

NGI

NORTHERN GULF INSTITUTE

2007-2012 Strategic Plan

2007-2012 Strategic Plan

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The Northern Gulf Institute A NOAA Cooperative Institute

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Cover: Black Skimmer (*Rynchops niger*) on Ship Island, Mississippi. Photo by Marc Measells, 2007.



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Executive Summary

The Northern Gulf Institute (NGI) is a National Oceanic and Atmospheric Administration (NOAA) Cooperative Institute started in October of 2006. The NGI is a partnership of five academic institutions and NOAA. The collaboration led by Mississippi State University (MSU), includes the University of Southern Mississippi (USM), Louisiana State University (LSU), Florida State University (FSU), and the Dauphin Island Sea Lab (DISL). The NGI defines the Northern Gulf of Mexico region as the upland, watershed, coastal zone, and coastal ocean areas from the Sabine River in Louisiana east to the Suwannee River in Florida.

Mission

NGI conducts high-impact research and education programs in the Northern Gulf of Mexico region focused on integration - integration of the land-coast-ocean-atmosphere continuum; integration of research to operations; and integration of individual organizational strengths into a holistic program. The program shall measurably contribute to the recovery and future health, safety, resilience and productivity of the region, through sustained research and applications in a geospatial and ecosystem context.

Research Themes

The NGI focuses on four research themes that align with NOAA's research and operational focuses. These themes provide a framework for the activities of the institute. The four NGI Research Themes are:

- Ecosystem-based Management
- Geospatial Data/Information and Visualization in Environmental Science
- Climate Change and Climate Variability Effects on Regional Ecosystems
- Coastal Hazards and Resiliency

Goals

1. Develop high-impact regional research programs within the four NGI themes.
2. Develop high-impact regional education and outreach programs within the four NGI themes.
3. Create strategic partnerships with other organizations to enhance northern Gulf regional research and educational efforts.
4. Transition research into new or enhanced products and operations.
5. Communicate NGI research, activities, and opportunities through traditional and non-traditional channels
6. Build and maintain a NGI framework and culture that fosters collaboration and maximizes human potential.

Introduction

The Northern Gulf Institute (NGI) is a National Oceanic and Atmospheric Administration (NOAA) Cooperative Institute developed within the context of the Memorandum of Agreement between Mississippi State University (MSU) and NOAA. The NGI is a partnership of five academic institutions and NOAA. The collaboration led by Mississippi State University (MSU), includes the University of Southern Mississippi (USM), Louisiana State University (LSU), Florida State University (FSU), and the Dauphin Island Sea Lab (DISL).

The NGI defines the Northern Gulf of Mexico region as the upland, watershed, coastal zone, and coastal ocean areas from the Sabine River in Louisiana east to the Suwannee River in Florida. This region is a rich and interdependent natural environment of great complexity vital to the Nation. The riverine-dominated Northern Gulf ecosystems are under pressure from increasing population and coastal development, impacts from severe storms and climate variability, inland watershed and coastal wetlands degradation, and many other factors. This is the geographic focus for the NGI.

The Northern Gulf Institute 2007 – 2012 Strategic Plan outlines the vision and mission and guides the operation of the Institute. The plan lists the distinctive challenges that the NGI faces and details the research themes chosen to focus the research endeavors of the member institutions. As the core element of the plan, the NGI goals are outlined with accompanying strategies and measures of success. The combination of these elements provides a common framework for the NGI partnership. Although the primary audience for this strategic plan is the NGI consortium, stakeholders, and NOAA, it will be available to all interested parties on the NGI web site at www.NorthernGulfInstitute.org.

Background & Authority

Recognizing the need to integrate research and technology to more effectively address the needs of the Northern Gulf of Mexico, NOAA's Office of Oceanic and Atmospheric Research (OAR) issued an Announcement of Federal Funding Opportunity (OAR-CIPO-2006-2000641) on April 26, 2006. NOAA evaluated and awarded the Northern Gulf Institute Cooperative Institute to the team led by Mississippi State University on October 1, 2006. The award is for a five-year term in the Cooperative Institute Program furthering regional and national interests in the Northern Gulf of Mexico.

The strategic plan outlined here is consistent with and expands upon the Memorandum of Agreement between MSU and NOAA, the NOAA notice of award to MSU of October 1, 2006, NOAA's review of MSU administrative and grants processes, and the NOAA Cooperative Institute Interim Handbook. NGI's approach to Northern Gulf Regional issues, problems and opportunities is closely aligned with NOAA's strategic and research priorities. The NGI is also guided in its mission by a number of sources, the White House's Ocean Action Plan and the 2004 coordinated and comprehensive report of the congressional U.S. Commission on Ocean Policy, the Gulf of Mexico Alliance, and others. The result is an approach that is science driven, regionally focused, and coordinated with other Gulf of Mexico Basin activities.

Vision

NGI will be a regional leader providing integrative research and education to improve the resiliency and conservation of the Northern Gulf of Mexico.

Mission

NGI conducts high-impact research and education programs in the Northern Gulf of Mexico region focused on integration - integration of the land-coast-ocean-atmosphere continuum; integration of research to operations; and integration of individual organizational strengths into a holistic program. The program shall measurably contribute to the recovery and future health, safety, resilience and productivity of the region, through sustained research and applications in a geospatial and ecosystem context.

Core Values

Leadership – We provide guidance and inspiration through research, education, information, and outreach with our stakeholders.

Excellence – We expect and reward excellence in our programs, in our organization, and in our people. We will encourage and develop excellence among our strategic partners and associates. We strive for excellence in all we do.

Collaboration – We are inclusive and collaborative in our research and outreach programs, enhancing our capability to respond to the needs of the Northern Gulf of Mexico region and our stakeholders.

Professionalism – We work with expertise, commitment, and diligence. We set and maintain the highest ethical and professional standards for ourselves and our programs.

Responsiveness – We are stakeholder-driven and constantly alert to the needs of the Northern Gulf of Mexico region.



Photo by Marc Measells, 2007.

Distinctive NGI Challenges

The NGI is committed to high-quality research, technology, education and outreach programs responsive to the needs of the Northern Gulf of Mexico region. The NGI faces several distinctive challenges in creating a successful response to regional needs. These challenges will strongly influence the NGI's programmatic efforts throughout its first five-year award period. The distinctive challenges are:

Regional Focus

Build an effective research and technical coordination and collaboration program (based on defined regional priorities) among five academic institutions, NOAA (both national and regional), other government agencies, non-governmental organizations, and the recovering communities of the Northern Gulf of Mexico region. A vital element of NGI is institution- and community-building through collaboration and effectively coordinating its efforts and results with local-to-national organizations. A significant challenge to program building is to develop and deliver regional solutions—to harness effectively the confluence of geographic, ecological, social-demographic, weather, climate and other attributes that characterize the Northern Gulf.

Awareness

Focus outreach, research, development, training and education on filling gaps or reducing limitations in Northern Gulf awareness, interest, understanding, acceptance and assimilation of scientific and technical results. A successful NGI program will contribute to each level of regional need from improved awareness of problems, needs and solutions through expanding interest in tackling ecosystem-based issues, to improved lay and scientific understanding of the Northern Gulf.

Integration

Promote and expand scientific, technical and systems integration as a guiding principle for the NGI, i.e., integration of upland, waterway, coastal and coastal ocean processes, integration of scientific and technical disciplines and institutions, integration of physical and biological sciences and social science data, and harvesting value from integrating NOAA and NGI strengths and resources.

Collaboration

Develop an agency-wide collaboration with NOAA. Provide access for NOAA and NOAA-led projects to the academic and technology assets of NGI through a NGI Executive Office, a Stennis Space Center NGI Program Office, and to and through all NGI member institutions. At the same time, provide opportunities for undergraduate, graduate, visiting scholar and Intergovernmental Personnel Act postings at all collaborating NGI institutions and locations.

Continuous Improvement

Sustain a commitment to continuous adaptation and improvement based upon rigorous project and program monitoring and evaluation, internal and external reporting and reviews and, whenever possible, the transition of NGI results to support decisions. For NGI, evaluation is a continuing priority promoted by leadership attention, integration of evaluation into project management, and adequate investment of evaluation resources.

Partnership

Leverage NOAA support of NGI by fostering collaboration within and among the NGI institutions, with NOAA Line and Research Offices, with other government organizations, and the private sector—by seeking outside NGI funding and resource sharing. Successful leverage will, among other benefits, support NOAA's recent emphasis on fostering regional collaboration activities (see, e.g., www.ppi.noaa.gov/regional_collaboration)

NGI Implementation Plan

The NGI Implementation Plan outlines the policy, program, and operational procedures of the NGI. It details the relationship with NOAA's CI Program and participating NOAA offices and includes the institute's review schedules, advisory bodies, and working-level arrangements. This plan is available at the NGI homepage (www.NorthernGulfInstitute.org)

Research Themes

The NGI's Research Themes follow and amplify the four themes presented in the NOAA Announcement of Opportunity, from which the NGI was created. As the NGI moves ahead on implementation it is important to reiterate and present several additional thematic guideposts. First, an ecosystem-based approach to research and transition will pervade the NGI program. Second, geospatial technology and applications are the important "glue" that connects the four NGI Themes and the NGI's wider regional communities. Consistent with the ecosystem-based foundation of the program, geospatial research and products are guided by ecosystem principles, definitions and approaches. Third, climate effects are studied primarily from a regional perspective and in conjunction with ecosystem-based theory, observations and monitoring schemes. The final research theme is coastal hazards and resiliency. Both climate effects and hazard/resilience issues will incorporate social and economic elements and research endeavors. The following NGI Themes and priorities are drawn from the NGI proposal and will guide specific project implementation requirements.

Ecosystem-based Management

...enhance understanding of the interconnections between the marine ecosystem and the adjacent watersheds (Announcement of Opportunity)

... establish nutrient criteria for coastal waters, tools to better understand the relationship between watershed land uses and the resulting nutrient loading problem in coastal waters (Gulf of Mexico Alliance)

Identify gaps in habitat information, including as a first step high resolution bathymetry, data sharing, regional habitat strategies (Gulf of Mexico Alliance)

Examine the role of humans as an integral part of an ecosystem (NOAA 2006-2011 Strategic Plan)

Expanding environmental education to improve stewardship (Gulf of Mexico Alliance).

Develop forecasts to predict ecological and socioeconomic impacts (Announcement of Opportunity).

Geospatial Data/Information and Visualization in Environmental Science

Focus on data integration techniques and geospatial technologies, decision support tools that enable improved regional ecosystem policy, management and forecasting (Announcement of Opportunity)

Climate Change and Climate Variability Effects on Regional Ecosystems

Focus climate change and climate variability effects upon marine ecosystems and the socio-economic well being of the region and adjacent watersheds (Announcement of Opportunity)

Take advantage of remote sensing technologies such as aerial photography, LIDAR, tide and water level gages, and land elevation benchmark stations [to] assist the Gulf Coast states to scientifically address their wetland restoration efforts (Alliance White Paper).

Predicting and mitigating against coastal hazards. (GCOOS)

Interdisciplinary research designed to help regions respond to climate challenges (Announcement of Opportunity).

Coastal Hazards and Resiliency

Research in this Theme encompasses the physical and biological systems as well as, the socio-economic dimensions associated with coastal hazards (Announcement of Opportunity)

...initiate collaborative efforts...to address eutrophication, elevated bacteria levels, harmful algal blooms, hypoxia, and toxic contamination of fish and wildlife. (Gulf of Mexico Alliance)

Emphasize coastal hazards impacts on coastal habitats of the Northern Gulf of Mexico based on weather, water quality, and impacts on human health and recreational uses of the coastal environment (Gulf of Mexico Alliance)

Research oceanographic current models to identify and help where marine debris accumulates on the surface and sea floor (Announcement of Opportunity).

Goals and Strategies

GOAL 1: Develop high-impact regional research programs within the four NGI themes.

Strategies:

- Develop Annual Science Plans that identify core regional issues framed by the four NGI themes that will guide allocation of research funding.
- Establish and implement funding criteria to emphasize multi-organizational collaboration of projects.
- Establish and implement funding criteria to emphasize regional impact of projects.

Objectives:

- NGI Science Plan developed and adopted by Research Fellows and accepted by NOAA.
- NGI Science Plan reviewed/modified annually and adopted by Research Fellows and accepted by NOAA.
- Over the three to five year period, produce a major research finding in each of four themes
- All funded projects will be multi-organizational collaborations.
- All projects will include an assessment of regional impacts, transferability, and potential to increase in scope.

GOAL 2: Develop high-impact regional education and outreach programs within the four NGI themes.

Strategies:

- Adopt and implement funding criteria to emphasize student involvement in projects.
- Involve students in the NOAA and Minority Fellowship programs.
- Develop funding criteria to emphasize outreach activities for each project.
- Conduct major regional outreach activities aligned with development and implementation of the NGI Science Plan.
- Conduct speaker series, workshops and develop training collaborations for core regional issues framed by the four NGI themes.

Objectives:

- All funded projects will involve students.
- Over the three to five year period,
 - 150 students will be funded by NGI
 - 20 NGI students hired into NOAA
 - 25 NOAA Minority Fellowships awarded
 - 25 NOAA Internships awarded
- All funded projects will include an outreach component or activity.

- Over the three to five year period,
 - At least one major outreach activity will be produced in each of the four theme areas.
 - 9 to 15 talks will be sponsored.
 - 9 to 15 workshops will be conducted.
 - 6 to 10 training collaborations will be established.
 - 600 people will have participated in workshops and collaborative training events.

GOAL 3: Create strategic partnerships with other organizations to enhance northern Gulf regional research and educational efforts.

Strategies:

- Utilize the NGI Advisory Council composed of stakeholder organizations to provide strategic guidance to NGI and help create a vital regional community.
- Establish formal relationships with Gulf of Mexico Alliance and the SeaGrant programs of Alabama/Mississippi, Florida, and Louisiana.
- Create formal and informal strategic relationships with other organizations to address NGI's core regional issues framed by the four themes.

Objectives:

- Bi-annual meetings of NGI Advisory Council.
- Establish a formal tie to the Gulf of Mexico Alliance
- Establish formal ties with the SeaGrant programs of Alabama/Mississippi, Florida, and Louisiana.
- Over the three to five year period,
 - 20 strategic relationships will be established.
 - 10 to 12 other funding sources will be established from within the strategic relationships.
 - \$15 million in additional funding will be developed.
 - 160 scientists will supported through the NGI-CI.

GOAL 4: Transition research into new or enhanced products and operations.

Strategies:

- Develop research transitions aligned with development and implementation of the NGI Science Plan.
- Establish and implement funding criteria to emphasize transition activities for each relevant project.
- Establish and implement funding allocation to develop research transition projects.

Objectives:

- Over the three to five year period, produce four major research transitions within the 4 theme areas.
 - All funded projects will include a plan for transition into use.
 - Over the three to five year period, fund 5 transition projects.

GOAL 5: Communicate NGI research, activities, and opportunities through traditional and non-traditional channels.

Strategies:

- Hold an annual conference of all NGI Principal Investigators
- Support quarterly meetings of Research Fellows
- Participate in the Cooperative Institutes Annual Meeting
- Develop the NGI Website to effectively communicate the program's messages, focusing on timely dissemination of information and completeness of the content,
- Develop the NGIgram to share critical information among strategic partners.

- Initiate and encourage coverage of NGI activities and research in the Northern Gulf region media.
- Establish and implement evaluation criteria to encourage publication and dissemination of research results.

Objectives:

- Conduct Annual NGI Research Conference
- Conduct quarterly meetings of Research Fellows
- Attend annual Cooperative Institutes Directors & Financial Administrators Meeting.
- Create NGI-CI website and populate with pertinent NGI documents and research program information.
- Prepare and disseminate 12 NGIgrams per year.
- Over the three to five year period, outreach activities of the NGI will result in:
 - 30 Press releases
 - 30 Newspaper articles.
 - 8 Television news stories.
 - 50 mentions in media.
- Over the three to five year period, research activities of the NGI will produce:
 - 75 refereed articles.
 - 300 non-refereed articles and research reports.
 - 150 professional conference presentations/posters.

GOAL 6: Build and maintain a NGI framework and culture that fosters collaboration and maximizes human potential.

Strategies:

- Utilize meetings to foster NGI identity and collegiality.
- Develop research infrastructure to facilitate research activities
- Maintain transparency in NGI activities and administration
- Establish mechanisms to encourage and recognize the participation of young researchers and students.
- Establish mechanisms to encourage and reward innovation and excellence.

Objectives:

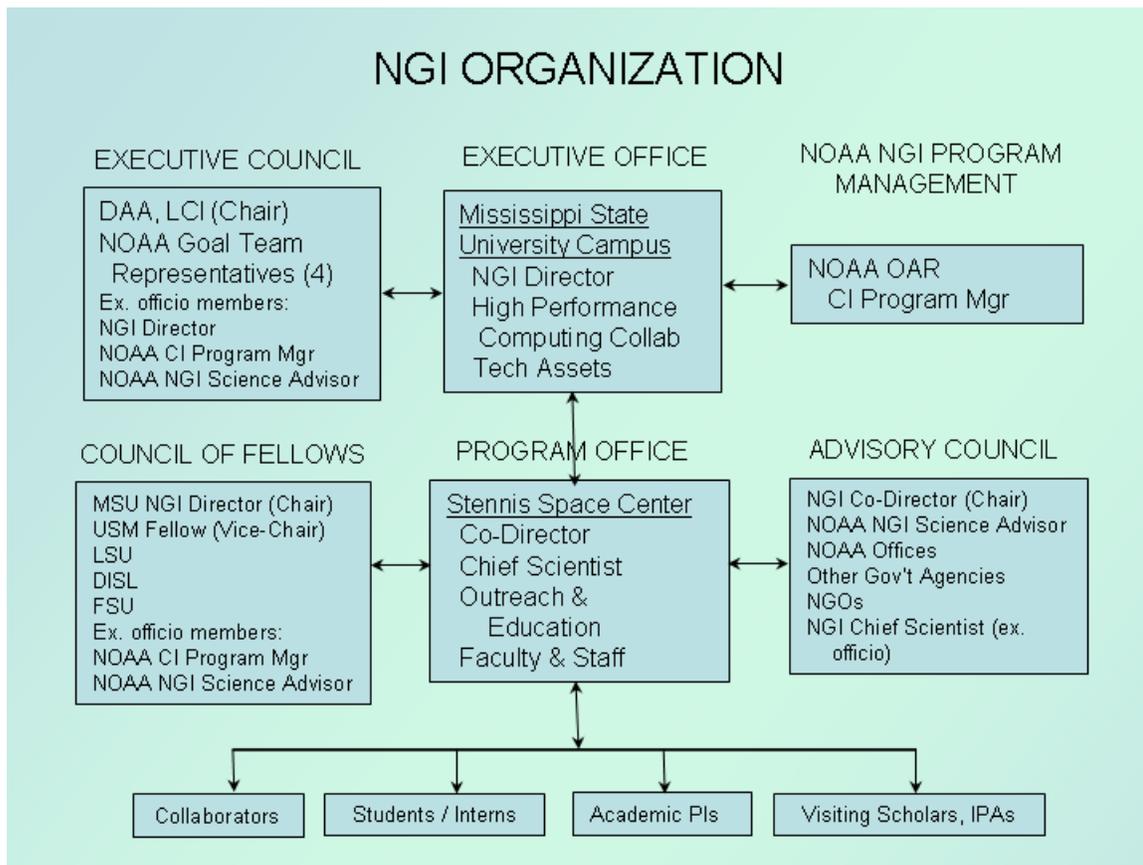
- Over the three to five year period,
 - Host 30 NGI meetings.
 - 750 attendees at the NGI meetings.
- Annually review and update:
 - the NGI Strategic Plan
 - the NGI Science Plan
 - the NGI Implementation Plan
 - the NGI Web Page
- Over the three to five year period, 10-15 externally funded projects will managed within NGI
- Over the three to five year period,
 - 5 Students will receive NGI Awards/Honors
 - 5 Researchers will receive NGI Awards/Honors
 - 15 Nominations for award
 - 25 NGI Student Internships will be awarded

Organization and Management

The NGI's Executive Office is located at Mississippi State University in Starkville, MS. The Program Office is located at Stennis Space Center on the Gulf Coast of Mississippi, facilitating collaboration with NOAA's Stennis Space Center offices (National Coastal Data Development Center, National Data Buoy Center, National Marine Fisheries Service, and Gulf Coast Services Center, etc.), NOAA's NGI Science Advisor, the Naval Research Laboratory, NASA Stennis Applied Sciences, EPA Gulf of Mexico Program, and other resident federal agencies. The five NGI collaborating academic institutions' facilities host the NGI's research, education, and transition program activities.

The Council of Fellows, acting as the Board of Directors of the Institute, is headed by the Director of the Institute and has one member assigned from each of the five universities and NOAA. NGI also depends on its Advisory Council, a group of government and NGO stakeholder representatives, to review NGI research and outreach projects, make recommendations concerning additional projects and to advise the Council of Fellows. The Strategic Plan and Implementation Plan are developed with advice and consent of the Council of Fellows. Changes to the Strategic Plan are initiated upon suggestion of any member of the Council of Fellows and adopted by a majority of the Fellows.

NGI will be managed pursuant to provisions in the NGI Implementation Plan which can be found online at www.NorthernGulfInstitute.org. The organization chart from this Implementation Plan is shown below.



Changes

Any member of the Council of Fellows can propose an amendment to this plan. The proposed change will be submitted in writing to the full Council. The final form will be voted on at the next meeting (telephonic or in person) of the Council. A majority vote (at least 3 of the members) is required to amend the plan.

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