Gulf of Maine
Integrated Ecosystem Research Program

Vision

The Gulf of Maine Integrated Ecosystem Research Program (GOMIERP) is a concept currently under development by a growing team of scientists from several agencies and institutions, all with a deep-seated interest in the Gulf of Maine ecosystem.

In the past management actions and planning efforts frequently targeted a single species or issue. However, management agencies have recognized the need to address conservation at the ecosystem scale. Before developing and implementing large-scale management strategies, however, it is crucial to understand the complex inter-relationships among the living members of the ecosystem and their dynamic environment. Our goal in developing the GOMIERP is to address this very need.

This project is being modeled after two ecosystem-scale research programs currently underway in Alaska: the Bering Sea Integrated Ecosystem Research Program and the Gulf of Alaska Integrated Ecosystem Research Program, both funded by the North Pacific Research Board and the National Science Foundation. Expertise from community members, Gulf of Maine biologists, oceanographers, ecosystem modelers and social scientists will guide us in the developing a similar integrated ecosystem plan for the Gulf of Maine.

Photos by Kirk Rogers: http://www.kiroastro.com unless noted otherwise.

The Importance of the Gulf of Maine Ecosystem

The Gulf of Maine is one of the most productive ecosystems in the world, boasting a rich blend of economic, recreational, biological and environmental resources. Because we rely on these resources, we must understand how anthropogenic forces may affect these resources before we can develop proactive conservation and management practices in the Gulf of Maine.

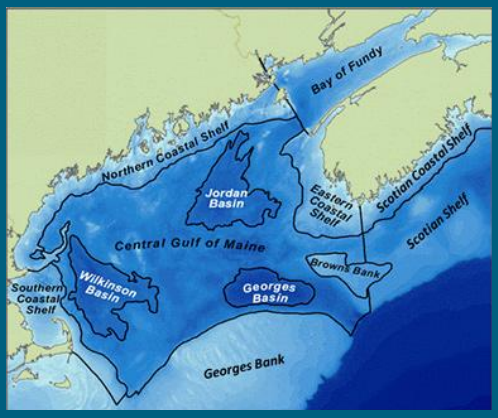
Why Study the Gulf of Maine Ecosystem

The greatest advantage to developing an integrated research program in the Gulf of Maine is that many of the pieces are already in place in the form of ongoing studies. This strength in the research community, spanning from federal agencies to universities to private groups, creates a tremendous opportunity; the success of GOMIERP is not dependent upon initiating a multitude of new studies, but rather upon effectively utilizing ongoing research and filling in gaps in the current study coverage.

We hope to understand the ecosystem dynamics of the Gulf of Maine by researching a variety of organisms representing all of the major trophic levels as well as collecting detailed oceanographic data from their immediate marine environment. Our general objectives are to:

- Gain a better understanding of the processes regulating the flow of energy and the cycling of nutrients in the Gulf of Maine;
- Predict and assess how climate change may alter the dynamics of the Gulf of Maine ecosystem, and therefore the distribution, abundance, and productivity of organisms, through climate-based oceanographic models;
- Provide scientific data collected during integrated studies which will better advise future management decisions concerning both commercially and non-commercially harvested species;
- Assess human dimension components which influence our views and values of the Gulf of Maine ecosystem, and in doing so, further advise management practices; and
- Involve community members and stakeholder groups in the development and implementation of the GOMIERP.

USFWS photo



Gulf of Maine regions overlaid on bathymetry map. Darker blue = deeper water. (Gulf of Maine Census of Marine Life).

Study Components

Potential studies within the research program have been broken into five major categories to better understand the Gulf of Maine ecosystem:

Coastal Shelf and Offshore Studies: Broad-scale surveys
Broad-scale surveys will assess the distribution and abundance of organisms with respect to each other and to physical characteristics of the water column.

Coastal Shelf and Offshore Studies: Monitoring Buoys
Monitoring buoys allow us to expand the spatial and temporal scope in our understanding of the physical properties of the Gulf of Maine waters. These stations collect continuous data on temperature, salinity, density, dissolved oxygen, nitrate, fluorescence, currents and zooplankton abundance throughout the water column, as well as atmospheric conditions such as air temperature, wind speed and direction.

Central Location Studies: Colonial Nesting Seabirds and Marine Mammals
Central location studies will research population parameters such as population size, productivity, adult and young body condition, foraging trip information, diets of adults and young, survival, predator attendance and predator success rates. When coupled with coastal shelf, offshore, and patch dynamics studies, we will be able to tie these parameters to observations made concerning other organisms (i.e potential prey and predators), as well as the physical characteristics of the marine environment.

Patch Dynamics Studies: Prey Hotspots
Patch dynamics studies will investigate the mechanisms that control prey "hotspot" dynamics, and how predator foraging behavior as well as prey quality/quantity influences the reproductive success and survival of apex predators.

Human Dimensions Studies
There are over 10 million people who live in the Gulf Maine region, with concentrations along the coast. The human dimensions studies within GOMIERP will help us better understand the relationship between humans and the Gulf of Maine ecosystem, therefore enhancing the success of any proposed conservation or management actions.

Get Involved

Developing the GOMIERP requires a broad range of scientists and researchers to address the full breadth of study components, and we need your help! Wildlife biologists, fisheries biologists, commercial fisherman, ecologists, oceanographers, climatologists, social scientists, and educators are invited to join us for a collaborators meeting (check website for announcement) to discuss and finalize the objectives and implementation plan for GOMIERP. Please contact us if you are interested in participating.

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For more information, please visit our website www.gomierp.org

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