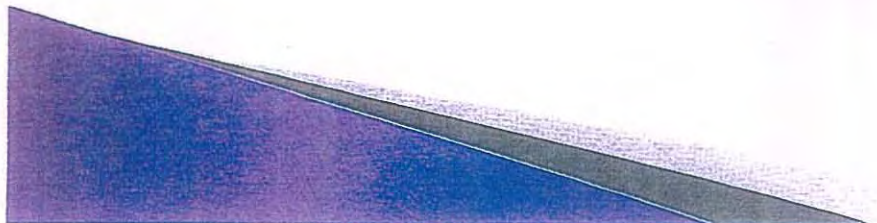
**7 Incentives, Funding &  
Economic Impact**

**8 Targets and Goals**

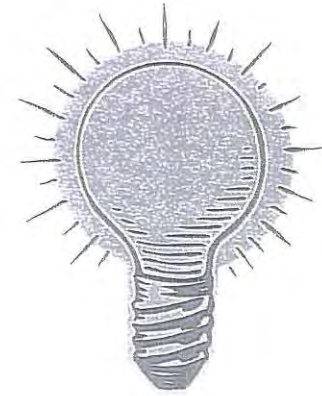
**9 Monitoring**

**10 Reporting**

**Final Report**



# What are your Ideas?



- ▶ Stakeholder Engagement
- ▶ Coming Winter 2012–13/Spring 2013
- ▶ Forum for communicating your ideas on a Statewide Nutrient Management Strategy
  - How are you **currently** managing nutrients?
  - How do you plan to manage nutrients in the **future**?
  - What are **specific practices** that you are implementing?
  - What are **barriers** to implementing?
  - What **can be done** to help implement?
  - What nutrient management **programs** do you know of?

# Louisiana Statewide Nutrient Management Strategy








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