Gulf of Mexico Hypoxia Monitoring Implementation Plan

Alan Lewitus
NOAA/NOS/NCCOS
Center for Sponsored Coastal Ocean Research
modified by N. Rabalais
for
GCOOS February 2009
Hypoxia in the Northern Gulf of Mexico

EPA Science Advisory Board

GOAL

By 2015,

reduce hypoxia below 5,000 km$^2$ (1928 mi$^2$) (over a 5-yr running average).

...(by reducing) the annual discharge of nitrogen and phosphorus into the Gulf.

FY 2009 OPERATING PLAN
A COMPILATION OF ACTIONS TO IMPLEMENT THE GULF HYPOXIA ACTION PLAN 2008
Area of Mid-Summer Bottom Water Hypoxia (Dissolved Oxygen < 2.0 mg/L)

Source: N. Rabalais, LUMCON
Summit on Gulf Hypoxic Zone Monitoring

Summit on Long-Term Monitoring of the Gulf of Mexico Hypoxic Zone: Developing the Implementation Plan for an Operational Observation System

http://www.ngi.msstate.edu/hypoxia/janconference.html
Outcomes

1 White Paper to Improve Monitoring of the Gulf of Mexico Hypoxic Zone in Support of the Hypoxia Task Force’s Coastal Goal

1 White Paper: Hypoxia Data Inventory

2 Hypoxia Monitoring Stakeholder Committee

Hypoxia Monitoring Implementation Plan

1 http://www.ngi.msstate.edu/hypoxia/whitePaper.html
2 http://www.ncddc.noaa.gov/activities/gulf-hypoxia-stakeholders/view
Priority 1 (Core System Requirements)
Provide sufficient monitoring data to ensure that management is adequately informed in efforts to achieve the Coastal Goal

Priority 2
Assess annual changes in the magnitude, seasonality, duration, and distribution of hypoxia, and relate these to management activities that affect nutrient loading and other influences on hypoxia

Priority 3
• Provide adequate data for predictive models to develop accurate forecasts of hypoxia given alternative management targets for nutrient reduction and alternative scenarios of climate change
• Determine the relationship between hypoxic zone magnitude, timing, and distribution, and the distribution, production, and health of ecologically and commercially important finfish and shellfish
Gulf of Mexico Hypoxia Monitoring Implementation Plan Workshop
Northern Gulf Institute
9 December 2008
Stennis Space Center, Mississippi

- Refine system components
- Review tier structure
- Address Action Plan needs
- Discuss financial strategy

Workshop Report in Review
System Requirements

- Extend spatial coverage of shelf-wide surveys
- Increase number of surveys
- Maintain transects and observing systems
- Test application of AUVs
Tier 2
Increase number of observing systems

Observing Systems: ● Existing ● Proposed
Create a portal to maximize accessibility to, and exchange of, hypoxia data

- Maintain Gulf Hypoxia Monitoring Stakeholder Committee (GHMSC) and promote coordination through workshops
- Maintain GHMSC website
- Coordinate outreach activities between GHMSC and Hypoxia Task Force, GOMA, GCOOS outreach committees
- Promote mechanisms for increasing awareness of public/stakeholders
- Promote mechanisms for dissemination findings and data to managers
System Requirements

Outreach

- Expand Hypoxia Watch website to host national hypoxia observations
- Improve discovery, access, transport, and archive of data
- Data aggregate from sensor network – connect to CZRM
- Website geospatial mapping capability
Gulf of Mexico Hypoxia Monitoring Stakeholder Committee

Joe Stinus (NOAA), Chair
Scott Phipps (AL DCNR)
Dugan Sabins (LA DEQ)
Gregory DuCote (LA DNR)
Mark Fisher (TX CEQ)
Laurie Rounds (NOAA)

Ann Jochens (TAMU)
Charles Kovach (FL DEP)
Kris Pintado (LA DEQ)
Henry Folmar (MS DEQ)
Ed Buskey (U. Texas)
Lee Yokel (AL DISL)
# GULF OF MEXICO
HYPOXIA MONITORING IMPLEMENTATION PLAN

<table>
<thead>
<tr>
<th>Steering Committee</th>
<th>Technical Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alan Lewitus (NOAA), co-chair</td>
<td>Jim Ammerman (Rutgers)</td>
</tr>
<tr>
<td>Nancy Rabalais (LUMCON), co-chair</td>
<td>Bob Arnone (NRL)</td>
</tr>
<tr>
<td>Phil Bass (EPA)</td>
<td>Brenda Babin (LUMCON)</td>
</tr>
<tr>
<td>Russ Beard (NOAA)</td>
<td>Charlie Crawford (USGS)</td>
</tr>
<tr>
<td>Rick Greene (EPA)</td>
<td>Richard Crout (NOAA)</td>
</tr>
<tr>
<td>Ann Jochens (TAMU)</td>
<td>Steve DiMarco (TAMU)</td>
</tr>
<tr>
<td>Steve Lohrenz (USM)</td>
<td>Jim Hagy (EPA)</td>
</tr>
<tr>
<td>David Shaw (MSU)</td>
<td>Sharon Mesick (NOAA)</td>
</tr>
<tr>
<td>Janice Ward (USGS)</td>
<td>Rich Patchen (NOAA)</td>
</tr>
<tr>
<td>Dave Whitall (NOAA)</td>
<td>Nancy Rabalais (LUMCON)</td>
</tr>
</tbody>
</table>