

The 5th Annual NOAA/NGI Gulf Hypoxia Research Coordination Workshop

Hosted by the **Northern Gulf Institute** with support provided by:

- National Oceanic and Atmospheric Administration (NOAA):
 - National Ocean Service
 - National Marine Fisheries Service
 - Gulf of Mexico Regional Collaboration Team
- Environmental Protection Agency (EPA) Gulf of Mexico Program
- Restore the Mississippi River Delta Coalition
- Northern Gulf Institute (NGI)



Steering Committee

Purpose

- Dave Kidwell (NOAA National Centers for Coastal Ocean Science) - co chair
- Steve Ashby (Northern Gulf Institute) - co chair
- Marie Bundy (NOAA National Ocean Service)
- Lael Butler (Environmental Protection Agency)
- Rich Fulford (Environmental Protection Agency)
- Steve Giordano (NOAA National Marine Fisheries Service)
- Chris Kelble (NOAA Office of Oceanic & Atmospheric Research)
- Alan Lewitus (NOAA National Ocean Service)
- LaToya Myles (NOAA Office of Oceanic & Atmospheric Research)
- Alisha Renfro (National Wildlife Federation)
- Dave Scheurer (NOAA National Ocean Service)
- Howard Townsend (NOAA National Marine Fisheries Service)

Hypoxia and Mississippi River diversions are closely linked by overlap in ecosystem model domains, affected species and habitats, and by the intersection of mitigation efforts in influencing water quality (e.g. salinity and nutrient properties). The purpose of this workshop is to advance fisheries ecosystem management in the northern Gulf to inform efforts to assess and predict the potential ecological and socioeconomic effects of diversions and hypoxia.

Goals

Provide a forum for strengthening communication and coordination between physical, biological, and socioeconomic modelers of Gulf of Mexico hypoxia and Mississippi River diversions, and the users and stakeholders (e.g. Hypoxia Task Force, fisheries managers).

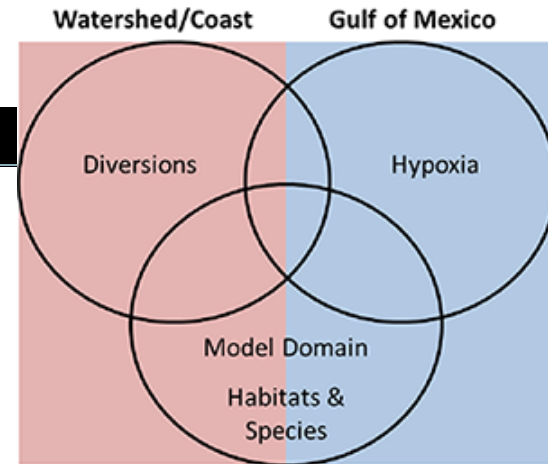
Validate and refine key fisheries management and habitat conservation needs associated with ecosystem (including socioeconomic) effects of hypoxia and large-scale river diversions in the Gulf of Mexico.

Assess adaptive management needs for advancing ecosystem modeling of hypoxia and diversion effects on habitats and living resources in the northern Gulf of Mexico.

Outputs

- [Ecological Modeling Matrix \(30 KB\)](#) that documents parameters, functions, and applications of existing models targeting the ecosystem impacts of hypoxia and diversions in the northern Gulf of Mexico
- [Defined Management Needs White Paper \(228 KB\)](#) related to living resource and habitat effects of Gulf Hypoxia and diversions

- *Ecological Modeling Adaptive Management Framework* for advancing ecosystem modeling of hypoxia and diversion effects in the Northern Gulf of Mexico



Monday, July 14

Workshop Agenda

12:00 - 1:00 PM: Registration - Light lunch provided

1:00 - 1:25 PM: Opening Remarks

- Welcome - Steve Ashby (Northern Gulf Institute)
- Logistics - Julie Marcy (USACE)
- Workshop Overview - David Kidwell (NOAA) | **527 KB**

1:25 - 1:55 PM: Keynote Presentations

- Hypoxia, ecosystems, and strategies for integration - Paul Sandifer (NOAA) | **944 KB**
- Habitat conservation and fisheries - Buck Sutter (NOAA) | **611 KB**

Introduction to the Issues - Overview of Gulf hypoxia and Mississippi River diversions

1:55 - 2:20 PM: Science on the causes of Gulf of Mexico Hypoxia - Nancy Rabalais (LUMCON) | **3.5 MB**

2:20 - 2:35 PM: Gulf hypoxia and Mississippi River nutrient management - Alan Lewitus (NOAA) | **944 KB**

2:35 - 2:50 PM: Overview of existing and planned Mississippi River diversions - Wes LeBlanc (CPRA) | **1.5 MB**

2:50 - 3:15 PM: Mississippi River diversion science - Robert Twilley (LSU) | **5 MB**

3:15 - 3:30 PM: Break

Refining fisheries management and habitat conservation needs

3:30 - 3:45 PM: Gulf States Marine Fisheries Commission - Jeff Rester (GSMFC) | **1.1 MB**

3:45 - 4:00 PM: NMFS Southeast Region's perspective on diversions - Rick Hartman (NOAA) | **351 KB**

4:00 - 4:15 PM: Environmental compliance - Steve Giordano (NOAA) | **1.5 MB**

4:15 - 4:30 PM: Mississippi Hydro and Delta Management - Barb Kleiss (USACE) | **1.5 MB**

Integrating ecological modeling capabilities for adaptive management

4:30 - 4:45 PM: Ecosystem Research Strategy - Marie Bundy (NOAA) | **390 KB**

4:45 - 5:00 PM: NMFS Southeast Region's perspective on diversions - Chris Kelble (NOAA) | **1.8 MB**

5:00 - 5:15 PM: Ecosystem restoration and fisheries management - Howard Townsend (NOAA) | **880 KB**

5:15 - 5:30 PM: Wrap up - End of Day 1

Tuesday, July 15

Workshop Agenda

7:30 - 8:00 AM: Registration

8:00 - 8:10 AM: Overview of management needs identified in pre-meeting white paper and presented on Day 1 - David Kidwell (NOAA) | **344 KB**

8:10 - 9:15 AM: Breakout groups - Refining and prioritizing fisheries management and habitat conservation needs

- Do the identified diversion and hypoxia management needs represent the complete suite of needs?
- Given the list of management needs, what are the top 3-5 priorities that should be addressed through ecological modeling applications?
- Which management priorities are best addressed in the over the next 3-5 years? 5-20?

9:15 - 9:30 AM: Break

9:30 - 10:15 AM: Report out from breakout session

- Top 3-5 management priorities best addressed over one adaptive management cycle (the next 3-5 years)
- Top 3-5 management priorities best addressed over more than one adaptive management cycle (10-50 years)

Presentations on ecological modeling platforms

10:15 - 10:30 AM: Hypoxia effects on fish populations: model predictions under fixed vs. dynamic oxygen environments - Sean Creekmore (LSU) | 1.4 MB

10:30 - 10:45 AM: Gulf Atlantis model - Cam Ainsworth (USF) | 2.3 MB

10:45 - 11:00 AM: Spatial effects of hypoxia on fish and fisheries - Kevin Purcell (NOAA) | 1.9 MB

11:00 - 11:15 AM: Economic effects of hypoxia on fisheries - Marty Smith (Duke) | 708 KB

11:15 - 11:45 AM: Using ecosystem models to simulate effects of environmental factors on fish and fisheries - Kim de Mutsert (GMU) | 1.7 MB

11:45 - 12:45 AM: Lunch (provided)

Presentations on ecological modeling platforms continued...

12:45 - 1:00 PM: Adaptation of the CASM to Evaluate Food Web Dynamics and Species Responses in Barataria Basin - Shaye Sable (Dynamic Solution LLC) | 6.2 MB

1:00 - 1:15 PM: TroSim: Trophic Simulation Model for Mississippi Sound, Barataria Bay or anywhere else - Scott Milroy (USM) | 1.4 MB

1:15 - 1:30 PM: Freshwater diversions, oyster reef restoration and fisheries sustainability on the primary public seed grounds of Louisiana - Tom Soniat (UNO) | 1.4 MB

1:30 - 1:45 PM: Integrating socioeconomics into ecological modeling platforms - Howard Townsend (NOAA) and David Chagaris (FL FWCC) | 537 KB

1:45 - 2:00 PM: Conceptualizing the economic effects of large scale diversions on fishing firms - Rex Caffey (LSU) | 1.6 MB

2:00 - 2:30 PM: Modeling effects of diversions on fish and general best practices for modeling fish responses to restoration - Kenny Rose (LSU) | 1.9 MB

2:30 - 2:45 AM: Break

Breakout group meeting activities...

2:45 - 4:00 PM: Building on model matrix and presentation to assess model capabilities and gaps

- How do the models differ in structure and application relative to priority management needs?
- What are the primary limitations of the current suite of modeling approaches for addressing management priorities?
- Can ecological modeling focused on shelf hypoxia and river diversions be truly separated or should coordination continue and/or increase?

4:00 - 4:45 PM: Report out from breakout session

- Summary of modeling assessment to meet prioritized management needs
- Key model limitations in addressing management needs

4:45 - 5:00 AM: Wrap up

5:00 - 7:30 PM: Networking Social at Infinity Science Center

Wednesday, July 16

Workshop Agenda

7:30 - 8:00 AM: Registration

8:00 - 8:15 AM: Linking ecosystem research, services, and management - LaToya Myles (NOAA) | 143 KB

8:15 - 8:40 AM: Discussion on incorporating the human element

8:40 - 9:50 AM: Breakout groups - Plotting the path forward through adaptive management

- What are the key science priorities to advance ecological modeling capabilities to address priority management needs?
- What is the best approach for holistic application of ecological models within an adaptive management framework?
- What are your recommendations for next steps over the next 3-5 years?

9:50 - 10:05 AM: Break

10:05 - 10:50 AM: Report out from breakout session

- Top 3-5 science priorities
- Recommended approaches for model application
- Key next steps over next 5 years (if time permits)

10:50 - 11:00 AM: Wrap up and next steps

11:00 - 12:00 PM: Pathways for applying workshop results and opportunities for adaptive management

- EPA - Ben Scaggs
- NOAA Fisheries - Buck Sutter
- NOAA Ocean Service - Rob Magnien
- Louisiana Coastal Protection and Restoration Authority - Rick Raynie

12:00 PM: Adjourn

Also see the 2011, 2012 and the 2013 workshop proceedings.
