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The Northern Gulf Institute (NGI) at Stennis Space Center, Mississippi was established in October 2006 and is the newest NOAA Cooperative Institute. The NGI is a consortium of universities led by Mississippi State University, in partnership with the University of Southern Mississippi, Louisiana State University, Florida State University, and Dauphin Island Sea Lab. The fundamental philosophy of the NGI is integration - integration of the land-coast-ocean-atmosphere continuum; integration of research to operations; and integration of individual academic institutional strengths into a holistic research and educational program specifically geared to the needs of Northern Gulf of Mexico users.

NGI research is driven by a basic central premise – that the significant value of Northern Gulf of Mexico social and economic resources, combined with a burgeoning coastal population and the continuing threats of onshore storms and inland flooding, require research results that help decision makers and management agencies better understand the linkages between ecosystems and human societies in order to reduce the vulnerability and enhance resiliency of these linked systems. To this end, the NGI mission specifically includes support for important national and regional initiatives, including the President's Ocean Action Plan, the Gulf of Mexico Alliance, and the Gulf Coastal Ocean Observing System.

The NGI conducts collaborative research with NOAA researchers and other NOAA partners under four scientific themes, focusing on the northern Gulf of Mexico: (1) **Ecosystem Management –** Characterize Northern Gulf of Mexico Coastal Wetland and Fisheries Habitats, including Restoration Strategies; (2) **Geospatial Data Integration and Visualization in Environmental Science** - Develop significant results at the intersection of inland/watershed-coastal waters and resources, with a particular focus on the research, development, prototype testing and transition of scientifically-based geospatial observations, integration and improved access to data, and increased use of effective visualization technology; (3) **Climate Change and Climate Variability Effects on Regional Ecosystems** - Contribute to Northern Gulf of Mexico Climate Assessment and Impact Models; and (4) **Coastal Hazards** - Strengthen the Integration of Watershed, Estuarine and Coastal Models in the Northern Gulf of Mexico.

Specific research activities are planned at a number of scales. The primary focus of these efforts will be in the Northern Gulf of Mexico, from the Sabine River on the west to the Suwanee River on the east. However, a Basin-Scale of interest for the NGI encompasses the entire Gulf of Mexico coastal and ocean region, and conceptually at least extends as far inland as the Mississippi River drainage basin - more than 30 states and 40% of the US landmass. The Basin-Scale of NGI interest links its Northern Gulf of Mexico work and products to the broader bio-physical and institutional context of the entire Gulf of Mexico. The Cooperative Institute builds upon the appropriate cooperative linkages of its members with the Gulf Coastal Ocean Observing System, large scale climate and weather processes (e.g., with NOAA's Lower Mississippi River Forecast Center), and to national and international level concerns with marine transportation, pelagic fisheries, energy development and national defense.

NGI research supports all five of NOAA’s Mission Goals: (1) Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management; (2) Understand climate variability and change to enhance society's ability to plan and respond; (3) Serve society's needs for weather and water information; (4) Support the nation's commerce with information for safe, efficient, and environmentally sound transportation; and (5) Provide critical support for NOAA's mission.