



Priorities for Productive Marine Ecosystems

The economic viability of the Gulf Region depends upon a decrease in nutrients entering the Gulf. Low to no oxygen areas can form where nutrients are found in excess and aquatic organisms either perish or are forced to vacate these locations. These 'dead zones' are the result of oxygen exhausting bacteria feeding on an overabundance of dead phytoplankton which grew because of nutrient enrichment. The Nutrients Priority Issue Team is dedicated to determining the level of nutrients in our coastal waters, understanding the impacts of their excess, and utilizing this information to implement reduction strategies.

The *Governors' Action Plan for Healthy and Resilient Coasts* directs the Gulf of Mexico Alliance priority issue teams with specific actions. The Nutrients Team strategies for reducing pollutants in Gulf watersheds will contribute to improving the health of the Gulf of Mexico.



Dr. Jennifer Ufnar,
USM Researcher
Photo courtesy of Lael Butler,
EPA Gulf of Mexico Program

Focus Areas

■ Nutrient Characterization

To understand the complex dynamics of excess nutrients on Gulf ecosystems, the Nutrients Team is working to determine the sources, ecosystem responses, social and economic effects in coastal waters. The team is investigating freshwater and wetland influence on nutrient impacts.

■ Nutrient Criteria Development

Nutrients enter the coastal waters from the river systems that drain 33 states. The Nutrients Team is working throughout the region to support state efforts to identify common state priorities and needs. The Team is providing technical support to facilitate a collaborative approach to establish criteria that are scientifically defensible and protect Gulf of Mexico ecosystems.

■ Nutrient Reduction Strategies

The Nutrient Reduction Team is developing approaches to identify sources of excess nutrients and opportunities to reduce them. Through the use of best management practices and testing of innovative reduction technologies, the Team is discovering strategies that are most effective in improving the health of the Gulf of Mexico from a perspective of nutrient loading.

■ Hypoxia

In excessive quantities, nutrients can lead to problems including hypoxia and anoxia (lack of oxygen in the water). The Nutrients Team is working to better characterize hypoxia and understand its impacts across the Gulf of Mexico. Efforts focus on both the large scale "dead zone" as well as local hypoxic events. Utilizing partnerships, the Team works collaboratively with the "Mississippi River/Gulf of Mexico Watershed Nutrient Task Force" to implement the *Gulf Hypoxia Action Plan*. This plan was developed to reduce, mitigate, and control hypoxia in the Northern Gulf of Mexico.

For a more complete picture of the Alliance visit www.gulfofmexicoalliance.org and download your own copy of the *Governors' Action Plan*!

<http://www.gulfofmexicoalliance.org/issues/nutrients.html>



State-of-the-art field monitoring
equipment in the Ouachita
Basin in Madison Parish, LA
Photo courtesy of Dugan
Sabins, Louisiana Department
of Environmental Quality