

GULF OF MEXICO ALLIANCE APPROACH TO DEVELOPING METHODS FOR ESTABLISHING NUTRIENT CRITERIA

Steven H. Wolfe and Natalie Guedon-Segrest (Mississippi Dept. of Environmental Quality)
Florida Dept. of Environmental Protection
3900 Commonwealth Blvd.
Tallahassee, FL 32399

ABSTRACT

The Gulf of Mexico Alliance (GOMA) was formed by the Governors of the five U.S. Gulf states and is supported by a Federal Working Group consisting of a coalition of 13 federal agencies. GOMA focuses efforts on coastal and ocean issues of both state and regional importance, one of which is the need to establish coastal nutrient criteria.

In order to develop coastal and estuarine nutrient criteria for the Gulf of Mexico, the states would prefer an approach that is based on linkages between the criteria and ecological responses. Toward this end, GOMA has conducted a series of workshops to devise an approach to developing broadly useful tools for establishing criteria. Estuarine and coastal systems found within the U.S. Gulf of Mexico range from the hypersaline lagoons of south Texas to the temperate marsh coast of the northern Gulf to the subtropical mangroves and reefs of south Florida. The Gulf Alliance seeks to gain an understanding of nutrient behavior that is based on those key aspects of nutrient dynamics and effects common to all coastal systems.

To accomplish this, GOMA is considering an initial series of pilot studies using the same core experimental design to be undertaken at approximately four to five coastal systems, each identified as representative of one of the functional extremes. These studies would have four purposes: 1) understand the nutrient dynamics and their link to ecosystem responses for each site being studied; 2) test different ecological endpoints to identify those most suitable for understanding nutrient impacts in the system being studied; 3) test different methods of measuring those ecological endpoints to see which work best in the system being studied; and perhaps most significantly 4) compare nutrient dynamics, ecological endpoints, and measurement methods across the different systems to identify those that perform best across a variety of types of systems.

From this information, the simplest, most cost effective method that can be implemented in coastal waters throughout the Gulf of Mexico will be identified. In addition, the data and information resulting from the pilot studies will be used to develop methods that are specialized for the different types of systems in the Gulf. The approach is to first develop a widely-useable method that can be deployed immediately in priority locations, then develop more specialized and cost-effective methods tailored for particular types of systems.

KEYWORDS

Nutrients, criteria, coastal, Gulf of Mexico, water quality, Gulf of Mexico Alliance.