

Gulf of Mexico Research Planning Workshop Summary
Prepared for the:
Gulf of Mexico Alliance's
Water Quality for Healthy Beaches and Shellfish Beds Priority Issue Team
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Overview of the Gulf of Mexico Research Planning Effort

The purpose of the Gulf of Mexico Research Plan (GMRP) is to 1) identify regional research and information needs and 2) address these needs through collaboration with agencies and organizations that conduct and use Gulf of Mexico-related research. The GMRP is rooted in stakeholder input, and workshops were one of the primary methods used to collect this input. One workshop was held in each of the five Gulf of Mexico states and approximately 300 participants and facilitators representing over 100 organizations, universities and departments of local, state, and federal agencies participated in the workshops. The top ten research priorities from each workshop were linked to one of the GOMA priority issue team areas. This summary describes the top priorities identified at the workshops that most closely align with the Water Quality for Healthy Beaches and Shellfish Beds Priority Issue.

Summary

Workshop participants identified several high priority areas related to water quality (table 1). Research is needed to understand how changing levels of freshwater input impact ecosystems and processes (e.g. benthic communities, trophic interactions, fisheries, coastal habitat, sediment transport) and how coastal development and human manipulation of inflows effect water quality and natural resources. There is also interest in studying how changes in the pattern and quantity of precipitation (as it relates to climate change) will impact the inflow of freshwater, nutrients, and sediments to coastal systems. Work is needed to understand how these changes can effect biological, biogeochemical, and physical coastal processes. Two specific human activities that are high priority research needs are understanding the impacts of sediment management (shallow-water dredging and non-dredging management) on water quality, sediment transport and circulation and researching the environmental and economic impacts of marine aquaculture. Finally, workshop participants identified human health as a high priority. There is a need for predictive modeling of near-shore transport of harmful algae blooms (HAB's) and pathogens and developing rapid field-based tests to detect contaminants, toxins, and organisms in the water. There is also a priority to understand the impacts of water quality, temperature (e.g. relationship between *Vibrio* and water temperature), runoff, mercury, bioaccumulation, and HAB's on the safety of seafood products. Finally, an integrated study is needed to determine the effects of wastewater on water quality and human health and identify the sources of contaminants such as from sewage treatment.

You can find out more about the GMRP at the project's web site at: masgc.org/gmrp or by contacting Steve Sempier, Gulf of Mexico Research Planning Coordinator, at stephen.sempier@usm.edu.

Table 1. Research topics identified at the GMRP workshop that relate to the Water Quality for Healthy Beaches and Shellfish Beds Priority Issue Team.

Topic	Rank at Workshop	State Workshop
Freshwater inputs - effects on ecosystem -Examine what really happens in the field under current building and permitting practices (i.e. current impacts) -Examine/project impacts of reductions on benthic communities, trophic interactions, fisheries, emergent coastal habitats, sediment transport/erosion	2	FL
Impact of human development on water quality, understanding water quality change based on land-use/land cover – utilize observation systems to determine preventative strategies	2	AL
Predictive modeling of near-shore waters for transport of harmful algal blooms/pathogens	2	AL
Seafood safety -Effect of HABs -Effect of bioaccumulation -Change in water quality, temperature, runoff, mercury -Impacts of temperature change and Vibrio	3	TX
Develop rapid field-based standardized tests for detection of contaminants, toxin, and organisms	6	AL
Precipitation: -Change in pattern and quantity (gradient shift) -Fresh water influx/inflow -Inflow of fresh water, nutrients, sediments, and effects it has on biological, biogeo-chemical, and physical coastal processes	6	TX
Research into shallow-water dredging and non-dredging sediment management and impacts on water quality, sediment transport, and circulation	6	MS
Human manipulation of freshwater inflows (amount and timing) impacts on resources (e.g. oysters)	8	MS
Integrated study to determine effects of wastewater to water quality/human health (source of contaminant - especially as it relates to sewage treatment)	8	FL
Research on environmental/economic impacts of marine aquaculture in Gulf of Mexico	8	MS

“Topic” was the raw comment that was presented as a priority at the workshop and voted for by workshop participants.

“Rank at Workshop” is based on the number of votes the topic received at the workshop. A rank of “1” indicated that the topic received the most votes.

“State Workshop” is the workshop where the topic was presented and received votes.