

MIT Sea Grant Implementation Plan 2009-2013

FOCUS AREA: HEALTHY COASTAL ECOSYSTEMS

GOAL	STRATEGY	SHORT/MID-TERM OUTCOMES
<p>HCE 1: Develop scientific information to support ecosystem-based approaches to managing the coastal environment.</p>	<p>HCE 1.1: Conduct research on ecosystem processes, the relationships between coastal stressors – water quality degradation, contaminants, harmful algal blooms, invasive species – and long term-term human and ecosystem health, and communicate this information to public and private planners, decision-makers and managers.</p> <p>HCE 1.2: Contribute to the development of field-tested instruments, platforms, manipulators and underwater communications capabilities for collecting data in a reliable and cost-effective manner. Contribute to the development of baseline data, standards, and indicators to support ecosystem-based approaches to land use, water quality, fisheries and resource management.</p> <p>HCE 1.3: Develop methodologies that can be used to evaluate ecosystem-based management approaches to assess their effectiveness once they are in place, and to guide future management efforts, working with the National Marine Fisheries Service and other federal, state and local partners.</p>	<p>HCE1.a : Contribute toward development of the scientific underpinnings of an ecosystem-based approach to resource management.</p> <p>HCE 1.b: Instrumentation needed to collect baseline data, develop standards and indicators to support an ecosystem-based approach to resource management.</p> <p>HCE 1.c: Methodologies are developed and used to evaluate ecosystem-based management approaches and guide future management efforts.</p>
<p>HCE 2: Widespread use of ecosystem-based approaches to managing land, water and living resources in coastal areas.</p>	<p>HCE 2.1: Work with partners within and outside of NOAA to collect data, and develop models and training activities that support ecosystem-based planning and management approaches, and share these with a broad cross-section of stakeholders</p> <p>HCE 2.2: Support the development of regional coastal observation systems, infrastructure, and engage in other collaborative efforts that advance our ability to predict the effects of human activities, including invasive species and environmental changes, on coastal resources in order to mitigate their effects</p> <p>HCE 2.3: Provide learning programs for people of all ages to enhance understanding of coastal and ocean environments and promote stewardship of healthy ecosystems through our Advisory and Education section</p>	<p>HCE 2.a: Constituencies have access to data, models and training that support ecosystem-based planning and management approaches.</p> <p>HCE 2.b: Coastal residents, resource managers, businesses, and industries are able to predict the effects of human activities and environmental changes on coastal resources.</p> <p>HCE 2.c: People of all ages understand coastal and ocean environments and the need for stewardship of healthy ecosystems.</p>
<p>HCE 3: Arrest and reverse the degradation of ecosystems from the spread of non-native marine species.</p>	<p>HCE 3.1: Support research to identify causes of degradation by non-native, marine species in the Georges Bank ecosystem.</p> <p>HCE 3.2: Develop and disseminate new information, policies, technologies, and methods to address water quality degradation, prevent the introduction and spread of marine non-native species, and minimize the negative impacts of these on coastal, ocean and Georges Bank ecosystems.</p> <p>HCE 3.3: Provide technical information to citizens and businesses that need help with specific mitigation problems, giving them access to the latest information and techniques.</p>	<p>HCE 3.a: Coastal residents, resource managers, businesses, and industries have access to new approaches and technologies that can effectively arrest the degradation of the Georges Bank ecosystem.</p> <p>HCE 3.b: Coastal residents, resource managers, businesses, and industries understand the causes and consequences of the degraded ecosystems on Georges Bank.</p> <p>HCE 3.c: Managers draw on both scientific information and the public to set realistic restoration goals for an ecosystem degraded by non-native species invasion.</p>

Long-Term Outcomes:

HCE-L1: Coastal residents, resource managers, businesses, and industries have access to sound scientific information to support ecosystem-based approaches to managing the coastal environment and ameliorate the state of degraded ecosystems. The ecosystem selected is Georges Bank, and the ecosystem degradation issue addressed is non-native, invasive species.

HCE-L2: Managers have the know-how to undertake restoration projects, do so, and evaluate and adapt as needed.

HCE-L3: Ecosystem degradation is arrested and reversed.

Performance Measures:

HCE-P1: Develop and implement a working regional communications and participation network to obtain input on ecosystem degradation by non-native species on Georges Bank.

HCE-P2: Develop and implement a working regional communication network of managers and stakeholders to be involved in the implementation of ecosystem management system.

HCE-P3: Database of baseline data on area non-native species, created and initially maintained by MIT Sea Grant.

FOCUS AREA: SUSTAINABLE COASTAL DEVELOPMENT		
GOAL	STRATEGY	SHORT/MID-TERM OUTCOMES
<p>SCD1: Support the development of marine commercial activities to include local and national companies, and working waterfronts with an appropriate balance of recreational opportunities.</p>	<p>SCD1.1: Support research and outreach activities that support marine-related activities such as commercial fishing, aquaculture, robotic interventions, and energy development without diminishing the long-term health of the natural environment.</p> <p>SCD1.2: Use Sea Grant staff and researchers to help the community identify and pursue sustainable economic policies and programs.</p>	<p>SCD1.a: Develop technical and related know-how to foster the development of marine commercial activities.</p> <p>SCD1.b: Provide community leaders with needed tools to enable them to pursue sustainable economic development policies and programs.</p>
<p>SCD2: Coastal communities that make proper use of ocean resources to sustain coastal ecosystems and quality of life.</p>	<p>SCD2.1: Contribute to the development of an integrated ocean circulation model for the Gulf of Maine for use by the scientific community in coastal zone monitoring, fisheries management, pollution control and similar applications.</p> <p>SCD2.2: Develop methodologies to determine the optimum spatio-temporal distribution of observation points for initialization and data collection to support ocean forecasting.</p> <p>SCD2.3: Provide technical support for citizens and business, federal and state partners who need access to state-of-the-art ocean circulation models.</p>	<p>SCD2.a: Coastal communities have access to data and models to predict the capacities of their ecosystems.</p> <p>SCD2.b: Coastal communities develop a plan to cost-effectively collect and share data needed to support a reliable ocean forecasting system.</p>

Long-Term Outcomes:

SCD-L1: At least one of the MITSG-fostered research activities yields results that are commercially viable.

SCD-L2: Alternative energy technology (wave, thermal, current, wind, solar) are evaluated for their environmental and economic impacts.

Performance Measures:

SCD-P1: Economic benefits derived from sustainable coastal policies and practices as a result of Sea Grant activities.

FOCUS AREA: SAFE & SUSTAINABLE SEAFOOD SUPPLY

GOAL	STRATEGY	SHORT/MID-TERM OUTCOMES
<p>SSST1: A sustainable supply of safe seafood that meets public demand at affordable prices</p>	<p>SSST 1.1: Use Sea Grant’s research, extension, education, and communication capabilities to develop and disseminate essential knowledge about natural and human threats to the long-term viability of wild fish populations, to identify ways to minimize these threats, and to use ecosystem-based fisheries management and other innovative approaches to accomplish this</p> <p>SSST 1.2: Conduct integrated research, education, and outreach activities to support a viable domestic aquaculture industry with acceptable environmental impacts, in ways that are consistent with national objectives, building on the leadership role Sea Grant plays in this area</p> <p>SSST 1.3: Work with NOAA’s National Marine Fisheries Program, other federal and state partners, and the seafood industry to enhance the management and productivity of wild fisheries in collaboration with the Northeast Sea Grant Programs’ advisory and extension personnel.</p>	<p>SSST 1.a: Natural and human threats to the long-term viability of wild fish populations are minimized.</p> <p>SSST 1.b: A viable domestic aquaculture industry with acceptable environmental impacts is supported.</p>
<p>SSST2: Informed consumers who understand the importance of ecosystem health and sustainable harvesting practices to the future of our domestic fisheries.</p>	<p>SSST 2.1: Enhance training, technical assistance, and outreach programs related to the application of standards for minimizing release of live seafood and unregulated introduction of potential invasive species</p>	<p>SSST 3.a: Information portals are available on seafood safety, nutrition, and sustainability.</p> <p>SST 3.b: Local seafood consumers have an increased knowledge of the nutritional benefits of seafood products, know how to judge seafood safety and quality, and can apply this knowledge to make better choices when they purchase seafood.</p>

Long-Term Outcomes:

SSST-L1: The local seafood industry harvests and produces seafood responsibly and efficiently.

SSST-L2: The seafood supply is sustainable and safe.

SSST-L3: Consumers make choices in seafood purchases that support safe, valuable and sustainable seafood industries.

Performance Measures:

SSST-P1: Develop and implement a working regional communications and participation network to obtain input on the safety and sustainability of the seafood supply.

SSST-P2: Develop and implement a working regional communication network of managers and stakeholders to be involved in implementing measures to ensure the safety and sustainability of the seafood supply.

FOCUS AREA: HAZARD RESILIENCE IN COASTAL COMMUNITIES

GOAL	STRATEGY	SHORT/MID-TERM OUTCOMES
<p>HRCC1: Understanding of the risks to coastlines associated with climate change</p>	<p>HRCC1.1: Conduct research in deep-water corals to understand patterns of past climate changes and use this information to forecast the effects of global warming</p> <p>HRCC1.2: Organize a national symposium to share the findings of the research, particularly as it affects global warming and climate change</p> <p>HRCC1.3: Work with the NOAA Climate Change Program and other public and private sector partners to develop comprehensive education/literacy programs focused on the immediate and long-term effects of climate-related changes</p>	<p>HRCC1.a: Continue toward development of scientific knowledge of global warming.</p> <p>HRCC1.b: Instrumentation needed to collect baseline data and indicators to support predictions of global warming.</p> <p>HRCC1.c: Decision makers are aware of existing and available data and resources to predict consequences of global warming.</p>

Long-Term Outcomes:

HRCC-L1: Residents and decision-makers are aware of and understand processes that produce coastal hazards and of the implications of these risks.

Performance Measures:

HRCC-P1: Representative decision-makers and stakeholders working to develop hazard mitigation tools, techniques and best practices.