Gulf of Mexico Hypoxia Policy Update 2015

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Lower MS River Sub-basin Committee, 2015
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Effects are more far reaching than suspended sediment plume, esp. N & somewhat P

Source: N. Rabalais, LUMCON
Size of bottom-water hypoxia in mid-summer

Data source: Nancy N. Rabalais, LUMCON, and R. Eugene Turner, LSU
Funding sources: NOAA Center for Sponsored Coastal Ocean Research and U.S. EPA Gulf of Mexico Program
Gulf Hypoxia Action Plan 2008
for Reducing, Mitigating, and Controlling Hypoxia
in the Northern Gulf of Mexico and Improving
Water Quality in the Mississippi River Basin

• The Action Plan represents the national policy response to the problem of Gulf Hypoxia

• Its specific goal: reduction of the average annual size of the hypoxic zone to 5000 square kilometers (@ 1,900 square miles) by 2015

• The underlying goal is to protect the resource of the Gulf fishery before negative impacts are seen on the system
2001 Action Plan

• 2015 Goal
• “Subject to available resources”
• Reduce 5 year running average areal extent to less than 5000 square km through cost-effective, voluntary actions by all States… and all categories of sources and removals… to reduce annual discharge of N to the Gulf
• Action 1 calls for Task Force to submit integrated budget proposal by December 2000
Clean Rivers/Clean Gulf Budget Draft – 1/2001

- Overall funding level: $1 billion a year for 5 years
- Special FY 2002 $75 million “jump start” for States and Tribes to develop sub-basin strategies
- Omnibus Funding Mechanism: distributed to States and Tribes; included
  - Watershed Partnerships: $10 million/year for 5 years
  - MMR: $50 million/year for 5 years
  - Innovation Projects: $4 million per project per sub-basin per year for 5 years ($28 million)
Two main components of 2008 Action Plan Coastal Goal:

**Size:** 5000 square kilometers/1950 square miles as 5 year running average

**Date:** 2015

Goal is currently associated with a 45% dual nutrient (N & P) reduction strategy (SAB 2007)

Measure of nutrient loading/reduction near the mouths of the Mississippi/Atchafalaya Rivers (MAR) links Coastal Goal to actions upstream
2008 Action Plan Highlighted State Nutrient Reduction Strategies


- 2008 Action Plan:
  - Complete and implement comprehensive nitrogen and phosphorus reduction strategies for states within the Mississippi/Atchafalaya River Basin encompassing watersheds with significant contributions of nitrogen and phosphorus to the surface waters of the Mississippi/Atchafalaya River Basin, and ultimately to the Gulf of Mexico.
LMRSBC & LHWG

- Both formed in 2003 to help implement the 2001 Action Plan at the state and sub-basin level

- “By Summer 2001, States and Tribes in the Basin, in consultation with the Task Force, will establish sub-basin committees to coordinate implementation of the Action Plan”

- Plan by major sub-basins, including coordination among smaller watersheds, Tribes, and States in each of those sub-basins”
Area of Mid-Summer Bottom Water Hypoxia
(Dissolved Oxygen < 2.0 mg/L)

Bottom-water hypoxia area estimates from 1985-2013. Although some mapping was conducted in 1989, the complete survey was not conducted, no data (n.d.). The five-year running average and goal for the Hypoxia Action Plan are represented by the horizontal lines.
Gulf Hypoxia Action Plan
Revised Coastal Goal 2015

Reduce 5 year running average aerial extent of zone to less than 5000 km by 2035
Achieve Interim Target of 20% reduction of nutrient (N,P) loading to the Gulf by 2025
Actions to achieve Revised Coastal Goal

• Implement state nutrient reduction strategies
• Federal programs scaled at basin level:
  – USDA Mississippi River Basin Initiative, Regional Conservation Partnership Program
  – USFWS Mississippi River Habitat Initiative, Landscape Conservation Cooperatives

Quantification: Monitoring, Tracking, Modeling
Partnerships: Land Grant Universities, Private Sector Research
Pursue Additional Funding*
Land Grant Universities Partnership with Gulf Hypoxia Task Force

- Purdue University, University of Illinois, University of Arkansas, University of Kentucky, Mississippi State University, Ohio State University, University of Tennessee, University of Missouri, University of Minnesota, University of Wisconsin, Iowa State University and Louisiana State University.
SERA Goal: “Promote effective implementation of science-based approaches to nutrient management/conservation that reduces nutrient losses to the environment.”

- Objectives: 1. Establish and strengthen relationships that can serve the missions of multiple organizations addressing nutrient movement and environmental quality.
- 2. Expand the knowledge base for discovery of new tools and practices as well as for the continual validation of recommended practices.
- 3. Improve the coordination and delivering of educational programming and increase the implementation effectiveness of nutrient management strategies that reduce nutrient movement for agricultural and non-agricultural audiences.

- [https://water-meetings.tetratech.com/Hypoxia/content/Docs/SERA_LGU_Framework.pdf](https://water-meetings.tetratech.com/Hypoxia/content/Docs/SERA_LGU_Framework.pdf)
The Consequences

- Fisheries resources at risk
- Altered migration
- Reduced habitat
- Changes in food resources
- Susceptibility of early life stages
- Growth & reproduction
The future of the fishery ultimately depends on the health of the resource.

The Gulf of Mexico has one of the last productive wild coastal fisheries left in the continental U.S.
Take Away Points

• Nutrients in the river should be reduced under any scenario
• The strategy since 2001 is supposed to be act now rather than waiting for large-scale impacts on the fishery
• Shrimpers, fishermen, and coastal communities have to engage on this issue to ensure their resource gets protected