

The Cooperative Hypoxia Assessment and Monitoring Program

CHAMP is a grass roots approach for monitoring hypoxia in the Northern Gulf of Mexico. Eight working groups share a mission to fill critical information gaps that currently limit the ability of water quality and resource managers to protect and restore the coastal ecosystem

Workgroup Leads

Steven Ashby, Northern Gulf Institute, Mississippi State University

Rebecca Allee, NOAA National Ocean Service

Christopher Brown, NOAA National Environmental Satellite, Data, and Information Service

Kevin Craig, NOAA National Marine Fisheries Service

Steve DiMarco, Texas A&M University

Brian Dzwonkowski, University of South Alabama

Katie Flahive, EPA Office of Water

Angelina Freeman, Louisiana Coastal Protection and Restoration Authority

Steven Giordano, NOAA National Marine Fisheries Service

Stephan Howden, University of Southern Mississippi

Dubravko Justić, Louisiana State University

Barb Kirkpatrick, Gulf of Mexico Coastal Ocean Observing System

Trevor Meckley, NOAA National Ocean Service

Nancy Rabalais, Louisiana State University & Louisiana Universities Marine Consortium

Danny Wiegand, EPA Gulf of Mexico Program

The Problem: Excess nitrogen and phosphorus flowing into the Gulf of Mexico contribute to algal blooms that ultimately, upon their sinking and degradation, fuel the development of hypoxic (low oxygen) zones that are nearly devoid of life at the bottom – a.k.a. “dead zones.” Efforts to restore hypoxia-impacted ecosystems, throughout the Gulf, require adequate monitoring to inform management decisions and measure progress.

The Solution: CHAMP informs managers of the progress of their mitigation actions, and supports models that advise managers on how to adapt nutrient reduction strategies to best achieve their restoration goals. The vision of the Cooperative Hypoxia Assessment and Monitoring Program (CHAMP) is to create a robust and sustainable monitoring program for the Gulf to ensure that these managers’ needs will be served effectively into the future.

Coastal hypoxia, a symptom of degraded water quality, is expanding globally due to increased nutrient loading, and can have devastating impacts on ecologically and commercially important living resources. In the northern Gulf of Mexico, hypoxia affects coastal ecosystems in all five U.S. States bordering the Gulf, as well as a large offshore region over the Mississippi/Louisiana/Texas continental shelf that contains the largest recurring hypoxic zone in the U.S. and the second largest in the world.

The nutrients that fuel this hypoxic zone largely originate within the Mississippi drainage basin, a watershed covering more than 40% of the contiguous United States. Reducing the size and mitigating the effects of this large dead zone is one of the biggest ecosystem management challenges facing the nation. To address this national problem, Congress established the Interagency (7 Federal, 12 States, and a Tribal Council) Hypoxia Task Force to develop and implement watershed nutrient reduction strategies to achieve the goal of decreasing the size of the Gulf dead zone and to monitor progress over time.



Management Needs: A robust monitoring program that encompasses hypoxia and related water quality (WQ) issues is a critical need of three user groups:

- 1- The Hypoxia Task Force (HTF)**, who need monitoring to understand the conditions related to the timing and location of hypoxia, and to assess progress towards decreasing the size of hypoxic zone;
- 2- Resource Managers**, who need to predict hypoxia effects on commercial and recreational fisheries, and their habitats to help inform, stock and ecosystem assessments; and,
- 3- Gulf State Managers**, who need WQ monitoring to establish current and predict future effects of natural and anthropogenic activities (e.g., climate change, restoration activities such as freshwater diversions) to fulfill their mandates to protect and restore coastal water quality.

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CHAMP is a *grass roots* effort that emerged from collaboration. Recognizing the inadequacy of current hypoxia monitoring, Gulf researchers, federal and state managers, and stakeholders met at the 6th Annual NOAA/NGI Hypoxia Research Coordination Workshop in Stennis, MS on Sept. 12-13, 2016 to develop a robust, sustainable monitoring program based on four core principles -- management drivers, broad community participation, partners with multiple interests, and diverse financial support. Subsequently eight **CHAMP** workgroups formed representing different regions, focal areas, and management concerns. Some 60+ members strong and growing, the workgroups are integrating important assets for a Gulf-wide water quality monitoring program encompassing hypoxia. The eight **CHAMP** workgroups are shown below:



Workgroup descriptions are at: <https://www.ncddc.noaa.gov/activities/healthy-oceans/gulf-hypoxia-stakeholders/workshop-2016/>. For Specific Questions, Contact: Trevor Meckley (Trevor.Meckley@NOAA.gov) or Steven Ashby (sashby@gri.msstate.edu).