

Gulf Hypoxic Zone Monitoring Implementation Plan



Photo credit:
Nancy Rabalais
(LUMCON)

Photo credit:
Kjell Gundersen (USM)

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NOAA/NOS/NCCOS

Forum for Gulf of Mexico Hypoxia Research Coordination & Advancement
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Gulf Hypoxic Zone Monitoring Implementation Plan

- ***Summit on Long-Term Monitoring of the Gulf of Mexico Hypoxic Zone: Developing the Implementation Plan for an Operational Observation System (Jan 2007)***
- ***Gulf of Mexico Hypoxia Monitoring Implementation Plan Workshop at the Northern Gulf Institute (Dec 2008)***
- ***Gulf Hypoxic Zone Monitoring Implementation Plan (Jan 2009)***

Gulf of Mexico Hypoxic Zone Monitoring Implementation Plan

Steering Committee

Alan Lewitus (NOAA), co-chair
Nancy Rabalais (LUMCON), co-chair
Phil Bass (EPA)
Russ Beard (NOAA)
Rick Greene (EPA)
Ann Jochens (TAMU)
Steve Lohrenz (USM)
David Shaw (MSU)
Janice Ward (USGS)
Dave Whitall (NOAA)

Technical Committee

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Bob Arnone (NRL)
Brenda Babin (LUMCON)
Charlie Crawford (USGS)
Richard Crout (NOAA)
Steve DiMarco (TAMU)
Jim Hagy (EPA)
Sharon Mesick (NOAA)
Rich Patchen (NOAA)
Nancy Rabalais (LUMCON)

Stakeholder Committee

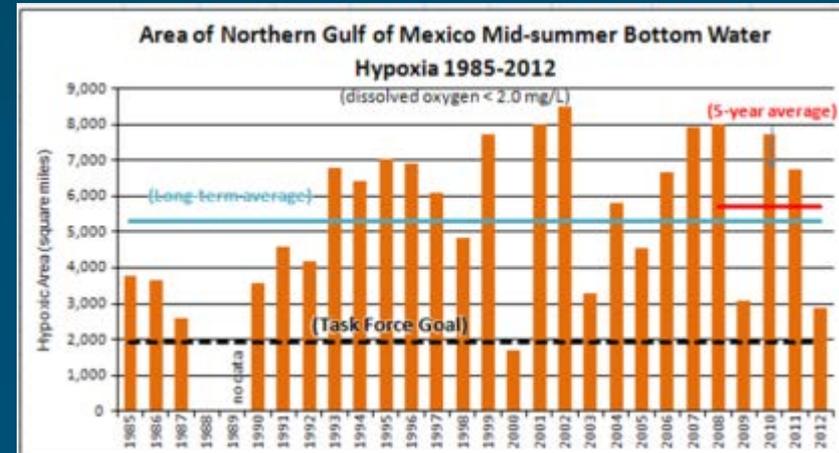
Joe Stinus (NOAA), Chair
Gregory DuCote (Louisiana DNR)
Henry Folmar (Mississippi DEQ)
Scott Phipps (Alabama DCNR)
Dugan Sabins (Louisiana DEQ)

Ed Buskey (U. Texas)
Mark Fisher (Texas CEQ)
Charles Kovach (Florida DEP)
Kris Pintado (Louisiana DEQ)

Gulf Hypoxic Zone Monitoring Implementation Plan

Core System Requirements

- Increase frequency of shelf-wide surveys
- Expand spatial boundaries
- **Deployment of Autonomous Underwater Vehicles (AUVs)**
- Create a portal to maximize accessibility to, and exchange of, hypoxia data
- Outreach program to promote effective communications to increase awareness of hypoxia



From Nancy Rabalais (LUMCON)



Glider Deployment – Core System Requirement

- *System Requirement* : Add deployments of AUVs with dissolved oxygen sensors.
- FY10 Plan: AUV will be deployed in the Mississippi Bight and west of the Mississippi delta in pilot studies in FY10 for future application.



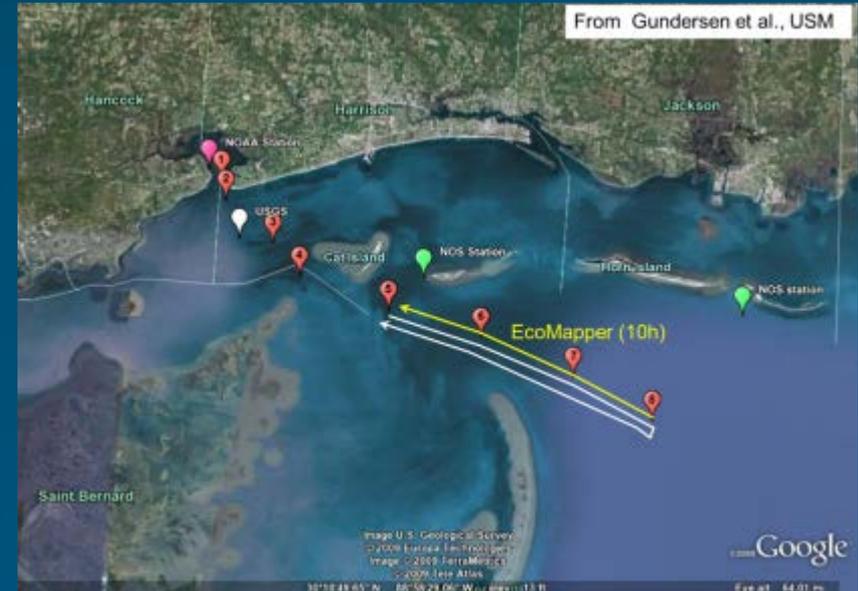
Improving Hypoxic Zone Monitoring

- ***Workshop to Coordinate Gulf of Mexico Hypoxic Zone Research – “1st Annual” (Feb 2010)***
 - ***Breakout Session on “AUVs and Observing Systems”***
 - ***Workshop output - FY10 Hypoxic Zone Monitoring Coordination Plan and Report***
 - ***Hypoxia Task Force FY11 Annual Operating Plan***

FY10 Hypoxic Zone Monitoring Coordination Plan and Report

FY10 Results:

- Two attempts were done to fly the USM Glider “Roxy” on the shelf and both failed due to technical complications associated with the extreme density gradients in summer.



Glider tract planned by USM

- LUMCON with VIMS. Also technical problems.

Improving Hypoxic Zone Monitoring

- ***2nd Annual Hypoxia Research Coordination Workshop (March 2011)***
- ***3rd Annual Hypoxia Research Coordination Workshop (March 2012)***
 - ***Hypoxia Task Force FY12 Annual Operating Plan***
 - ***Hypoxia Task Force Monitoring Framework (Apr 2012)***
 - ***2012 Revised Gulf of Mexico Hypoxic Zone Implementation Plan (Aug 2012)***

Hypoxia Task Force Monitoring Framework

“Within 1 year, convene a **planning workshop** for optimal deployment of Autonomous Underwater Vehicles (AUVs, e.g. “Gliders”) in the Gulf;

within 2 years, conduct pilot studies of glider application to hypoxic zone monitoring east and west of the Mississippi delta; and

within 3 years, conduct monthly deployments from April through September to cover the hypoxic zone area”

2012 Revised Gulf of Mexico Hypoxic Zone Implementation Plan

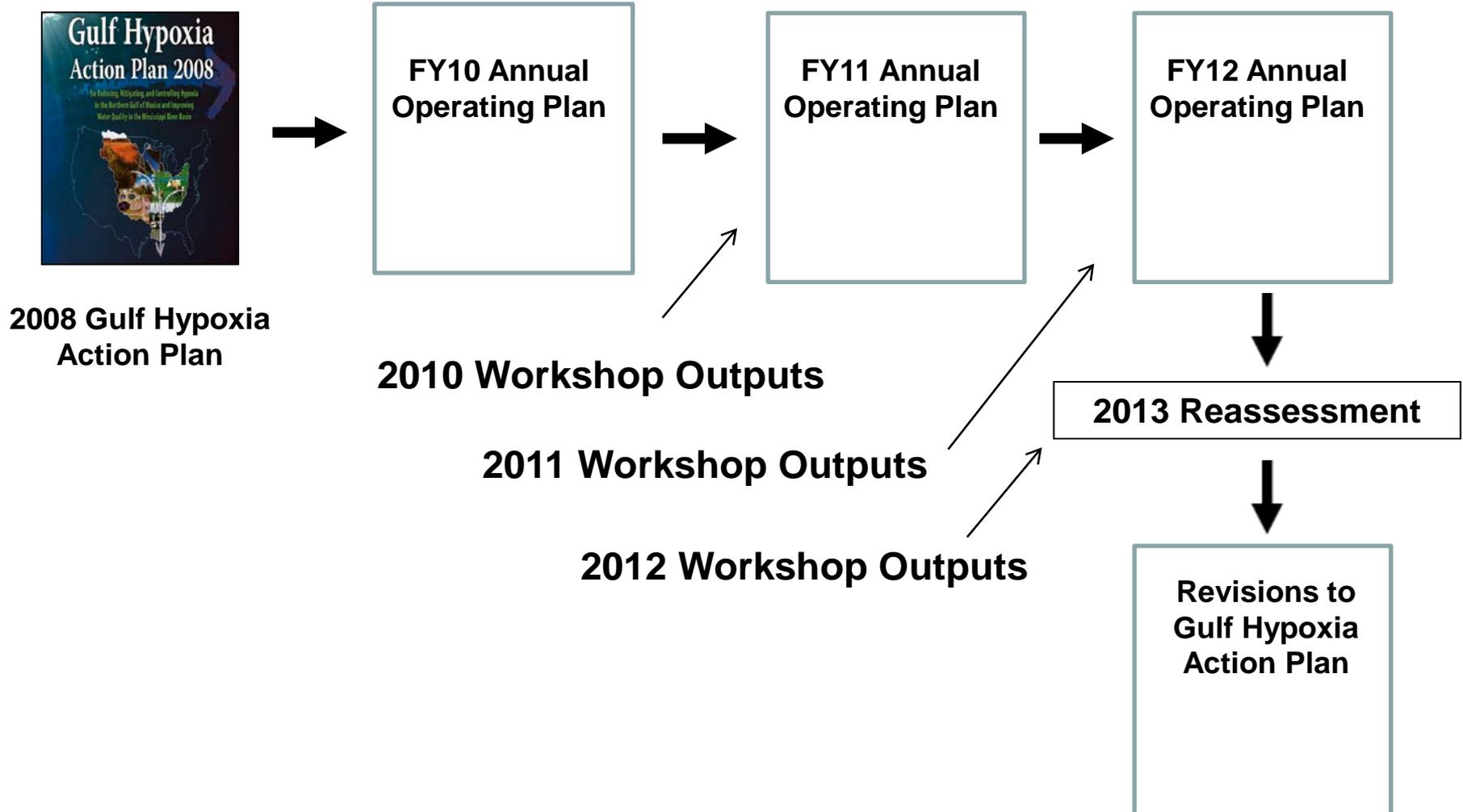
- Year 1: **Workshop** to determine optimal glider design and glider monitoring strategy for temporal/spatial coverage that complements ship surveys and observing systems.
- Year 2: Retrofit available gliders with dissolved oxygen sensors and new pistons to allow coverage of entire water column under high vertical density gradient test cruise; Pilot studies to test application of AUVs with dissolved oxygen sensors to study areas conducted by LUMCON, TAMU, and USM

2012 Revised Gulf of Mexico Hypoxic Zone Implementation Plan

- **Long-term: Monthly deployment of gliders east (1 grid) and west (2 grids) of the Mississippi delta from April through September to cover the hypoxic zone area. This would require 9 gliders (2 deployed per grid and 1 backup).**

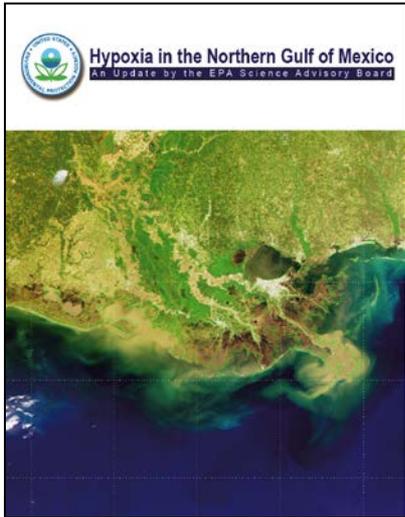
- Following slides may be helpful in your first talk, or not??

Outputs from Hypoxia Coordination Workshops inform Hypoxia Task Force



2013 Reassessment: Progress Since SAB Report

2004-2008
Reassessment



2008 EPA Science
Advisory Board
Hypoxia Report

Biogeochemical
Processing Work Group



Synthesis Report to
inform reassessment
of Action 9

Living Resources
Impacts Work Group



Synthesis Report to
inform reassessment
of Action 5

Hypoxia
Coordination
Workshop