



## Rhode Island Sea Grant College Program Implementation Plan 2003–2005



This implementation plan represents Rhode Island Sea Grant's programming commitments for 2003–05. In addition, it identifies our strategic priorities under which the implementation plan was developed and describes the management of the program, new program management initiatives, and evaluation methods—all of which serve as an important basis for establishing Rhode Island Sea Grant's future program implementation and evaluation procedures.

### Strategic Planning at Rhode Island Sea Grant: 1997–2005

Based on extensive constituent and public input and review, Rhode Island Sea Grant issued its first strategic plan in early 1997. In late 1999, Sea Grant revised its strategic plan, *Marine Research and Outreach Priorities, Revised Program Plan: 2000–2005*. Both versions of the plan were subjected to extensive external review and many comments and recommendations were incorporated into the final plans. The 2000–05 strategic plan clearly explains the linkages to Sea Grant's national strategic plan, *Coastal and Marine Resources for a Sustainable Economy and Environment—Sea Grant Network Plan: 1995–2005*.

Strategic plans must provide a broad, long-term overview of priority research and management issues. When laying out a multiyear strategic vision, it is vital to avoid preclusive statements of strategy that would inhibit the program's ability to respond flexibly and relevantly to evolving managerial issues and scientific questions. Rhode Island Sea Grant's 2000–05 strategic plan provides such a comprehensive, but flexible, overview in terms of the critical marine and coastal issues confronting Rhode Island, New England, and the United States. The 2000–05 strategic plan identifies four broad priority areas for research and outreach:

- Preserve, restore, and manage coastal and marine habitats and ecosystems
- Achieve sustainable seafood production
- Advance environmental technologies in support of Rhode Island's marine economy
- Foster sustainable coastal communities through integrated coastal management<sup>1</sup>

In August 2001, Barry Costa-Pierce joined Rhode Island Sea Grant as its director. Costa-Pierce affirmed the core priorities identified in the 2000–05 strategic plan and established a process to implement programmatic and organizational development activities that directly reflected these priorities. External and internal advisory committee structures and program management structures have been revised, and processes for making the 2000–05 strategic plan a "living" document have been implemented. Consequently, for 2003 and beyond, the priority areas articulated in the 2000–05 strategic plan have been reorganized into two over-arching themes with six priority areas:

#### **Sustainable Coastal Communities and Environments**

- Priority 1: Enhanced Governance of Coastal Ecosystems and Communities
- Priority 2: Sustainable Marine Ecosystems and Habitats: The Ecology of Narragansett Bay and Southern Rhode Island's Coastal Lagoons

#### **Sustainable Fisheries**

- Priority 1: Commercial and Recreational Fisheries Science
- Priority 2: Fisheries Management and Policy
- Priority 3: Seafood Health and Safety
- Priority 4: Ecological Aquaculture

<sup>1</sup>During development of the 2001–03 omnibus proposal in early 2001, a fifth goal was added:  
"Promote communications, training, and human resource development in support of coastal and marine resource management."

## Rhode Island Sea Grant's Implementation Plan: 2003–2005

The Rhode Island Sea Grant 2003–05 implementation plan incorporates the evolution of Sea Grant's core strategic priorities into a coherent framework for program implementation, omnibus development, and strategic planning. Planned research, outreach, and education initiatives for the 2003–05 period are categorized by central theme and priority.

### Sustainable Coastal Communities and Environments

#### Priority 1: Enhanced Governance of Coastal Ecosystems and Communities

##### Research

- Effective application of sustainable development and growth management principles to Rhode Island's coastal communities and resources
- Enhanced management and ecologically compatible disposal of dredged materials extracted from coastal waters, particularly those waters used by recreational boaters
- Comprehensive evaluation of the impacts of coastal economic development to assist in the formulation and implementation of ecologically sustainable and equitable options for coastal and marine resources development
- Innovative methods and comprehensive information for implementation of state and local development strategies that will enhance Rhode Island's marine-related economy

##### Outreach and Education

- Promote public buy-in for the Aquidneck Island West Side Master Plan through collaborations with the Aquidneck Island Planning Commission and public workshops until the West Side Master Plan is developed and implemented
- Analyze local, state, and federal policies for compatibility with or impact on the West Side Master Plan. Identify opportunities for linking the master plan with current policies to enhance its implementation
- Organize and facilitate an advisory committee for Rhode Island's Greenwich Bay to identify significant issues that the Greenwich Bay Special Area Management Plan (SAMP) should address. Assess and synthesize the available scientific research relevant to the issues prioritized for Greenwich Bay
- Formulate SAMP policies and principles for adoption by the R.I. Coastal Resources Management Council (CRMC) into the state's coastal zone management program and the state guide plan to which local comprehensive plans must comply

- Draft *Vision 2020: A Collective Vision and Core Principles for Narragansett Bay, Coastal Rhode Island, and Their Watersheds*. Develop a strategic plan to obtain broad-based political and public endorsement of *Vision 2020* in Rhode Island and Massachusetts

#### Priority 2: Sustainable Marine Ecosystems and Habitats: The Ecology of Narragansett Bay and Southern Rhode Island's Coastal Lagoons

##### Research

- Hydrology of groundwater and watershed flows to coastal lagoons, emphasizing the fate and coastal impacts of septic system pollutants and flows
- Impacts of land use on estuarine water quality and habitats via groundwater infiltration and surface runoff
- Cost-effective methods for the remediation of contaminated marine sediments
- Habitat restoration in urban coastal environments
- Restoration of marine shellfish and submerged aquatic vegetation habitats and resources
- Ecological impacts of endocrine disrupters and other novel toxicants
- Anthropogenic and natural environmental factors that promote the onset and frequency of harmful algal blooms
- Enhanced nutrient dynamics modeling for estuaries
- Impacts of shoreline armoring, inlet dredging, and stabilization on nearshore physical processes, fish and shellfish recruitment, and coastal water quality
- Innovative methods for the prevention and management of marine invasive species

##### Outreach and Education

- Convene a panel of experts to assess technical and policy experiences in other states regarding the ways that impacts of freshwater allocations on estuarine salinity regimes have been characterized in allocation decisions
- Participate in committees exploring the issues surrounding stream flow standards and out-of-basin transfer decisions; focus on defining and applying minimum need standards for freshwater inflows into estuaries
- Engage decision makers involved with the Rhode Island Watershed Partnership in the Greenwich Bay SAMP development. Explore applicability of the SAMP approach as a model for integrated coastal watershed planning and management
- Provide capacity-building training on implementing watershed action plans to watershed organizations in Rhode Island and southeastern Massachusetts
- Encourage cross-learning among state-based Sea Grant Coastal Community Development Programs (CCDPs) by summarizing and distributing information on projects funded by the National Sea Grant CCDP
- Partner with the Narragansett Bay National Estuarine Research Reserve (NBNERR) to develop and present a series of coastal decision-maker workshops beginning in 2003

# Sustainable Fisheries

## Priority 1: Commercial and Recreational Fisheries Science

### Research

- Innovative fishing methods and gear to reduce bycatch based on improved scientific understanding of the behavior and life-cycle characteristics of marine species
- Innovative fishing methods and gear to reduce protected species mortality due to gear entanglement
- Responses of seafloor communities to different levels of fishing effort and the level of effort needed to produce significant effects on habitat quality
- Data on shell disease prevalence in lobster, tag/v-notching mortality, and tag loss rates; compile biological data from Rhode Island Lobstermen's Association (RILA) and *North Cape* tagging studies for lobster

### Outreach and Education

- Assist commercial fishermen in reducing turtle bycatch and maximizing turtle survival
- Conduct joint research with fishermen and managers on specific bycatch issues: black sea bass and scup in fish pots and mesh selectivity studies
- Serve as scientific advisors on R.I. Department of Environmental Management (RIDEM) state advisory panels for lobster, menhaden, and winter flounder
- Offer upper level course on "Contemporary Commercial Fisheries of Rhode Island: Fish, Fishery, and Economics"
- Conduct National Marine Fisheries Service (NMFS) Observer Training Program for at-sea observers tasked with monitoring bycatch in mandated fisheries
- Participate on steering committee established to develop a Northeast regional facilitator network targeting fisheries resource management disputes
- Conduct regional fishing gear mapping project. Conduct similar activity in conjunction with the Greenwich Bay SAMP to evaluate areas used by commercial and recreational fishermen

## Priority 2: Fisheries Management and Policy

### Research

- Comprehensive assessment of the socioeconomic consequences of area closures on commercial and recreational fishing industries
- Biological, physical, and socioeconomic analysis tools that support efforts to optimize fishing effort levels and scale back capitalization levels in U.S. commercial fishing sectors
- Fisheries management models based on credible scientific knowledge and information of marine ecological functions and trends

### Outreach and Education

- Improve knowledge base on fisheries management for recreational fishermen: Conduct educational programs for the Rhode Island Saltwater Anglers Association and other recreational fishing associations, and develop a Code of Conduct for Responsible Fishing for recreational fishing

- Work with the commercial fishing industry to implement the portions of the Code of Conduct related to cooperative research and management restructuring
- Conduct Northeast regional educational workshops covering salient issues of bycatch, marine protected areas, and property rights

## Priority 3: Seafood Health and Safety

### Research

- Innovative strategies to mitigate or eliminate human health risks posed by contaminated seafood

### Outreach and Education

- Continue to distribute the "Seafood Safety Savvy HACCP" (Hazard Analysis at Critical Control Points) newsletter
- Expand offering of the "Segment Two" course of the new HACCP Internet program
- Develop and implement shellfish harvester educational campaign with RIDEM and R.I. Department of Health
- Provide training and education in support of controls for histamine poisoning
- Validate seafood retail and consumer critical control points for preparation through research that will verify current guidelines to prevent or eliminate potential pathogens in final products

## Priority 4: Ecological Aquaculture

### Research

- Impacts of commercial aquaculture on coastal water quality, coastal ecosystems, and endangered or threatened species with a focus on impact of shellfish resources on water quality maintenance and ecological restoration
- Comprehensive ocean mapping for aquaculture
- Alternative species for commercial aquaculture in Rhode Island
- Innovative means for monitoring cultured shellfish disease prevalence and impacts
- Cultured seafood product marketing and differentiation

### Outreach and Education

- Work collaboratively with CRMC and Roger Williams University (RWU) to coordinate research and outreach activities encompassed in the Rhode Island Aquaculture Initiative
- Conduct shellfish aquaculture training course
- Expand one-to-one interactions with public and interested parties on aquaculture techniques and their environmental impacts
- Work with the aquaculture industry to adopt the Code of Responsible Aquaculture for the industry



## Program Management in 2003–2005

### Organizational Development

Since September 2001, Rhode Island Sea Grant has established new internal mechanisms designed to enhance organizational development. These entail the following management and planning activities, which will be pursued throughout the 2003–05 period and into the future:

- Monthly management team meetings to coordinate research, extension, communications, and management programming
- Quarterly meetings for the entire Sea Grant staff to build program coherence and identity and encourage continued professional development
- An annual retreat for the entire staff to review and refine program priorities and activities for the next 12 months
- Adoption of Canada’s International Development Research Centre’s outcome mapping techniques as a program-wide evaluation model
- Reorganizing Rhode Island Sea Grant’s advisory committee structure

### Advisory Networks

In 2002, Rhode Island Sea Grant revamped its internal and external advisory structures. They now consist of an expanded Senior Advisory Council (SAC) and a newly established University Advisory Committee (UAC).

The SAC consists of a diverse group of stakeholders functioning at all levels of society who assist in the continual development of Rhode Island Sea Grant’s strategic priorities and programming. (See page 7 for the SAC roster.) The SAC ensures that timely, relevant programs and the continuous pursuit of excellence remain hallmarks of Rhode Island Sea Grant. SAC members represent a diverse array of private and public groups that possess strong interest and long experience in marine and coastal research, outreach, and education. There are 18 seats on the SAC, with eight seats permanently held by selected organizations closely engaged with Rhode Island Sea Grant. (These organizations are: RIDEM, CRMC, Newport County Chamber of Commerce, NMFS Northeast Fisheries Science Center, Environmental Protection Agency (EPA) Region I, Sea Grant National Review Panel, EPA Coastal Management Branch, and NMFS Office of Sustainable Fisheries.) The remaining 10 seats rotate on a three-year cycle. Our National Sea Grant program officer serves as an ex-officio member.

To address issues particular to the University of Rhode Island (URI), the UAC has been established (see page 7 for the UAC roster), with appointments made by the URI provost. The UAC convenes twice annually to review and discuss new collaborative activities in research, education, and outreach emerging from URI’s diverse international, national, regional, state, and local marine environmental programs.

## Strategic Planning and Implementation

Effectively managing a Sea Grant College Program demands continual strategic thinking and evaluation. Rhode Island Sea Grant is committed to utilizing strategic planning and evaluation as foundations for designing its programs and directing its many diverse investments. Through explicit processes in strategic planning and reassessment, Sea Grant seeks input from its constituencies, including state and local officials, university leaders and faculty at URI and other Rhode Island institutions of higher education, marine trades organizations, other Sea Grant professionals, the National Oceanic and Atmospheric Administration (NOAA) and other federal officials, and environmental advocacy organizations. These inputs are garnered both through its advisory networks and through targeted, strategic planning exercises.

Major strategic planning processes are undertaken approximately every five years. To date, refinements to Rhode Island Sea Grant’s strategic plan have been proposed and implemented on an annual basis. Based on its annual retreats and internal and external advisory networks, Rhode Island Sea Grant will initiate its next major strategic planning process in early 2004 and will issue, in 2005, its third major strategic plan covering the years 2006–10, released in time for development of the 2006–08 omnibus proposal.

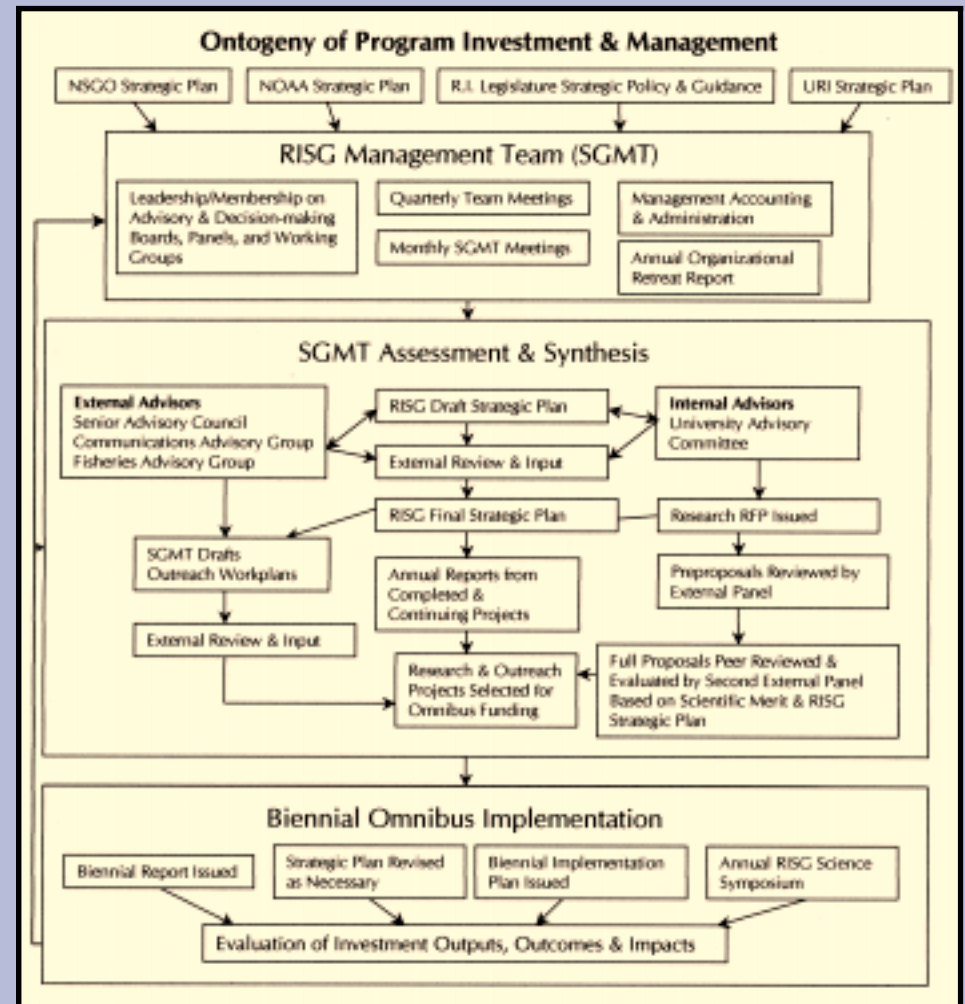
### Omnibus Proposal Development

These strategic planning, advisory network, and organizational development and improvement mechanisms all feed into development and implementation of Rhode Island Sea Grant’s strategic plan and omnibus proposals. The diagram on page 5 illustrates how these mechanisms relate to each other in an integrated ontology of Rhode Island Sea Grant’s investments.

### Evaluating Impacts

Rhode Island Sea Grant has adopted “outcome mapping” as its primary organizational evaluation model. The process of outcome mapping involves using a program’s vision and mission statements to identify “boundary partners,” establish an outcome challenge, and identify outcome markers. Outcome mapping focuses evaluation efforts on substantiating alterations in the behavior of boundary partners that can be directly or indirectly attributed to outcomes of the outreach, education, or research projects being evaluated. Boundary partners are those individuals or organizations with whom a program interacts directly and consistently and with whom opportunities for influencing behavior change are anticipated or expected. Most projects involve multiple outcomes because they entail multiple boundary partners.

Outcome mapping assumes that the boundary partners are the primary controllers of change and that the program or project being evaluated will facilitate the change process by providing access to new resources, ideas, learning opportunities, or basic scientific and technical knowledge and information over a specified period of time. The outcome mapping model thus allows Rhode Island Sea Grant to assess program impacts (behavior change) rather than simply to report outputs. Successful implementation of outcome mapping will also directly benefit strategic planning for future activities and projects.



## New Program Initiatives

In 2002, Rhode Island Sea Grant initiated several new programs in education, watershed science and management, and law and policy that will be implemented in 2003–05.

### Environmental Literacy and Education

In November 2002, Rhode Island Sea Grant convened an Environmental Literacy and Education Topical Assessment Team (TAT) to begin to assess program development opportunities in these exciting and important endeavors. One idea that emerged from the TAT was to develop a statewide environmental literacy and education forum. In addition, Rhode Island Sea Grant has begun to implement the Rhode Island Sea Grant Education Initiative. The initiative will target marine education and environmental literacy as an expanded program area. Full development of this program area will depend on the garnering of new monies above and beyond Sea Grant's current federal and state funding. For now, though, the initiative will be underwritten by the Program Development Fund. Specifically, the initiative seeks to:

- Promote lifelong learning
- Use multidisciplinary approaches to enhancing environmental literacy
- Develop integrated systems thinking
- Forge strategic partnerships among educators, scientists, and community leaders
- Encourage multicultural perspectives and capture minority viewpoints
- Empower individuals and institutions to contribute to sustainability

In the short-term, the education initiative will focus on enhancing existing educational capabilities and programs. It will emphasize the core Sea Grant themes of partnering and scientific credibility. It will also tap resources available through the Sea Grant Educators Network.

To date, grants have been made to provide scholarships for annual National Ocean Sciences Bowl competitions, to enhance the *Narragansett Bay Classroom*—a comprehensive catalogue of marine education and training programs offered by the URI Graduate School of Oceanography's Office of Marine Programs—and to support the Rhode Island JASON Project.

### Watershed Program Development

Rhode Island Sea Grant has initiated a new Program Development Initiative that will expand connections to the watershed-water quality outreach programs run by staff at URI Land Grant. This initiative will bring together Land Grant and Sea Grant outreach programs to benefit both partners as well as the citizens and decision makers of Rhode Island.

The URI Watershed Watch Program is a scientist-led volunteer water quality monitoring program that engages citizens in acquiring locally relevant data on the water resources of their communities. The program encompasses lakes, ponds,

rivers and tributary streams, coastal lagoons, estuaries, and ocean beaches. The program works in cooperation with local organizations such as town conservation commissions, watershed organizations, and recreational groups to establish sampling locations and priorities, recruit and train volunteers, and disseminate monitoring results.

By establishing this development initiative, Sea Grant will provide critical staff support needed to expand the depth and scope of volunteer monitoring in Rhode Island's coastal waters, as well as improve the dissemination and utility of water quality information. Its objectives are to:

- Expand coastal volunteer monitoring in concert with Rhode Island Sea Grant's Greenwich Bay SAMP project
- Improve dissemination of monitoring results and information
- Participate in the National Sea Grant Outreach Initiative on marine invasive species
- Increase interactions among URI Watershed Watch, Sea Grant, and the Rhode Island Rivers Council

### Development of a Rhode Island Sea Grant Legal Program

In 2002, Sea Grant launched a Program Development Initiative to form a Sea Grant Legal Program in partnership with the URI marine affairs department and the RWU Ralph R. Papitto School of Law. The objectives are to:

- Provide leadership and guidance for incorporating Sea Grant priorities into the existing joint-degree program (an M.A. in marine affairs from URI and a J.D. from RWU) by emphasizing the consideration and pursuit of Sea Grant programmatic and outreach priorities
- Develop a marine and environmental law research program that could serve the needs of state and local governments and provide applied research opportunities on maritime issues for law students
- Develop a marine and environmental law practice clinic and internships that would engage students in priority legal research topics of interest to Sea Grant that law students could use as the basis for their upper-level required research and writing projects



## Rhode Island Sea Grant Senior Advisory Council, 2002–2005

### PERMANENT ORGANIZATIONS

Rhode Island	Northeast	National
Grover Fugate, Executive Director, CRMC Jan Reitsma, Director, RIDEM Keith Stokes, Executive Director, Newport County Chamber of Commerce	John Boreman, Acting Science and Research Director, NMFS Northeast Fisheries Science Center Peyton Fleming, Communications Director, EPA Region I	Darrell Brown, Chief, EPA Coastal Management Branch John Dunnigan, NMFS, Office of Sustainable Fisheries Carlos Fetterolf, Jr., Member, National Sea Grant Review Panel
<b>ROTATING MEMBERS</b>		
Rhode Island	Northeast	National
Ralph Boragine, Director, Rhode Island Seafood Council Lee Schisler, Executive Director, Audubon Society of Rhode Island Curt Spalding, Executive Director, Save The Bay	Robert Billington, Executive Director, Blackstone Valley Tourism Council Benjamin Cuker, Professor, Hampton University Linda Deegan, Senior Scientist, Ecosystems Center, Marine Biological Laboratory Christine Gault, Reserve Manager, Waquoit Bay National Estuarine Research Reserve	<i>SAC Chair, 2002–2005</i> Paul Scholz, Branch Chief, NOAA Coastal Services Center  Michael Conner, Executive Director, San Francisco Estuary Institute James Frye, Executive Director, Marina Operators Association of America Jack Greer, Assistant Director for Communications and Public Affairs, Maryland Sea Grant
<b>EX-OFFICIO MEMBER</b>		
James Murray, Program Officer, National Sea Grant College Program		

## Rhode Island Sea Grant University Advisory Council

URI Graduate School of Oceanography	URI College of the Environment & Life Sciences	URI Administration
Professor Peter August, Director, Coastal Institute Professor John Merrill, Chemical Oceanography Stephen Olsen, Director, URI Coastal Resources Center Professor Mark Wimbush, Associate Dean	<i>UAC Chair, 2002–2005</i> Deborah Grossman-Garber, Director, Undergraduate Programs and Academic Outreach  Professor Richard Burroughs, Marine Affairs Professor Arthur Gold, Natural Resource Science	Professor Richard Rhodes, III, Vice Provost for Academic Affairs

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