US EPA ARCHIVE DOCUMENT

Linkages Between Social, Political and Economic Activities and Coastal Louisiana's Miss. River Delta Ecosystems:

Pollution and Nutrient Overloads

Shirley Laska, University of New Orleans
Darryl Malek-Wiley

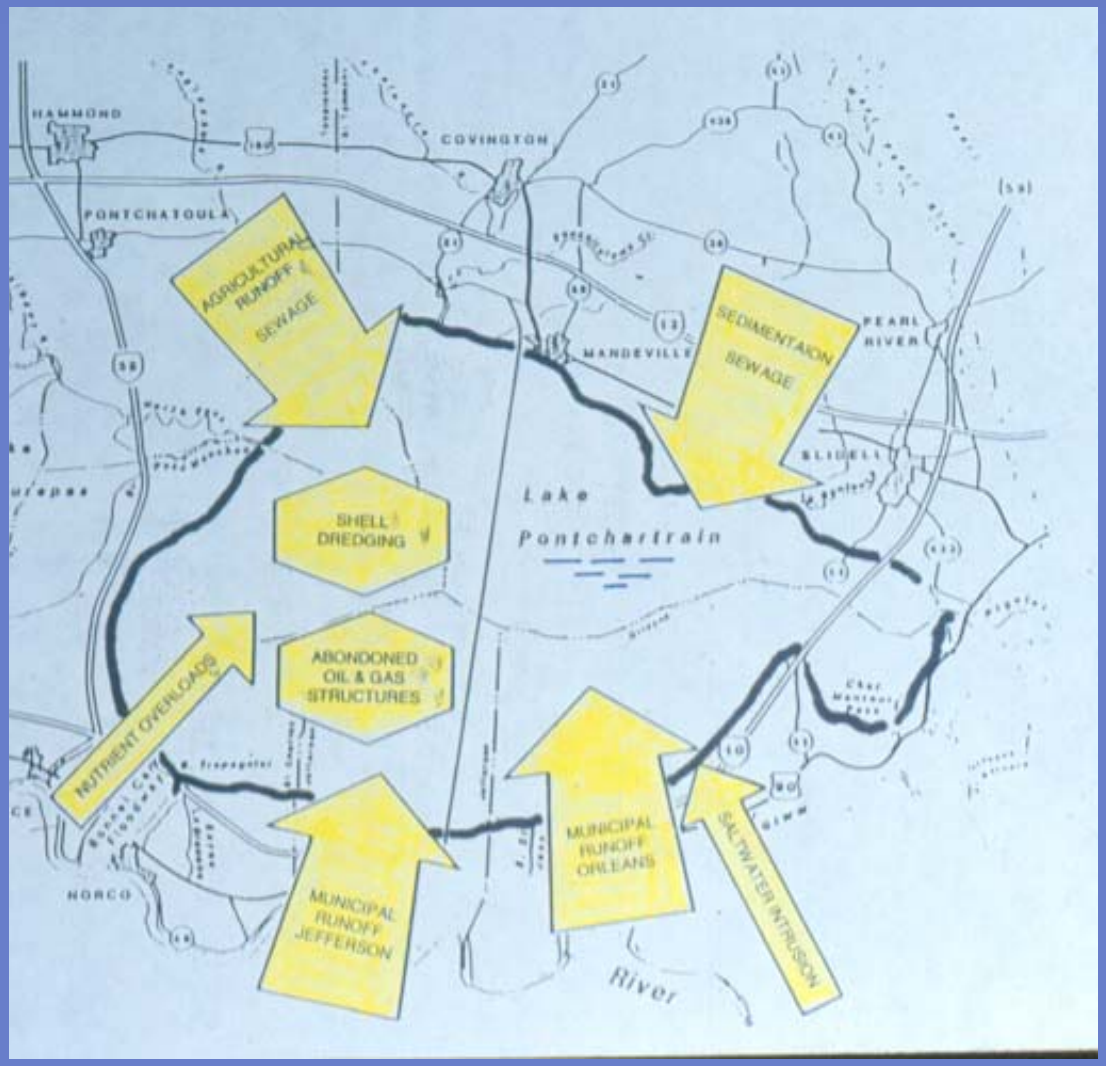
Outline

- Case #1 Local Sources/Impacts/ Interventions/Outcomes in the Pontchartrain Basin
- Case #2 Distant (Upstream) Sources/Interventions and Local (Basin and Gulf) Impacts/Outcomes
- Identifying Relevant Human Activities and Developing Metrics

Pollution in the Pontchartrain Basin

Lake Pontchartrain Basin

Pollution Sources



Shell Dredging

Sewage Discharge

Cracks Are Common in Old Pipe

- May Lead to Structural Failure
- Allows Groundwater to Enter (Infiltrate) Sewer

Urban Runoff

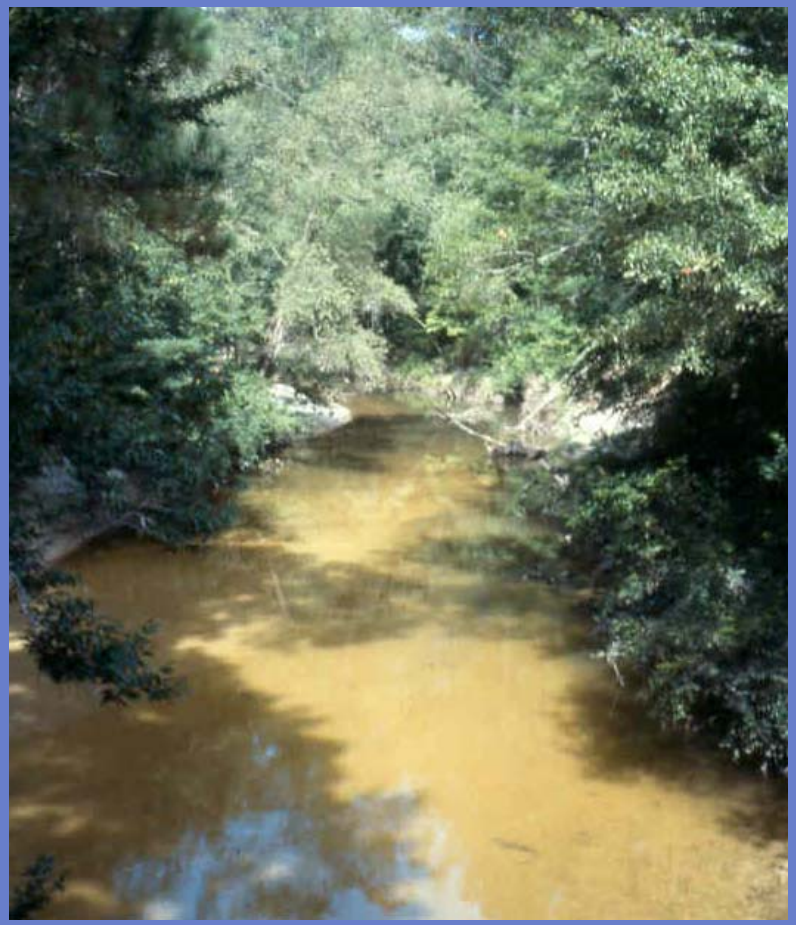
Storm Water Discharge

Agricultural Runoff

Livestock Runoff

Impacts

Polluted Rivers



Algal Blooms

Dead Zones/ Fish Kills

Beach Closings

Interventions

LPBF Created in 1989

Lake Pontchartrain Basin Foundation

- Initially outgrowth of Causeway Commission, public authority
- Later given autonomous n.g.o. status by state legislature
- Funded by EPA grants, citizen contributions, foundations
- Strong promotion and citizen involvement efforts

Outreach/
Public Events

Fishing Rodeo

“Back to the Beach”

Public Participation

Comprehensive Management Plan

Blueprint for Pontchartrain's restoration

Developed jointly by 98 entities:

- Citizen groups
- Local, state, and federal agencies
- Parish and municipal governments
- Business community/ chambers
- Agriculture community
- Commercial and recreational fishing
- Universities

Water Quality Monitoring

Education/Outreach

Repairing Sewer Lines

Livestock Waste Lagoon Construction

Sea grass Planting

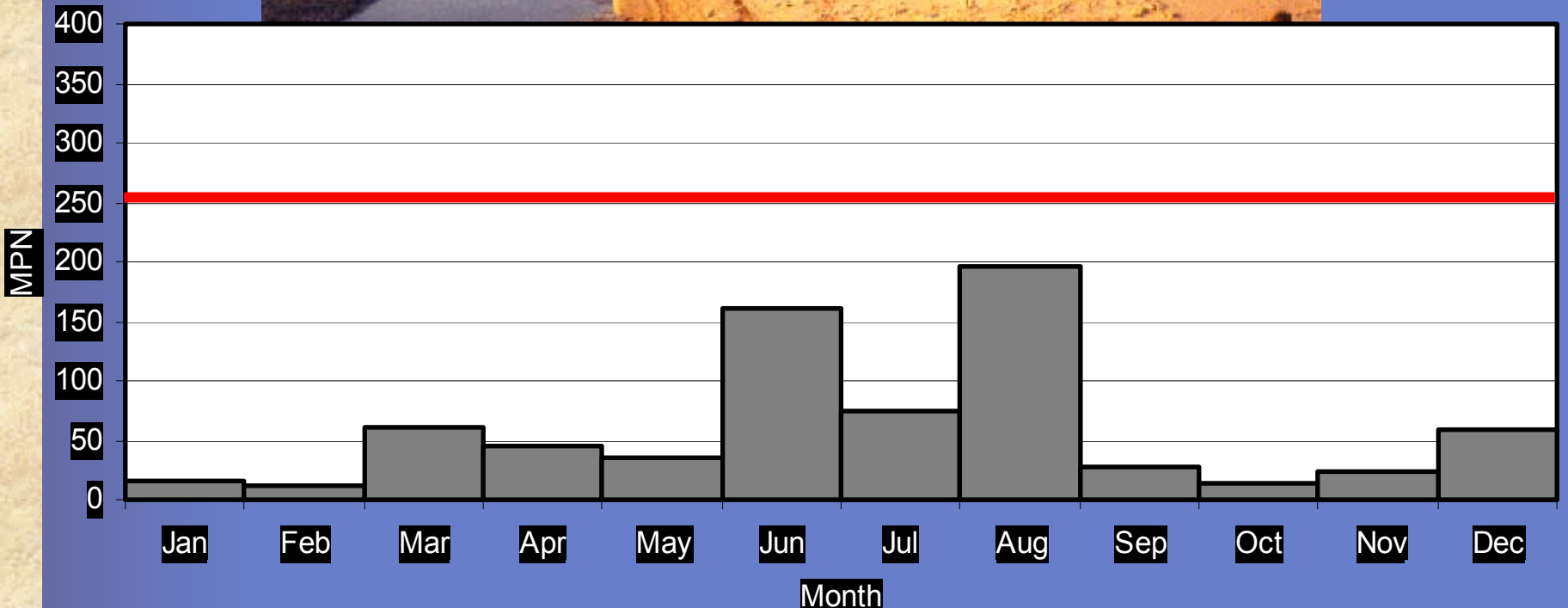
Tree Planter/ Reforestation

Big Branch Refuge Created

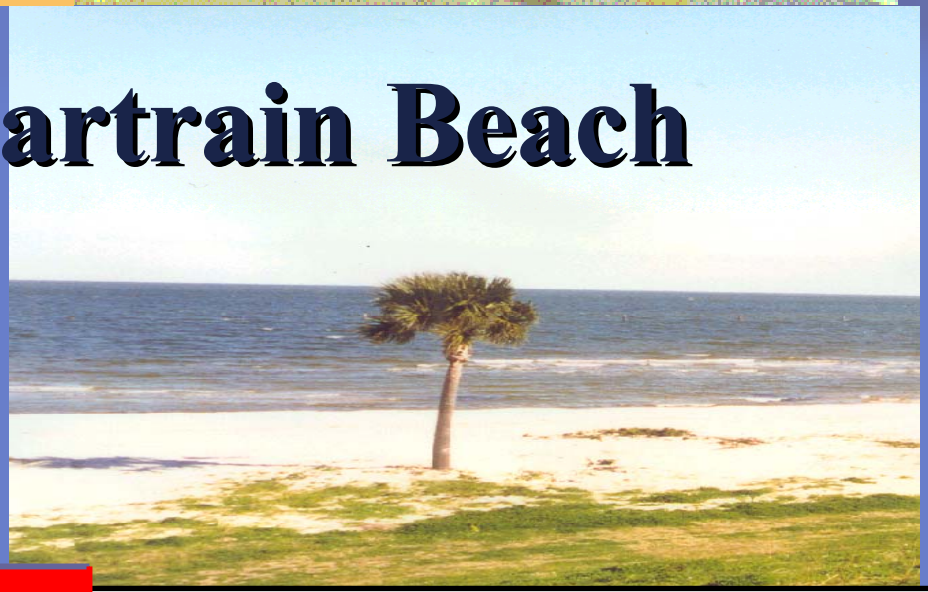
Bringing Back the Wetlands

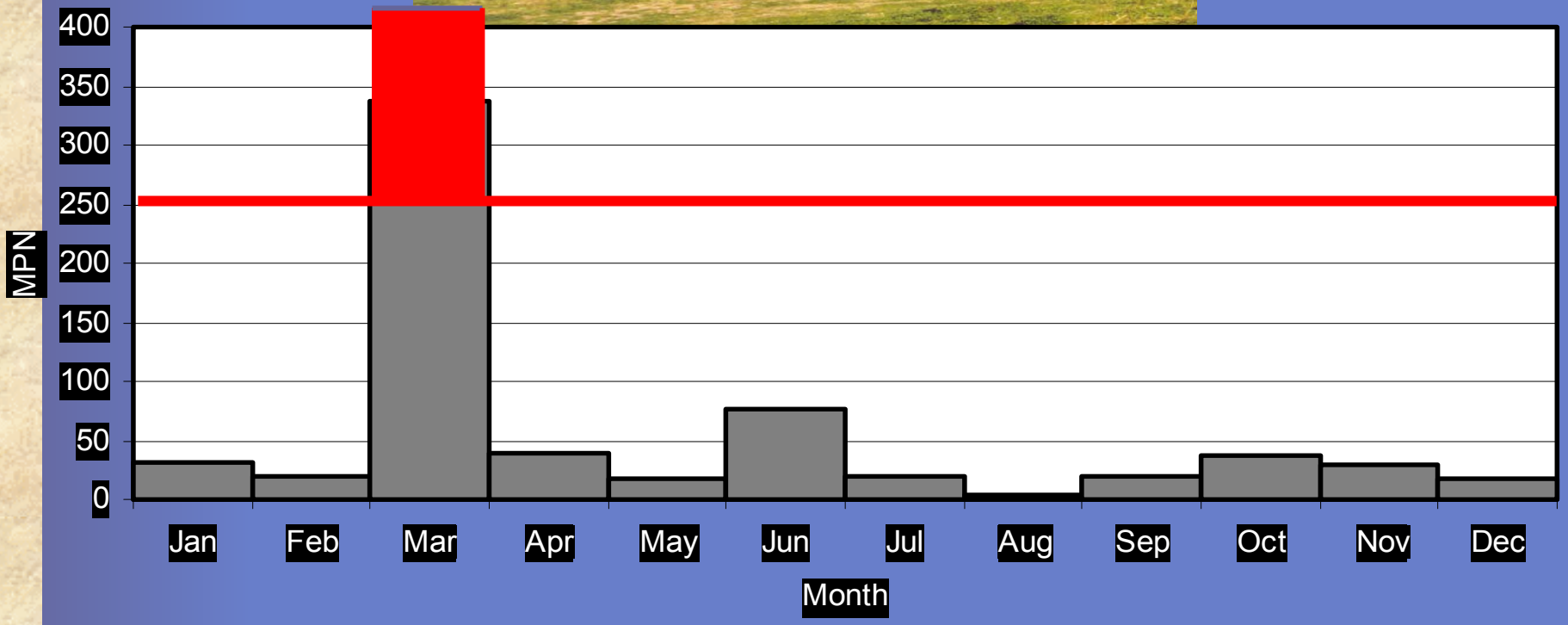
Outcomes

Fontainebleau Beach



Pontchartrain Beach





Water is clarified

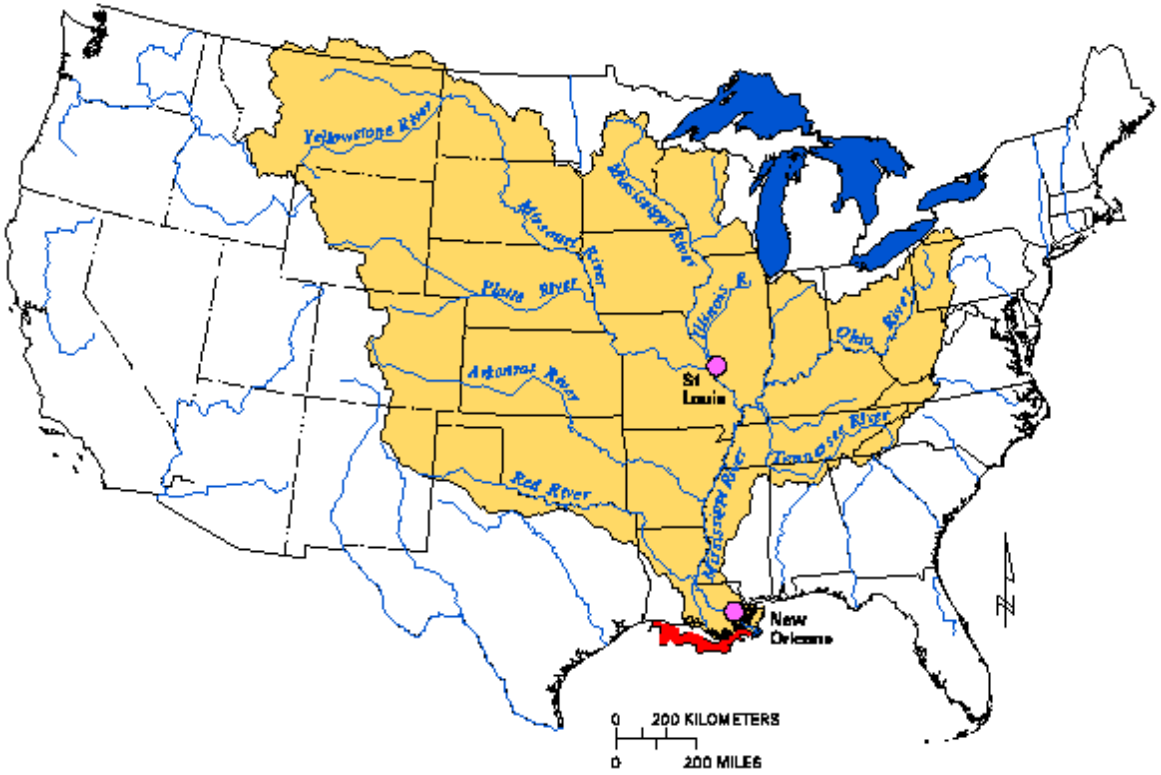
Wildlife returns (Manatee)

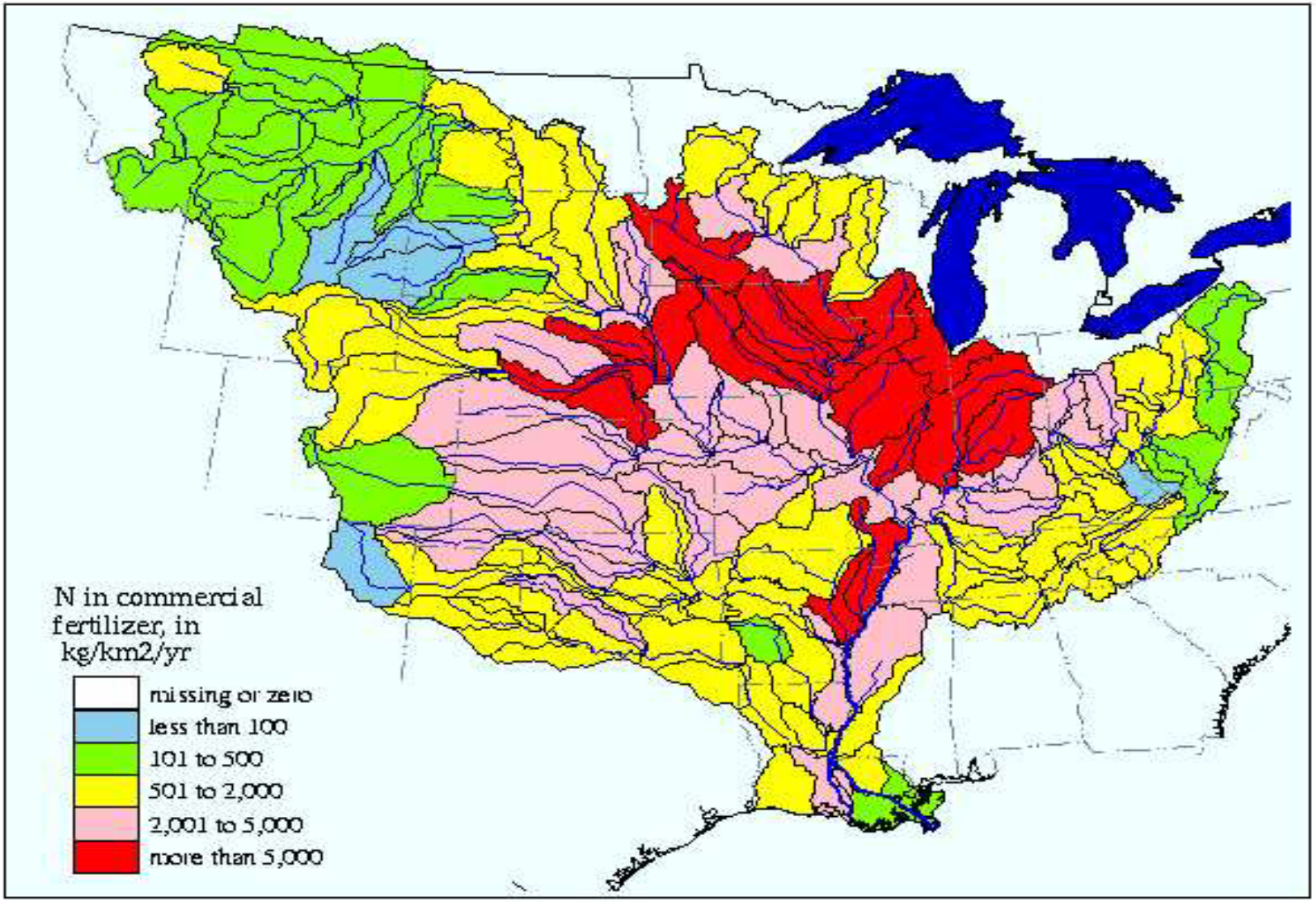
Recreational uses restored

Hypoxia in the Pontchartrain Basin and the Gulf of Mexico

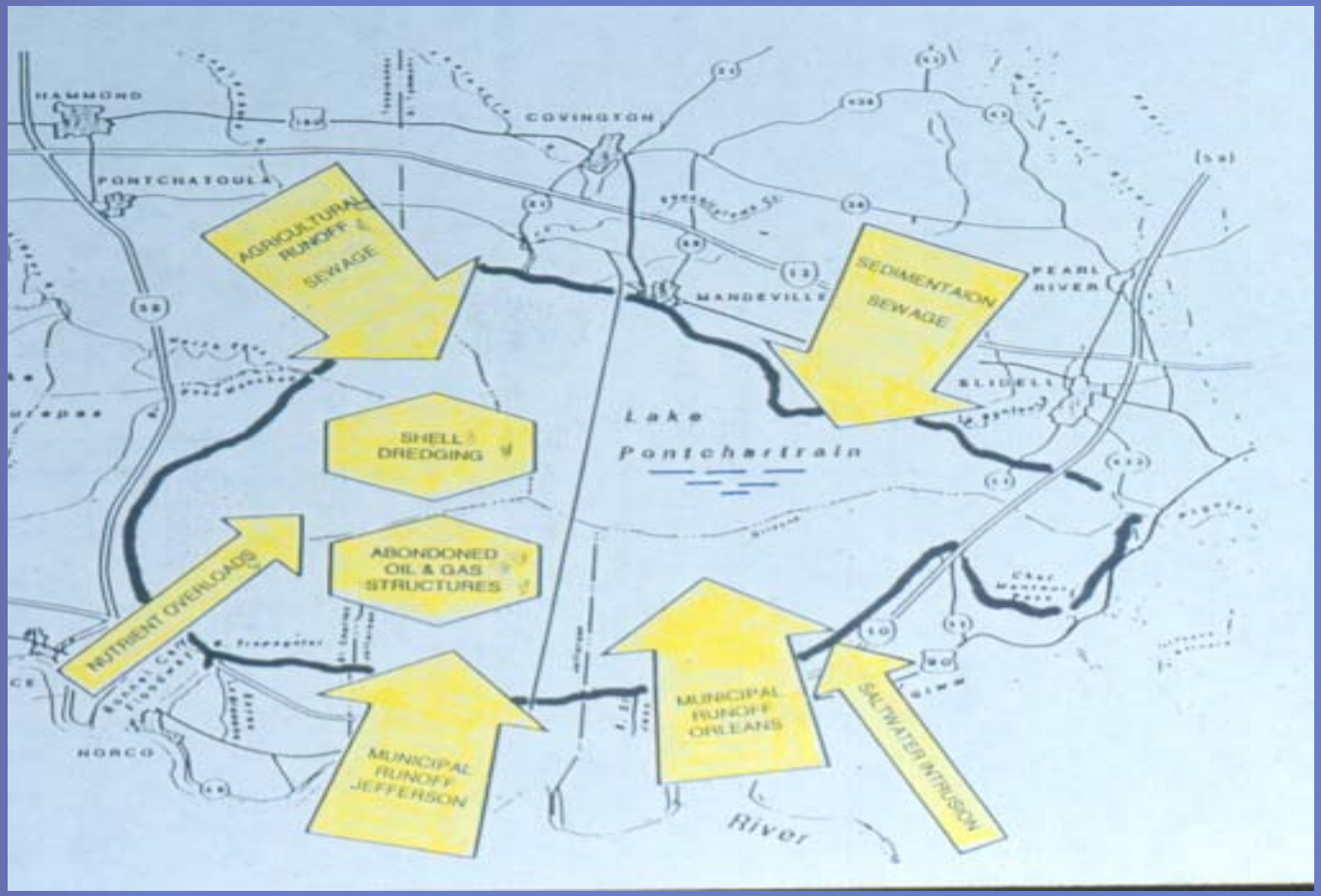
Sources

MISSISSIPPI – ATCHAFALAYA RIVER BASIN

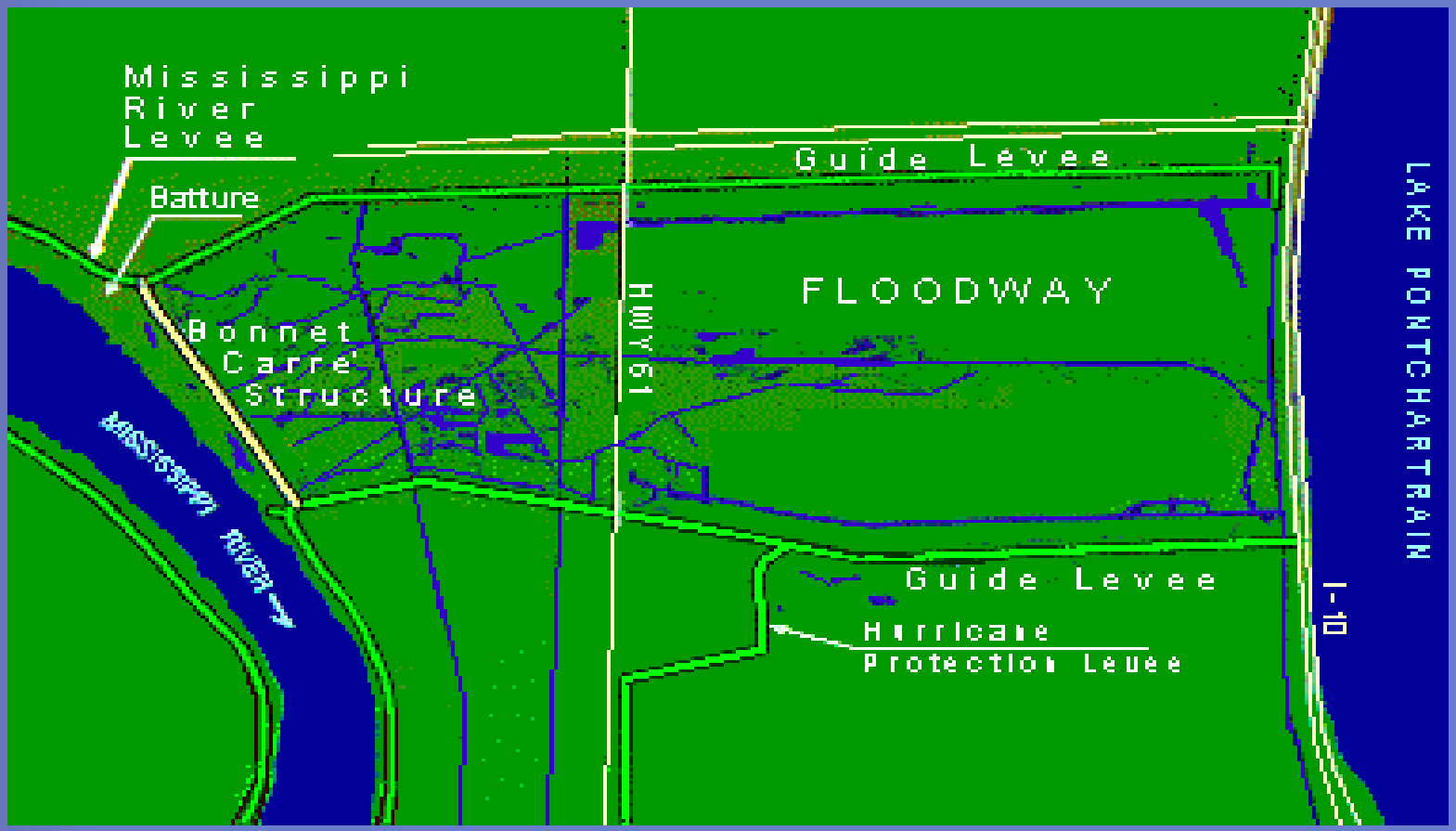



N in commercial fertilizer, in kg/km2/yr
missing or zero
less than 100
101 to 500
501 to 2,000
2,001 to 5,000
more than 5,000

Pollution Sources



Pathway between River & Lake



Opening spillway gates

Water flowing from Miss. River to Basin

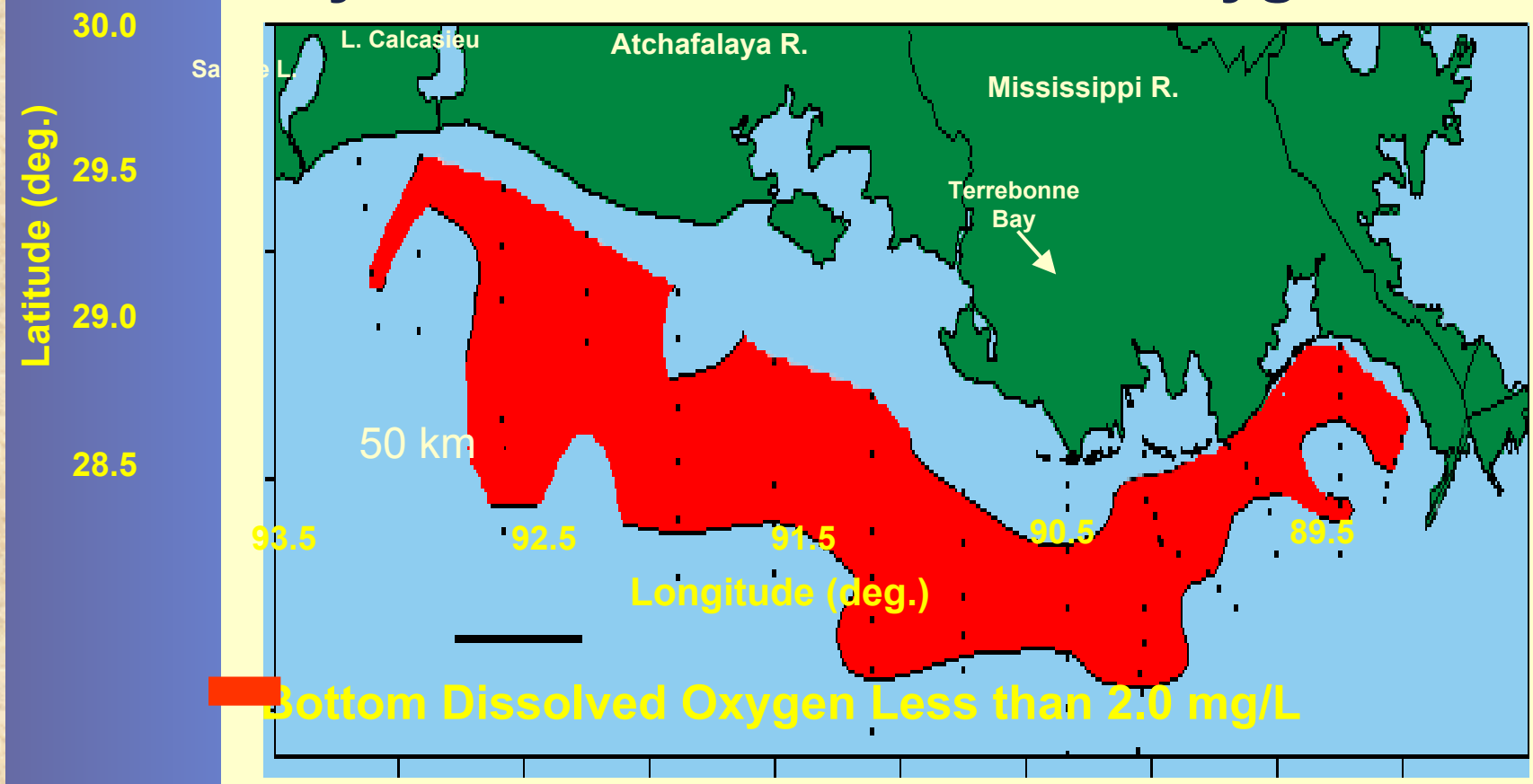
Agricultural Runoff

Livestock Runoff

Impacts

- Creation of hypoxic zone

July 23-28, 1999, Shelfwide Oxygen Survey



(Rabalais, Turner & Wiseman)

Impacts

- “Far afield” effects

Gulf Shrimping

Menhaden fishery

Basin Fishing

Related fishery industries

Mainstay of Louisiana diet

Interventions

Interventions

Adoption of plan

- Implementation of steps
  - Including creation of sub basin committees
- Commitment to voluntary, locally led, non-regulatory, practical and cost effective actions

Farm bill funding of best management practices related to run off such as no till drill planting

Hoped-For Outcomes

- Reduction in size of hypoxic zone
- Restoration of local watersheds throughout
  the Mississippi River watershed
  General improvement of Quality of Life
  throughout the watershed

Identifying Relevant Human Activities and Developing Metrics

Social, Political, Economic Indicators

- Measures of sources
- Measures of impacts
- Identify and measure successful interventions
- Measures of social and political outcomes

Relevant Concepts

- Enhancement of attachment to environment
- Utilizing of attachment to specific related symbols, activities to generate participation
- Broadly shared learning process about cause/effect linkages
- Aggressive mobilization of citizens/governments
- Commitment of resources
  - to mobilize concern and awareness
  - to develop and implement alternative “best practices”
- To regulate with commitment to enforcement