

**Gulf of Mexico Research Planning Workshop Summary**  
**Prepared for the:**  
**Gulf of Mexico Alliance's Coastal Community Resilience 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 Coastal Community Resilience Priority Issue.

Summary

Several resilience related research topics emerged as high priorities at the five workshops (table 1). These can be subdivided into categories such as socioeconomic studies, physical and biological research, and modeling. Research is needed to understand the impacts of climate and sea level change on demographic shifts over time, coastal resilience, infrastructure, and commerce and shipping centers. Studies are needed to measure the public's attitude on sea level rise and local government approaches to addressing sea level rise. Economic research is needed to identify the true costs and benefits of coastal development and this work should consider changes in fish production, recreational opportunities, and community resilience as development occurs. Another priority is to understand and predict how cultures have and will change in response to sea level rise and storm surge. Another priority is to research the physical and biological impacts of sea level rise and storm surge. This includes examining sea level rise and storm surge interactions with saltwater intrusion, ecosystem composition, coastal flooding, agriculture, human health and shoreline change. Another research need is to develop appropriate habitat restoration approaches that account for sea level rise. Workshop participants indicated that work is needed to understand the effects of climate change on population and community dynamics in terms of the emergence and prevalence of pathogens, changing the range and distribution of endemic and invasive species, and organisms' response to changes in temperature, salinity, light, wind, and carbon dioxide. Finally, models are needed to improve storm surge prediction and should include meteorological data, updated land use information, and improved boundary data.

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

Table 1. Research topics identified at the GMRP workshop that relate to the Coastal Community Resilience Priority Issue Team.

Topic	Rank at Workshop	State Workshop
Sea level rise and storm surge interactions Areas of concern: -Salt water intrusion -Cultural change -Change in ecosystems -Change in coastal flooding; improve elevation -Agriculture -Human health -Wetland composition	1	LA
Socioeconomic impacts of climate change and sea level change on: -Population dynamics -Infrastructure (large scale versus individual homes) -Demographic shifts -Coastal resilience -Commerce/shipping centers and needs-changes	1	MS
Rate of sea level rise and subsidence: -Effect of SLR on coastal shorelines & environment -Effects of SLR on ecosystems -Measure public attitude on SLR -Research approaches to restore habitat -Research on local governmental approaches to SLR -Role of development in inhibiting vertical migration	2	TX
Develop model of what a successful resilient community is	4	MS
Economics research of coastal development. True costs, true benefits, including economic modeling of damage to fisheries production, various classes of recreation, and many other aspects of community resiliency	4	FL
What are the effects of climate change on population and community dynamics? -Emergence / prevalence of pathogens -Distribution and range changes -Effects on biology of invasive species -Response of organisms to changing levels of: temperature, salinity, light, winds, carbon dioxide, etc.	6	FL
Development of real time predictive model that includes meteorological data, appropriate land use / land cover and improved boundary data (not just hurricanes)	8	LA
Rates of shoreline change from human and natural impacts	9	AL
Update storm surge modeling and products	10	AL

“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.