

Florida Sea Grant College Program

Strategic Plan 2009-2013

Science Serving Florida's Coast



Introduction

Florida Sea Grant's Strategic Plan for 2009 to 2013 reflects the input of hundreds of Floridians, representing academia, government, industry and citizens. It addresses issues that are important to Florida, the nation and the world. The plan defines Florida Sea Grant's role and strategies for addressing critical coastal and marine issues in the framework of four programmatic focus areas – *healthy coastal and marine ecosystems; sustainable and hazard resilient coastal communities; seafood production and safety; and climate change: impacts and adaptations*. It also identifies three cross-cutting themes: *provide sound scientific information; develop an informed citizenry that understands the value and vulnerability of coastal and marine resources; and support a decision-making process that involves the full range of coastal interests*. As such, the plan aligns thematically with focus areas and goals set forth in the strategic plan of the National Sea Grant College Program.

The programmatic focus areas and their associated goals and strategies were developed through a year-long process that included an issues survey completed by members of regional advisory committees and Florida residents, and a two-day workshop in Florida attended by more than 80 educators, university and agency scientists, resource managers, extension specialists and representatives from the private sector. This plan considers Sea Grant's future role in Florida in coordination with the Florida Oceans and Coastal Council, the Governor's Action Team on Energy and Climate Change, the Gulf of Mexico Alliance, and the National Ocean and Atmospheric Administration (NOAA) Gulf of Mexico and South Atlantic regional research planning projects. Finally, the plan reflects Florida Sea Grant's partnership with the University of Florida Institute of Food and Agricultural Sciences (IFAS), allowing an integrative consideration of the land-water interface when conducting research, education and extension programs.

Florida Sea Grant's Vision and Mission

Florida Sea Grant envisions a future where people use our coastal and marine resources in ways that capture the economic and social benefits they offer, while preserving their quality and abundance for future generations.

Florida Sea Grant's mission is to support integrated research, education, communication and extension, to enhance the practical use and conservation of coastal and marine resources to create a sustainable economy and environment.

Program Structure and Approach

Florida Sea Grant operates through a university-based research, education and extension partnership with state and federal agencies, businesses and citizens. This partnership involving Florida university faculty and the public was established nationally in 1966 with the passage of federal legislation that created the National Sea Grant College Program. The U.S. Secretary of Commerce designated the State University System (SUS) of Florida as a Sea Grant College in 1976 and the program is hosted by the University of Florida (UF). The management team is housed at UF and the coordination of activities among the 16 participating universities and laboratories is facilitated by Campus Coordinators, who are appointed by the presidents of their respective institutions. Extension and communication programs are conducted in cooperation with the Florida Cooperative Extension Service (FCES) at UF. Research is supported by a NOAA grants program where funding to faculty at participating institutions is determined through a rigorous peer-review process. Collectively the faculty across the SUS campuses includes over 300 scientists and engineers with expertise in all areas of coastal and ocean science. Cooperative Extension builds on this network with marine extension agents in 35 coastal counties and expands it beyond the state's borders and even into international arenas. No other academic program or university in Florida has this breadth and depth of focus on statewide marine and coastal issues.

Using research, education, communication and extension to address complex coastal and marine issues and societal needs requires a strategic approach, tools and techniques tailored to solve specific problems. One problem may require a substantial research effort while another may need the transfer of existing information through education and outreach. The solution to other problems may require networking with agencies, industries or communities to bring people together in a common activity. Florida Sea Grant has a demonstrated track record of success in designing the best possible approach to resolving the issues that arise when a growing human population intersects with the state's coastal environment. This plan builds on that track record and, with the input of program partners and stakeholders, provides strategic approaches for targeting the scope of services that Florida Sea Grant can bring to bear on critical issues.

Core Principles

Every Florida Sea Grant activity is based on a strong rationale, demonstrates scientific or educational merit and produces results that are useful to citizens and applicable in industry, management or science. Six core principles allow Florida Sea Grant to deliver results based on these criteria.

Excellence. Research is funded on a competitive basis, with scientific merit as a major criterion. Extension programs are based on reviewed faculty plans of work. Communication efforts use the latest technology and methods to achieve maximum impact, visibility and citizen receipt of science-based information generated by researchers and extension specialists.

Relevance. Research, extension and education activities are aligned with goals and strategic priorities identified in consultation with our program partners and stakeholders, and with priorities of the NOAA National Sea Grant College Program.

Participation. High value is placed on the involvement of stakeholders, industries, citizens and a large number of participating institutions in research, education and extension. Graduate students are actively engaged in research funded by Florida Sea Grant, and a diverse faculty is involved, from assistant to full professors.

Accountability. External and internal processes are used to measure program accomplishments. These include identifying the contribution to society of scientific discoveries, measuring how citizens respond to education and outreach programs with increased knowledge or through changes in behavior, and determining the economic impact resulting from Sea Grant-supported projects.

Connection with Users. A multi-level advisory process is used to guide overall program direction, to plan extension programs, and to gauge program impacts.

Partnerships. Faculty, staff, students and citizens all benefit when working in a partnership mode. Scientific results and education projects reach greater levels of success when they are implemented with partners, from agencies to businesses. Greater emphasis is placed on creating public-private and agency partnerships under this new strategic plan.

Florida's Coastal Wealth

For Florida's 18 million residents and nearly 80 million annual visitors, the coast and its resources are a major attraction and a vital part of their daily environment. Nowhere in the United States are so many people in close proximity to such an extensive and economically valuable coastline. Florida's population in the "coastal corridor," the 35 counties that touch the ocean, is over 14 million and expected to exceed 20 million by 2025. The coastal corridor accounts for 79 percent of the state's economic output, jobs and value-added income. Florida's annual ocean-related economy is estimated at \$25 billion dollars and

its shoreline coastal economy exceeds \$550 billion. A visit to Florida's coast reveals incomparable natural beauty. It also reveals a set of resources for which intense competition exists. Recreational and commercial fisheries, recreational beach activities, boating, marinas, marine industries, unique ecosystems, productive wetlands, urban and rural development and the amenity-based economic and social lives of our coastal communities all combine to place Florida's coastal development and resource protection in a fragile balance. Working together, all Floridians must find a socially acceptable way to satisfy the demand for the coastal and marine resources while also ensuring their sustainability.

Forces of Change

Increasing populations along the coast, increasing dependence on coastal waters for food, employment and recreation, and a host of other socio-economic changes make Florida Sea Grant's role in advancing the understanding and sustainable use of coastal resources more critical. Looking ahead, population increases will continue to tax the efforts of coastal planners and community leaders. Hurricanes and other natural disasters will continue to impact our natural and built coastal environment, and climate-related changes including sea-level rise will create long-term stress requiring purposeful and strategic adaptations. Florida Sea Grant, with its partner institutions, will continue to be a leader in addressing the anticipated economic and environmental impacts on the coastal and marine environment through science-based research, education and extension.

Responding with Research and Education

Florida Sea Grant responds to these forces of change to help Florida sustain its coastal and marine economic prosperity and protect and enhance the quality of its coastal and marine ecosystems.

The pressures, wants, needs and dollars represented by the huge number of people who use Florida's coastal resources all combine to make understanding and managing one of the most fragile environments on earth a difficult and often controversial undertaking. Florida Sea Grant has a vital role to fill in this complex endeavor. Through Sea Grant research efforts, the transfer of information via the Sea Grant Extension Program, and the outreach provided by Sea Grant communication and education efforts, Floridians and tourists can better understand the state's unique environment and what they can do to become more effective stewards. Sea Grant programming is intended to help meet the critical challenge to rationally manage continued growth in the coastal zone and equitably address the ever-increasing demand and competition for coastal resources. Florida Sea Grant has assumed a leadership role in the creation of a better-informed public that recognizes the need for actions to ensure that Florida continues to be one of the nation's best places to live.

The forces of change and their impacts to our coasts and economies compel Florida Sea Grant to:

- strengthen its position as Florida's primary state-wide university research, education and extension program in support of coastal use and sustainable management;
- assume a leadership role in helping Florida address critical issues including the responsible management and protection of coastal ecosystems, the preservation of public access to ocean and coastal waters, the protection of seafood availability and safety, development of

sustainable and hazard-resilient coastal communities and economies, and the widespread understanding of climate-related changes and necessary societal adaptations;

- provide a federal-state-local network that integrates research, education and extension to create practical solutions to real problems that strengthen Florida's capacity to deal with the most critical coastal and marine issues; and
- increase the coordination of resources brought to bear on coastal issues over the next decade through strategic partnerships of Florida Sea Grant with agencies, non-governmental organizations (NGOs) and the private sector.

Programmatic Focus Areas

Florida Sea Grant will direct its resources in four focus areas in order to address the most critical issues affecting Florida's coastal environment and economies, and to align with National Sea Grant strategic planning initiatives. Strategies identified within the four focus areas address goals that were determined to be most important by Florida's faculty, its government agencies, its industries and its citizens.

Healthy Coastal and Marine Ecosystems

Healthy ecosystems are the foundation for the quality of life and economy of Florida's coastal communities. Ecosystem health and sustainability will determine the future of the state's recreational and commercial fisheries, recreational boating and diving, beach-related recreation, tourism, nature observation and a myriad of other natural and societal values. However, increasingly rapid coastal development, overfishing, and other human activities are leading to congestion, water quality degradation, declines in fish stocks, shoreline erosion and loss of critical habitat – thereby threatening the sustainability of the coast and ultimately the quality of life of Florida citizens. Florida Sea Grant will play a leadership role in providing the science, education and outreach needed to address these critical issues. Given the magnitude, complexity and interconnectedness of issues, this will require an increased emphasis on developing multi-institutional partnerships, working more closely with resource management agencies to identify priorities, helping local governments make sound land use decisions to ensure compatibility with coastal, estuarine and marine resources, bringing together experts and resource managers to identify state-of-science, information and technology needs, and support innovative cross-generational approaches to education, outreach and decision making.

VISION: *Informed decisions by individuals, governments and organizations that result in sustainable and resilient coastal and marine ecosystems with diverse native biota and a wide range of benefits to society.*

GOAL: **Facilitate widespread understanding of the economic, social and ecological value of healthy coastal ecosystems and identify actions that can sustain them.**

Strategies:

- Advance coastal and ocean literacy and stewardship through formal and informal learning opportunities using innovative new technologies and methods that effectively support learning across generations and cultures.
- Support the development of measurable indicators of ecosystem health so that the public becomes increasingly aware of both critical issues and improving trends that may occur in response to increased coastal and marine stewardship.
- Provide effective outreach and training programs that foster behaviors that sustain coastal, estuarine and marine ecosystems.

GOAL: Provide sound science to support ecosystem-based coastal and marine management.

Strategies:

- Support research that quantifies how marine fish and other biota are affected by recreational fishing, fisheries management options, or by other man-made or natural changes to critical habitat, food resources or predation risk across their life cycles.
- Support the development and evaluation of effectiveness of models, policies and technologies to support ecosystem-based adaptive management of fisheries and other marine resources. Inter-disciplinary work that links biology with other disciplines including socioeconomics will be particularly supported.
- Support the development of methods and standards that can be used to evaluate the effectiveness of ecosystem-based management approaches and guide future actions to comprehensively manage coastal and marine resources.

GOAL: Support the restored diversity, function and productivity of coastal and marine ecosystems.

Strategies:

- Support the development of science-based best management practices, approaches and technologies that will protect, restore and enhance coastal, estuarine and marine water quality, habitats and food webs.
- Support the development and/or evaluation of methods to promote behavioral changes that can reduce human-related impacts to coastal and marine environments.

Sustainable and Hazard-Resilient Communities

Florida's coastal communities provide vital economic, social and recreational opportunities for millions of residents and tens of millions of visitors to the state each year. Yet decades of immigration have transformed our coasts with changes in land use, dense human population centers, and intensified demand for finite energy, water, and coastal and marine resources. The changes associated with increased development are placing tremendous pressure on habitat, water quality and supply, public access and traditional ways of life. Hurricanes and other natural hazards create additional stress for communities that also face challenges from sea-level rise and other effects of climate change. Florida Sea Grant will play a leadership role in providing information and expertise to local, regional and state governments and agencies in support of the development of new policies, institutional capacities and management approaches to guide the sustainable use of coastal and marine resources. The program will engage a diverse and growing population by applying best-available science, and by using Sea Grant's unique extension and education capabilities to support development of communities that are environmentally, economically and socially stable, vibrant and diverse, and functioning within the carrying capacity of their ecosystems.

VISION: *Coastal communities make efficient use of land, energy and water resources and balance multiple uses that optimize environmental and economic sustainability; ensure the viability of water-dependent marine and coastal activities; and have the capacity for physical, social, economic and ecological resilience to natural and human-caused coastal hazards.*

GOAL: Help people become informed and engaged in decision making regarding sustainability and hazard resiliency.

Strategies:

- Implement outreach and education related to sustainable and hazard-resilient coastal living and provide consistent and accurate messages across generations and cultures.
- Support decision processes and forums to build on multi-agency and public consensus regarding community resiliency, economic vitality, coastal resource stewardship and ecosystem-based management.
- Develop educational programs and information for elected officials regarding how land use and waterway management decisions may affect sustainability of coastal and marine resources.

GOAL: Develop products and policies to support the sustainable use of coastal resources.

Strategies:

- Support the development of uniform, science-based information, public engagement processes, planning guidelines and policies to ensure safe and sustainable public and commercial use of and access to waterfronts and waterways.
- Support outreach programs that result in the increased use of products and applications that increase energy efficiency and water conservation by coastal communities.

GOAL: Develop tools, technologies and policies that increase community hazard resiliency.

Strategies:

- Work with coastal communities and marine enterprises to identify natural and artificial means for increasing their resistance and resilience to hazards.
- Support improved prediction of the impacts of storms, community planning for and response to storms and development of building products and construction standards that minimize impacts of storms on coastal communities and marine enterprises.
- Help local and state agencies and governments prepare for and respond to natural coastal hazards.

Seafood Production and Safety

The rising demand for fish and rapid increase in recreational fishing have increased the pressure on Florida's limited fishery resources, resulting in adverse impacts on fish populations and user groups, and a need for more effective fisheries management. This requires a more complete knowledge about the biological, economic and social dynamics among fishers, consumers and resource managers, as well as a better assessment of fish abundance, health and habitat quality. New and innovative ways are needed to identify and maintain critical habitats, manage resources and evaluate effects of management decisions on fisheries and user groups. Aquaculture may create new opportunities to meet the rising demand for seafood; however, a number of issues must first be addressed for this potential to be realized. Florida's tropical waters, high production, and large imported fish market create significant and recurring issues about aquatic food product safety and quality, an area where Florida Sea Grant has been a national leader for over three decades. Taken together, these challenges will require an integrative approach where Sea Grant specialists work closely with regulatory agencies and the seafood industry to ensure the sustainability, safety, diversity and quality of Florida seafood products.

VISION: *A sustainable and vibrant domestic seafood industry that harvests, produces, imports, processes, markets and serves seafood and aquaculture products in a manner that is consistent with regulatory and consumer expectations for safe, healthy and sustainable choices.*

GOAL: Support enhanced seafood supply through sustainable fishing, aquaculture and habitat conservation.

Strategies:

- Develop information and technologies required to support sustainable harvesting of fish.
- Develop methods and technologies for sustainable aquaculture including: diversification of candidate species, maximizing energy efficiency and water conservation, minimizing environmental impacts, optimizing aquatic animal health, and developing value-added products.

GOAL: Develop methods and processes that will enhance the viability and economy of the domestic seafood industry.

Strategies:

- Support the development and implementation of innovative methods for safe seafood processing, packaging and by-catch reduction.
- Support the development and implementation of innovative methods for by-product use from commercial fisheries, fish processing facilities and aquaculture operations, and identify and comprehensively evaluate opportunities for developing value-added products.
- Identify ways to increase production, energy efficiency, public demand for and value of fish and shellfish products and develop protocols for grower and harvester access to direct seafood markets.

GOAL: Develop procedures to ensure that seafood is safe and provide objective information to foster informed consumers.

Strategies:

- Support development of a highly informed seafood workforce that can build public awareness of differences in quality, safety, sustainability and nutritional benefits of different seafood products so that consumers can make informed choices.
- Increase understanding across generations and cultures of aquaculture by providing factual information about product quality, environmental issues and product safety and health benefits.
- Support research and outreach with state and federal agencies and private sectors to develop methods for the rapid evaluation of seafood product source and quality.

Climate Change: Impacts and Adaptations

Climate-associated changes, including sea-level rise, increased ocean temperatures, altered rainfall and storm dynamics, and ocean acidification are expected to have impacts that span all of the coastal and marine sectors of the nation. In the marine ecosystem, the distribution of native and exotic species may change with increased water temperature, as may the prevalence of disease in keystone animals such as corals, and the occurrence and intensity of toxic algae blooms. The viability of the shellfish industry may be threatened. Coastal communities that were designed to resist storm surges based on historical information may be at considerable risk should relative sea level rise 1 or 2 feet during the service life of infrastructure. To some extent, these impacts may be mitigated through reductions in atmospheric CO₂, but there is strong evidence that changes will occur and that coastal communities will need to adapt. Florida Sea Grant will play a lead role in supporting the necessary research, education and outreach to create a citizenry that is informed about climate effects and that collectively takes strategic, reasoned and effective actions to minimize impacts. Likewise, Sea Grant will partner with communities and agencies to accurately project risks and develop adaptations that will allow sustainable coastal living in the context of changing climate and ocean environments.

VISION: *Widespread understanding of the processes of climate change and their effects on coastal ecosystems and human-built coastal communities, and use of effective strategies for adapting to change.*

GOAL: **Help prepare coastal residents to effectively respond to climate change.**

Strategies:

- Develop education and outreach programs to improve knowledge about climate change across generations and cultures, and facilitate the transfer of knowledge from scientists to extension agents, resource managers, planners and decision makers.
- Engage communities in the development of policies and actions to adapt to climate change, using science-based information and outreach to support improved understanding and responsible allocation of resources in an effective manner.

GOAL: **Help governments incorporate climate change information and options into planning decisions.**

Strategies:

- Provide information to policy-makers regarding how decision made now may be affected later by climate change.
- Develop and evaluate innovative new policy options for adapting to climate change.

- Work with agencies to incorporate climate change effects into natural hazards planning.

GOAL: Provide information and approaches needed to minimize the loss of coastal and marine ecosystems services due to climate change.

Strategies:

- Support research to identify how climate change may affect coastal and marine ecosystems and the services they provide to society.
- Support research to identify best management practices to minimize climate-related impacts to those ecosystems and their associated services.

Cross-Cutting Themes

During the development of strategies associated with the programmatic goals, three cross-cutting themes consistently arose – a need for research that provides resource managers, decision makers, citizens and industry with science-based information; a need for education and outreach programs that result in an informed citizenry that takes actions consistent with environmental and economic sustainability; and support for an effective decision-making process, particularly at the community level. These same cross-cutting themes were identified in the 2009-2013 strategic plan of the National Sea Grant College Program, and are presented here as cross-cutting themes of the Florida Sea Grant College Program.

Florida Sea Grant has a long history of supporting innovative applied science and technology to better understand and sustain the state’s ocean and coastal resources. The program will continue to support research that generates the scientific, technical, legal and socio-political information that is needed to protect coastal and ocean resources, to foster the development of business, products, tools and technologies, and to answer the most pressing questions about use and sustainability of coastal resources.

GOAL: Sound scientific information to advance understanding of the nature and value of coastal and marine resources, to identify new ways to conserve and use the resources, and to support and evaluate the environmental impacts and socio-economic trade-offs involved in coastal decision making.

Strategies:

- Support research to produce the scientific, technical and legal information and the tools and technologies needed to increase understanding of coastal and marine processes.
- Enhance the amount of socio-economic research available to help decision makers evaluate trade-offs and assess risks to the future health and productivity of coastal and marine resources.
- Integrate, translate and disseminate research findings and technological discoveries to resource managers, decision makers, citizens and industry who need the information to capitalize on opportunities and make wise management decisions.

Restoring and sustaining our marine and coastal resources will require not only sound science, but also an informed and engaged citizenry. Florida Sea Grant must play a lead role in developing a cadre of scientists, planners, developers, engineers and people involved in water-related enterprises who understand the interactions between human activities and ecosystem health, and who will take actions that are consistent with sustainability.

GOAL: An informed and engaged public that understands the value and vulnerability of coastal and marine resources, and demands informed, science-based decisions about the conservation, use and management of those resources, and a well-trained workforce that will make this a reality.

Strategies:

- Advance coastal and marine literacy across generations and cultures through formal and informal learning opportunities in our schools, museums, aquaria and other educational forums, including web-based and interactive media that will engage all generations.
- Use Florida Sea Grant's strong university partnerships to create new education opportunities in coastal and marine science for graduate and undergraduate students and develop information products and training opportunities that will help build the workforce capacity for coastal-related jobs and professions.
- Collaborate with state and federal agencies and other partners to build public awareness about critical coastal and marine issues, using the integrated research, education, extension and communication capacities of the Sea Grant network.

Florida Sea Grant also will play a lead role as an honest broker for decision making related to complex coastal and marine issues, based on best available science. There is considerable conflict among the various sectors that depend on Florida's coasts, and decision making is highly fragmented. Sea Grant's

long-standing relationship with a wide variety of stakeholders and its reputation as a source of unbiased information will enable it to play a leadership role in promoting effective information sharing, consensus building and integration of efforts in the coastal arena.

GOAL: Decision-making processes that involve the full range of coastal interests, integrate efforts of public and private partners at regional, state and local levels, and provide mechanisms for establishing a common understanding and outcomes that balance multiple interests.

Strategies:

- Use Sea Grant’s research, education and extension capabilities to encourage and support the creation of public decision making processes that minimize overlap, maximize effectiveness, and provide an integrated response to coastal problems and opportunities.
- Build consensus on such complex issues as coastal land use, energy development, public access and climate change impacts by supporting innovative applied research, building broader understanding among various constituency groups and convening diverse groups of stakeholders to work together to find common solutions.
- Strengthen partnerships to promote regional, state and issue-related collaboration among government programs and other partners to support more effective and integrated decision making.

Strategic Program Management

With such an intimate linkage between its residents, economy and coastal resources, and with the pressing need for practical solutions to problems faced by coastal communities, Florida Sea Grant has the opportunity to implement model programs that can be applied worldwide. Strategic program management is critical to this process, identifying novel ways to tackle the diverse, interconnected and complex issues identified in this plan.

Strategies:

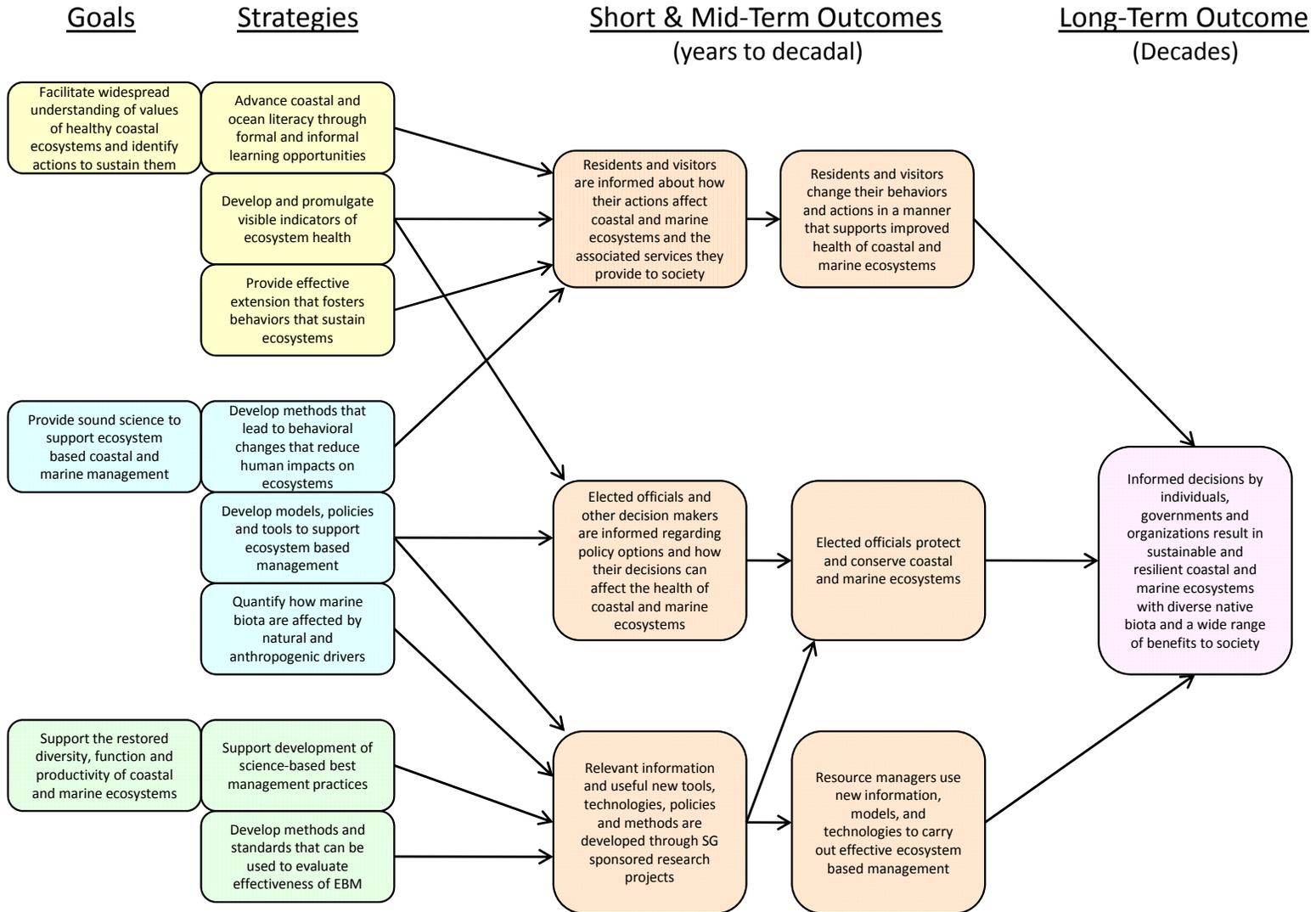
- Florida Sea Grant will identify and implement partnership agreements with state and federal agencies and non-governmental organizations aimed at cooperatively addressing common mission elements of the respective programs. As examples, the missions of Sea Grant, NOAA Coastal Services Centers and NOAA National Estuarine Research Reserve System (NERRS) may be facilitated by development of specific partnership agreements related to jointly sponsored research, education and/or outreach.

- Public-private partnerships also will be pursued to accomplish research, education and outreach.
- A coordinated program will be implemented with guidance from the Florida Sea Grant Advisory Council and in cooperation with the University of Florida Foundation to establish an increased endowment base, to provide the program with additional resources needed to address the programmatic mission.
- Florida Sea Grant will expand professional development opportunities for its marine extension faculty.
- A set of state-wide education and extension programs will be developed focused on strategies identified in this plan. These may include, for example, programs that provide citizens with objective information on how coastal environments and economies are expected to be affected by climate change, information regarding actions that citizens can take to mitigate societal impacts to coastal and marine ecosystems, and information on safe and healthy seafood choices.
- Florida Sea Grant will remain actively involved with regional councils and programs including the Florida Oceans and Coastal Council, Florida Ocean Alliance, Gulf of Mexico Alliance, Gulf of Mexico and South Atlantic regional research planning projects, and the Coastal Ocean Observing Systems of the Gulf of Mexico and Southeast Atlantic to maximize opportunities for coordinated research, education and outreach activities.
- Florida Sea Grant will expand its support for graduate education by: requiring that all research projects support graduate students; and by expanding the number of privately-funded award, fellowship and scholarship opportunities.

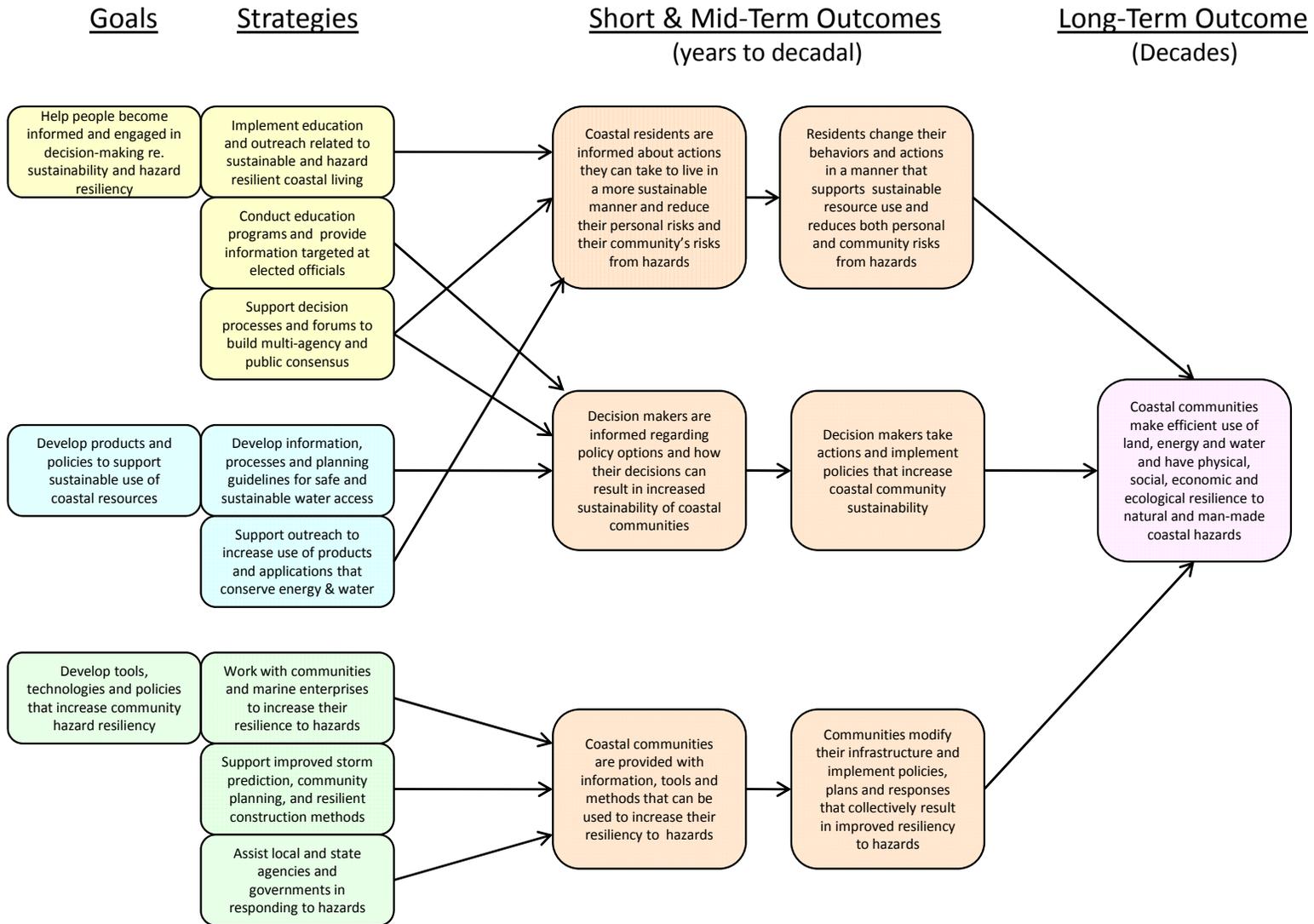
Implementation

The flow diagrams on the following pages are logic models that identify how the goals and strategies in each programmatic focus area are expected to result, over time, in particular short-term, mid-term and long-term outcomes. Related to these models are four-year planning objectives and a set of performance measures that we will use to measure Florida Sea Grant's success in tackling critical coastal and ocean issues.

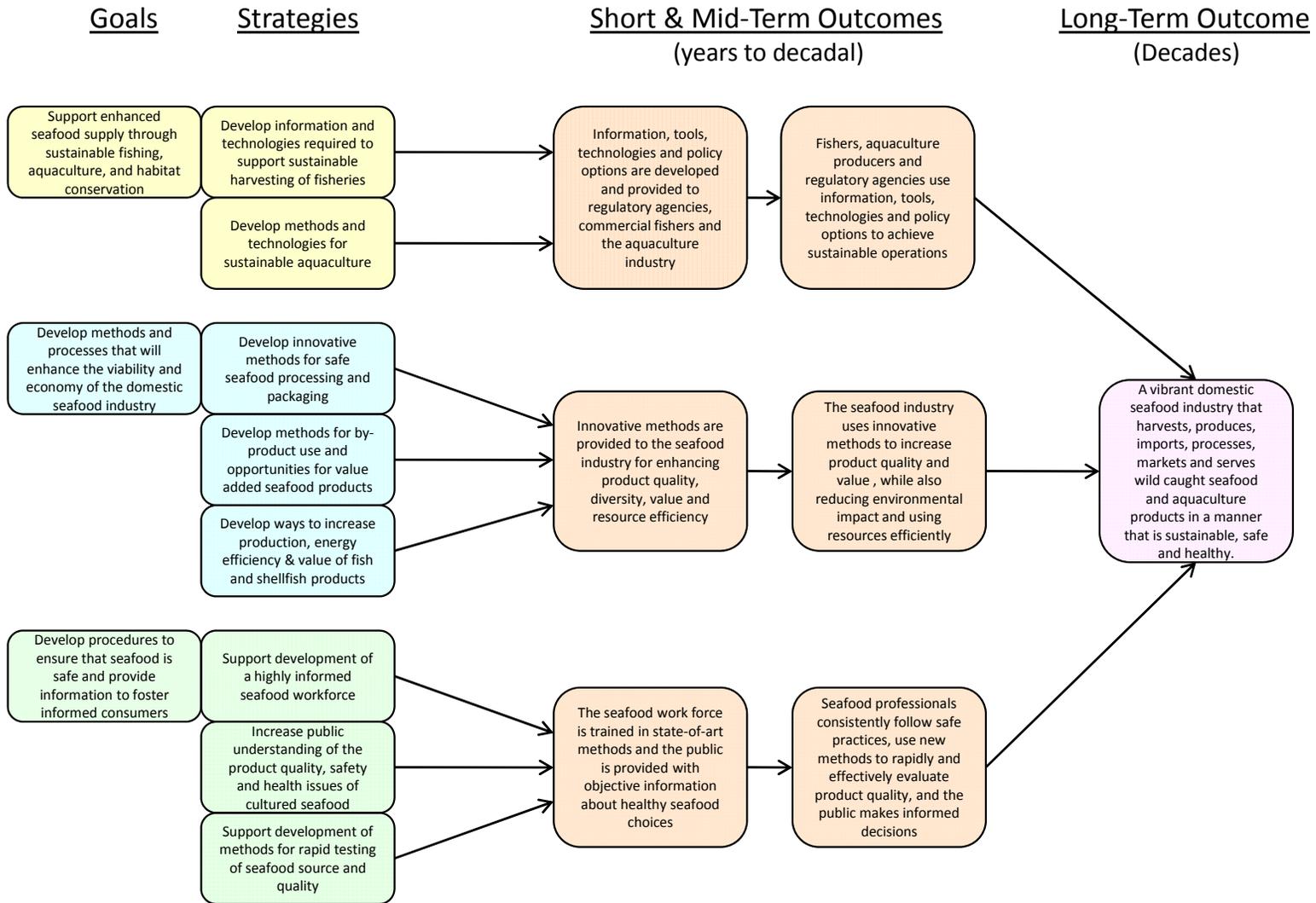
HEALTHY COASTAL AND MARINE ECOSYSTEMS



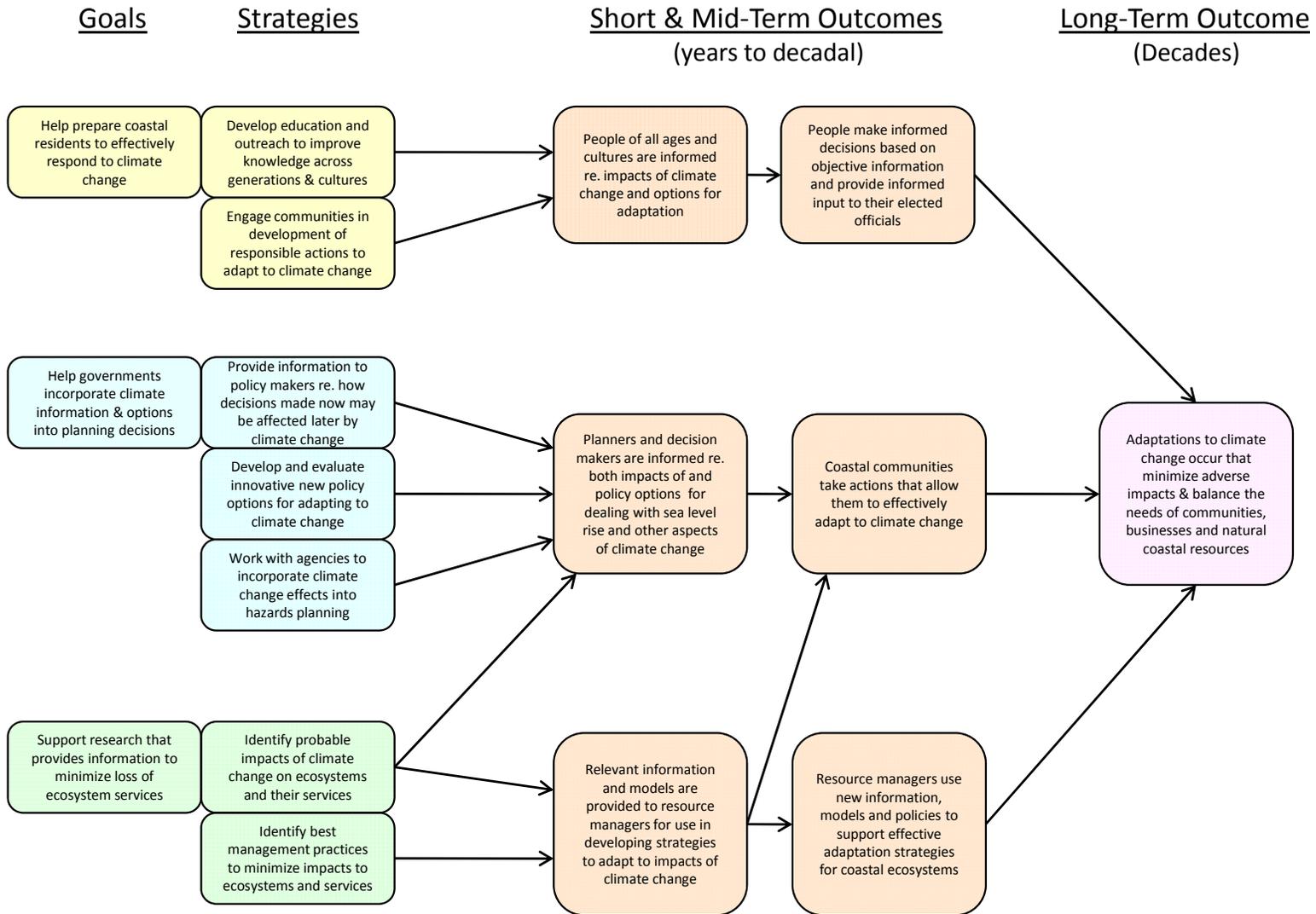
SUSTAINABLE & HAZARD RESILIENT COMMUNITIES



SEAFOOD PRODUCTION AND SAFETY



CLIMATE CHANGE: IMPACTS AND ADAPTATIONS



Four-Year Planning Objectives

These objectives identify what Florida Sea Grant will accomplish over the next four years in each of the programmatic focus areas to achieve the broadly identified short, mid and/or long-term outcomes.

Healthy Coastal and Marine Ecosystems

During the next four years --

Thousands of coastal residents and visitors will be informed about specific actions they can take to support the betterment of our renewable and finite marine resources via programs implemented by Florida Sea Grant.

Mayors, county commissioners and other local and regional decision makers in coastal counties will become better informed about the values of coastal natural resources and how their decisions affect those resources, via innovative in-the-water outreach programs conducted by Sea Grant marine extension agents.

Thousands of recreational fishers will learn methods to reduce fish mortality, practice ethical angling, and reduce their impacts on essential habitat for fish and other marine biota as a result of information and programs developed by Florida Sea Grant in partnership with the Florida Fish and Wildlife Conservation Commission.

Volunteer groups will remove thousands of derelict crab and lobster traps from coastal waterways in a statewide program using guidelines developed by Florida Sea Grant and the Florida Fish and Wildlife Conservation Commission.

Volunteers working on projects sponsored wholly or in part by Florida Sea Grant will enhance, re-establish or rehabilitate coastal habitat.

State and federal agencies will be provided with new information, models and decision-support tools for ecosystem-based management of finfish and shellfish, as a result of research funded by Florida Sea Grant.

Hundreds of recreational boaters will become better informed about actions to reduce their impacts on mangroves, sea turtles, barrier islands, seagrass and other habitats and biota through an outreach partnership conducted by Florida Sea Grant and at least one of the NOAA NERRS areas.

Ecosystem Objectives (Cont'd)

Hundreds of K-12 teachers, informal educators and youth will develop increased ocean literacy as a result of Sea Grant education and outreach programs.

Sustainable and Hazard-Resilient Communities

During the next four years --

Coastal resource managers and policy-makers will use Florida Sea Grant information and tools to support more effective management of their waterways, increase the efficiency of resource use, increase public safety, save tax dollars and reduce environmental impacts.

Coastal communities will be provided with new information, products, tools and policies to increase the resistance and resilience of residential structures to hurricanes as a result of Florida Sea Grant research and extension.

Marinas, boatyards and boat retailers will adopt best management practices for reducing coastal water pollution, as a result of Florida Sea Grant extension activities conducted in the Clean Marina, Clean Boatyard, Clean Retailer and Clean Boating Partnership programs.

Coastal residents will be provided with information that increases their awareness of risks associated with living, working and recreating along the coast, including risks associated with sharks, rip tides, sun exposure and red tide.

K-12 teachers will be provided with innovative educational materials and approaches that bring knowledge about sustainable and hazard-resilient coastal living into the classroom.

Seafood Production and Safety

During the next four years –

Seafood professionals from across the nation will participate in the University of Florida / Florida Sea Grant Seafood HACCP Alliance for Education and Training which provides educational support for every seafood processing and importing entity in the nation. This program will be significantly updated and revised in 2009 to anticipate new mandates for the next decade of seafood commerce in both domestic and international settings.

The seafood industry will implement new production and processing methods to reduce and eliminate potential pathogens in raw molluscan shellfish that can be applied across all

processing operations associated with warm coastal waters as a result of Florida Sea Grant research and extension.

The seafood industry will be provided with new information from integrated research and extension/outreach that addresses emerging concerns for the limitations in traditional wild resources and responsible introduction, use and understanding of alternative selections from aquaculture and importation.

Commercial, regulatory and institutional seafood interests will develop increased international collaboration facilitated by Florida Sea Grant, to better share the responsibility for seafood safety and sustainability.

The aquaculture industry will produce and sell new products developed as a result of research and extension supported by Florida Sea Grant addressing larval development, grow-out, quality control and product economics and marketing strategies.

Clam, oyster and other aquaculture producers, and state agencies involved with the regulation and support of the aquaculture industry will continue to receive technical assistance, training and support from Florida Sea Grant.

Climate Change: Impacts and Adaptations

During the next four years --

Environmental and land use law professionals will develop an increased understanding of what is known, what is probable, and what is possible in regard to the impacts of sea-level rise on coastal development, and become more familiar with legal and policy options related to land use, zoning and real property transactions as a result of Florida Sea Grant law and policy outreach.

Planners, legal staff and other key stakeholders in selected coastal counties will develop an in-depth understanding of the potential impacts of sea-level rise and the policy options for adaptation and mitigation as a result of Florida Sea Grant law and policy outreach.

Florida Sea Grant will facilitate information exchange among coastal governments regarding climate adaptation strategies using a Community of Practice approach and at least yearly facilitated workshops. This will include cooperative outreach with GOM and SE Atlantic Sea Grant and other NOAA programs.

Hundreds of K-12 teachers, informal educators and youth will develop increased climate literacy as a result of Sea Grant education and outreach programs.

Performance Measures

These measures and their associated quantitative targets will be used to judge program success, and to adaptively manage the program activities if we are not making sufficient progress toward the targets in the upcoming years. In some instances, we may learn that particular targets are not realistic, and if this occurs, they will be modified following approval of the National Sea Grant Office.

In parentheses, F indicates a Florida performance measure, and N indicates a national performance measure. Targets associated with any given measure are for the four-year time frame of this strategic plan – i.e., they reflect what we will accomplish by 2013.

Healthy Coastal and Marine Ecosystems

Performance Measure (F): Number of boaters, fishers, coastal residents and visitors who become better informed about how their actions affect the health of coastal and ocean natural resources, as a result of Florida Sea Grant activities Target: 1,000

Performance Measure (F): Number of decision makers who become better informed about the values of coastal natural resources and how their decisions affect those resources, as a result of Florida Sea Grant outreach Target: 50

Performance Measures (F/N): Number of acres of coastal habitat enhanced, re-established or rehabilitated through volunteer efforts coordinated by Florida Sea Grant Target: 100

Performance Measure (F): Number of information products, models, decision support tools or technologies developed by Florida Sea Grant for use by state and federal agencies in ecosystem-based fisheries management Target: 4

Performance Measure (F): Number of K-12 teachers, informal educators and youth who increase their ocean literacy as a result of education and outreach activities sponsored or led by Florida Sea Grant Target: 100

Sustainable and Hazard-Resilient Communities

Performance Measure (F): Number of resource managers and policy-makers who receive information and guidance from Florida Sea Grant regarding practices and policies to support sustainable development, best boating and waterway management practices, and coastal resilience Target: 300

Performance Measure (F): Number of resource managers and policy-makers who implement practices and policies to support sustainable development, best boating and waterway management and coastal resilience based on instructions provided by Florida Sea Grant Target: 30

Performance Measure (F): Number of new data sources, decision-support methods, standards, products, policies or BMPs developed and/or implemented to increase the resilience and sustainability of coastal populations and infrastructure Target: 10

Performance Measure (F, N): Economic benefits derived from sustainable coastal policies and practices implemented as a result of Sea Grant activities Target: \$5 million tax savings

Performance Measure (F): Number of K-12 teachers, informal educators and youth who increase their literacy regarding sustainability and hazard resiliency as a result of education and outreach activities sponsored or led by Florida Sea Grant Target: 100

Seafood Production and Safety

Performance Measure (F): Number of nation-wide seafood processing operations and regulatory inspectors that participate in the new editions of the University of Florida and Florida Sea Grant Seafood HACCP Alliance training programs Targets: 4,000 seafood processing operations and 400 regulatory agency inspectors

Performance Measure (F): Number of seafood retail operations adopting information from seafood safety educational materials developed by Florida Sea Grant Target: 200

Performance Measure (F): Number of shrimp and oyster processing firms adopting safe and effective methods for handling and processing seafood as a result of knowledge and skills acquired at Florida Sea Grant shrimp and oyster schools Target: 20

Performance Measure (F): Number of new native Florida aquaculture products commercially produced as a result of Florida Sea Grant funded research and extension Target: 2

Performance Measure (F, N): Economic and societal benefits derived from the discovery or application of fishery production and management models or techniques that lead to increased sustainability and productivity from the fishery Target: \$100 million in income, over 500 jobs sustained and at least 5 new small businesses.

Climate Change: Impacts and Adaptations

Performance Measure (F): Number of legal professionals and coastal community planners who develop an increased understanding of what is known, what is probable, and what is possible in regard to the impacts of sea-level rise on coastal property and infrastructure, and who become more familiar with legal and policy options related to zoning and land use for proactive planning as a result of Florida Sea Grant law and policy outreach Target: 100

Performance Measure (F): Number of local and regional decision makers who develop an increased understanding of expected climate impacts and potential adaptation strategies through information-sharing sessions facilitated by Florida Sea Grant Target: 100

Performance Measure (F): Number of K-12 teachers, informal educators and youth who increase their climate literacy as a result of education and outreach activities sponsored or led by Florida Sea Grant Target: 100