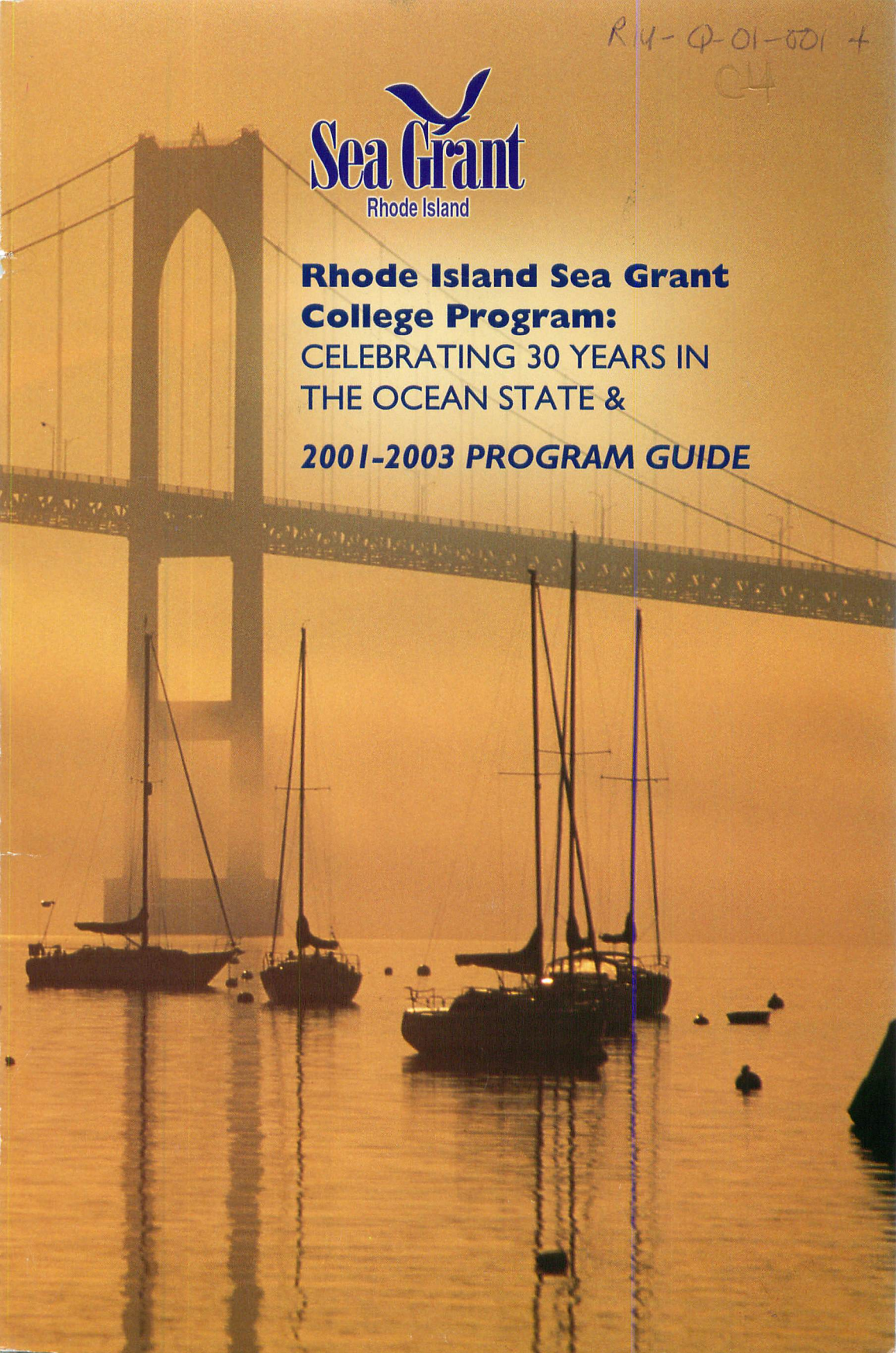

Sea Grant
Rhode Island

Rhode Island Sea Grant College Program:
CELEBRATING 30 YEARS IN THE OCEAN STATE &
2001-2003 PROGRAM GUIDE

The Rhode Island Sea Grant College Program is a federal-state partnership, based at the University of Rhode Island, that works to promote the wise use and development of marine resources for the public benefit. Funding comes primarily from the U.S. Department of Commerce National Oceanic and Atmospheric Administration, with matching funds provided by states. For information about Rhode Island Sea Grant's research and outreach programs, publications, and news, please visit the Rhode Island Sea Grant Web site at http://seagrant.gso.uri.edu. Printed on recycled paper.

Rhode Island Sea Grant College Program:
CELEBRATING 30 YEARS IN THE OCEAN STATE &

2001–2003 PROGRAM GUIDE

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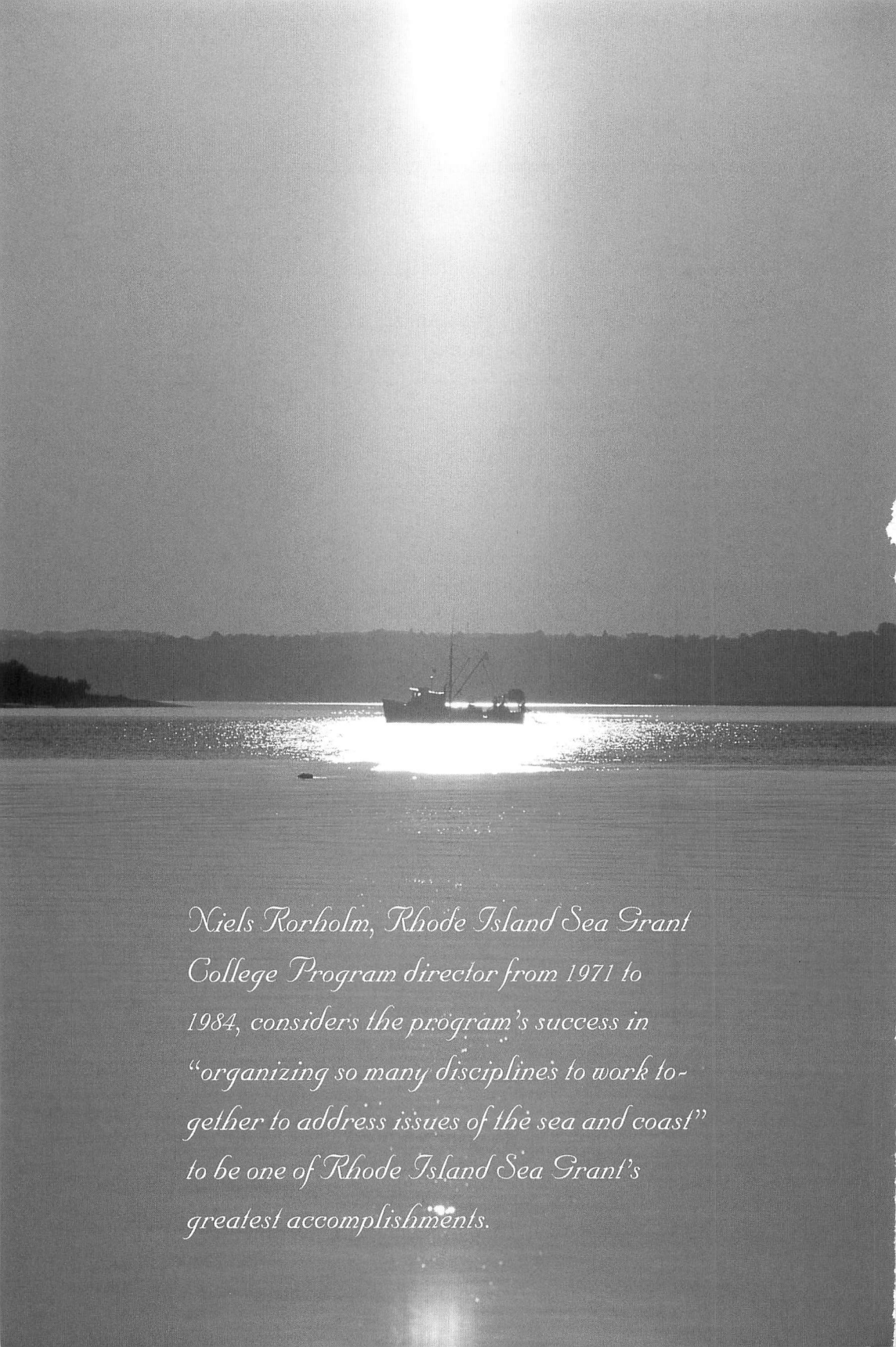


Niels Rorholm, Rhode Island Sea Grant College Program director from 1971 to 1984, considers the program's success in "organizing so many disciplines to work together to address issues of the sea and coast" to be one of Rhode Island Sea Grant's greatest accomplishments.

Rhode Island Sea Grant College Program: CELEBRATING 30 YEARS IN THE OCEAN STATE & 2001–2003 PROGRAM GUIDE

For the first few years I served as both Rhode Island Sea Grant Director and Dean of the URI Graduate School of Oceanography. I soon learned that more Rhode Islanders know about the university's ocean programs through Sea Grant than through any of our other ocean activities. I also believe Sea Grant has done much to make Rhode Islanders aware of the importance of Narragansett Bay and the surrounding ocean to the state's economy and its general well-being. We call ourselves the 'Ocean State.' Sea Grant can take some credit for that ocean awareness. It was not that way 30 years ago. The challenges of the future are many, but I am confident that Rhode Island Sea Grant will be up to the task.

—John Knauss
Former Rhode Island Sea Grant College Program Director and former Dean of the URI Graduate School of Oceanography

"Sea Grant was and still is a unique and grand experiment in government—university—industry—public cooperation."

—Scott W. Nixon
Former Rhode Island Sea Grant College Program Director

The Rhode Island Sea Grant College Program works to choose the best available science to support the formulation of public policy on the marine environment. Sea Grant plays a vital role in assisting stakeholders making critical decisions on the future of America's marine economy. Sea Grant serves as a bridge and a catalyst among government at all levels, nongovernmental organizations, and the public to work on priority actions to ensure the environmental and economic sustainability of our coastal oceans. Sea Grant has a remarkable 30-year track record of achievement, but we need to do more. The current demand for Sea Grant programming is extraordinary. We can undertake only a small portion of what is needed by our clients. Rhode Island can lead the way in realizing the Sea Grant vision of an integrated research, education, and outreach program for public benefit. Indeed, Rhode Island's future lies in assisting America to see herself and her destiny as a coastal and ocean nation.

—Barry Costa-Pierce

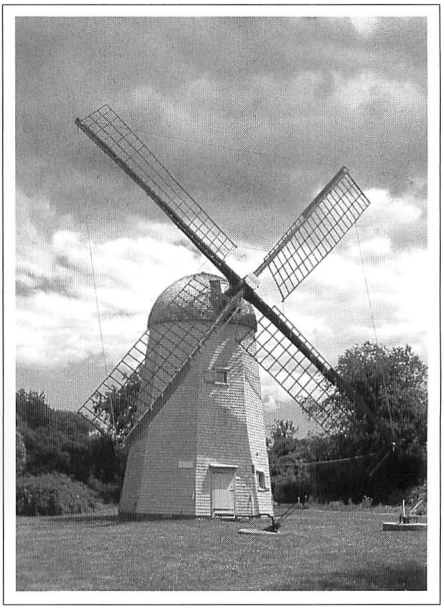
Rhode Island Sea Grant College Program Director

The Mission:

The Rhode Island Sea Grant College Program designs and implements research, outreach, and education programs that:

- *Conserve and restore Rhode Island's and America's coastal waters, watersheds, and historic coastal communities.*

- *Foster sustainable community–based economic development in Rhode Island, the Northeast, and the United States, with particular concern for marine recreation and tourism, coastal ecosystems and habitats, marine fisheries and aquaculture, marine trades, marine transportation, and marine biotechnology development and commercialization.*



Rhode Sea Grant College Program
THE FIRST 30 YEARS: 1971–2001

The National Sea Grant College Act of 1966 was intended to apply university expertise to [the development of] the nation's marine resources .... The Sea Grant College Program [was] born in an era of enthusiastic belief that the oceans are a vital resource requiring the concentrated attention of government, industry, and universities.

—John Miloy, from *Creating the College of the Sea*

URI's Role in Creating Sea Grant

Athelstan Spilhaus first proposed the Sea Grant concept at the 1963 meeting of the American Fisheries Society. In the audience was University of Rhode Island (URI) Oceanography Professor Saul Saila, who immediately wrote Spilhaus after the conference expressing his enthusiasm for the idea. Saila also discussed Spilhaus's idea with the first dean of URI's Graduate School of Oceanography (GSO), John A. Knauss. As interest in the Sea Grant College vision grew, Knauss and URI President Francis Horn organized the first National Sea Grant Conference, convened in 1965 in Newport, R.I. The following year, Senator Claiborne Pell introduced the National Sea Grant College Program Act in Congress. The first Senate hearing on the bill was held on the URI Kingston campus, the first time a U.S. Senate hearing was convened at a state university. Congress passed the National Sea Grant College Program Act, signed by President Lyndon Johnson on October 15, 1966.

The Early Years

The three fundamental purposes of the National Sea Grant College Program Act are education and training, research in support of marine resource development, and the imparting of useful information. Those principles guided the development of the first Sea Grant programs and remain strong today.

Rhode Island Sea Grant's first research, outreach, and education priorities were the training of commercial fisherman, gear research, fish

processing, marine economics, aquaculture, marine pharmacology, deep ocean technology, coastal zone management, and marine affairs.

From its inception, the mission of Rhode Island Sea Grant's Extension Program (first called Marine Advisory Services) has been to act as a conduit between the research community and private and public sectors of Rhode Island and New England. Through Extension efforts, marine scientists identify priority research areas of Sea Grant's marine constituencies and provide the latest information and insights related to the marine environment.

The Coastal Resources Center (CRC) at URI was established in 1971 to provide technical assistance to the R.I. Coastal Resources Management Council (CRMC). Rhode Island Sea Grant Coastal Management Extension is comprised of CRC's U.S. Program Division, which has developed Rhode Island as a living laboratory in integrated coastal management. The Fisheries, Aquaculture, and Seafood Extension, located in the URI College of Environment and Life Sciences, completes Rhode Island Sea Grant's Extension programming.

"Sea Grant has been marked from the beginning by a multidisciplinary focus and one that includes human activities in a watershed approach. We were very avant garde for the day—it's taken everybody 25 years to catch up with what we were trying to do then."

—Scott W. Nixon

The Rhode Island Sea Grant College Program and URI Today

Rhode Island Sea Grant's research, education, training, and public outreach mission remains the same as it did 30 years ago, and Sea Grant has partnered with government agencies, industries, and academia nationwide. Hundreds of educators, scientists, Extension and communications professionals, and graduate students from URI's eight colleges, and from academic institutions throughout New England, have benefited from and worked closely with the program.

Rhode Island Sea Grant College Program core funding currently provides about $2 million dollars annually for programming, with $1 million committed to research. Rhode Island Sea Grant's outreach programs comprise URI's second largest outreach effort with current annual funding of about $690,000.

Program Development Fund

The director has discretionary funds available for select projects that are not part of the omnibus proposal. These funds may help support new projects by promising young researchers, or be used for special projects that do not fit into Sea Grant's traditional research and outreach programming. One such project is the Sea Grant Visual Arts Program. Since 1988, Rhode Island Sea Grant has awarded competitive grants to New England artists whose works explore marine and coastal themes. In 1998, a selection of the funded art works were shown together for the first time in a 10-year retrospective at the URI Fine Arts Center. In a variety of media, the works constitute a fascinating interpretation of humankind's interaction with the marine environment.

Rhode Island Sea Grant: Making a Difference

Rhode Island Sea Grant College Program strengths in research, Extension, and communications span a number of priority areas that fall primarily into two categories: Maintaining the Quality of the Coastal Environment and Achieving Sustainable Seafood Production.

MAINTAINING THE QUALITY OF THE COASTAL ENVIRONMENT

Water Quality and Eutrophication

Nutrient loading has increased worldwide due to treated sewage discharges, agricultural fertilizers, and other anthropogenic sources. Its harmful effects include excessive phytoplankton blooms, seagrass bed declines, growth of nuisance marine algae, and, in extreme cases, anoxia.

Coastal eutrophication is better understood today thanks to the leadership of Scott W. Nixon, Rhode Island Sea Grant director for over 16 years. Researchers and managers now know that high nitrogen inputs diminish coastal water and habitat quality and how habitat losses affect living resources such as finfish and shellfish. Current research is developing mathematical models to predict system functions and responses to nutrient inputs and their impacts. Sea Grant investments in water quality and eutrophication have helped to establish an experimental facility that evaluates alternative septic system technologies, in partnership with URI Cooperative Extension; reduced nutrient inputs to Rhode Island's coastal waters through septic system regulation amendments; and prioritized coastal water bodies according to risk of eutrophication.

Volunteer Environmental Monitoring

In the 1980s, state and federal agencies with limited budgets were struggling to comprehensively assess coastal water quality.

Rhode Island Sea Grant assisted in the effort, pioneering in training volunteers to conduct sampling and analysis for a range of coastal water quality indicators, in the process showing that the volunteers not only provide critical data, but also become knowledgeable

about the science and management of natural resources. Thus, they become an informed constituency for the implementation of environmental policies and laws. Today, volunteer monitoring is an important component of environmental monitoring in the United States.

Sea Grant investments in volunteer monitoring helped create the statewide steering committee for volunteer monitoring, provided technical support to Save The Bay's development of a volunteer monitoring program for Narragansett Bay and its tributaries, and helped initiate a national volunteer monitoring network.

Responding to the *North Cape* Oil Spill

On January 19, 1996, the worst oil spill in Rhode Island history occurred. The barge *North Cape* ran aground off Rhode Island's south shore, spilling 828,000 gallons of oil. Before the first drop of oil seeped from the grounded barge, a Rhode Island Sea Grant researcher started developing computer models of the oil trajectory for the U.S. Coast Guard, the EPA, and the URI fisheries department. Other researchers assessed the damage to fish. A Sea Grant–sponsored researcher worked with the R.I. Department of Health to establish guidelines for contaminated seafood and closed fishing areas. Rhode Island Sea Grant Extension staff gathered information and offered technical assistance that guided management of the crisis.

The Rhode Island governor's office tapped Rhode Island Sea Grant to serve as the source of scientific statements about the spill, and Sea Grant Communications staff put experts in touch with state officials and with the media to address concerns about the spill's effects. Within days, Sea Grant Communications went on-line with an oil spill information Web page that received thousands of hits during that month and spurred the *Providence Journal* to open its previously limited site to Web users.

Greenwich Bay

A severe storm in 1992 caused large numbers of bacteria from contaminated groundwater, farmland, and storm drains to enter Greenwich Bay, resulting in complete closure of the bay to shellfishing. This one-and-a-half year closure cost the industry an estimated $1 million.

The closure of Greenwich Bay and the continuing threats to water quality by failed septic systems, inadequate sewering, and conflicting

Rhode Island Sea Grant has had a long history of work in environmental modeling. Most of those models have found their way into commercial enterprises and have been distributed and used worldwide. One such model was brought to the Smithsonian Institution by a URI student and is being implemented for monitoring Belize coastal reefs.

—Malcolm Spaulding
URI Ocean Engineering Professor

land uses sent an alarm call to neighboring communities, resulting in a large-scale cooperative effort, the Greenwich Bay Initiative—led by the city of Warwick—to reclaim bay resources. Rhode Island Sea Grant formed a collaborative project that included research to evaluate pollution sources, identify areas of eutrophication, and develop software to store and analyze data on the bay. The project also included outreach to train municipal officials on improving water quality and to create a Web site, located at http://seagrant.gso.uri.edu/G_Bay, for users to learn more about water quality in the bay, the bay ecosystem and history, and more.

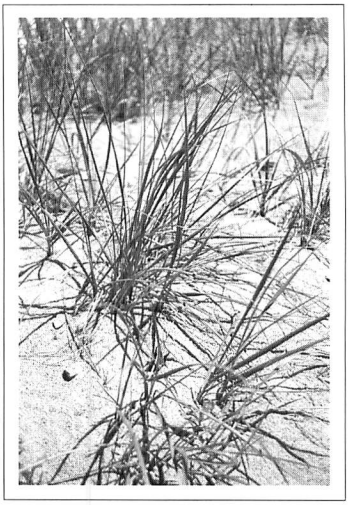
Sustainable Coastal Development

Since its inception in 1971, Rhode Island Sea Grant Coastal Management Extension has helped develop and refine the set of management principles now commonly known as integrated coastal management (ICM).

Sea Grant pioneered the state's coastal resources management program, authoring an integrated Special Area Management Plan (SAM Plan) for Rhode Island's salt ponds and their watersheds based on research findings. The plan was adopted in 1984 as one of the first SAM plans in the country. Resulting regulations have slowed degradation of water quality in the ponds and preserved critical open space. This plan was used as a model for EPA's National Estuary Program.

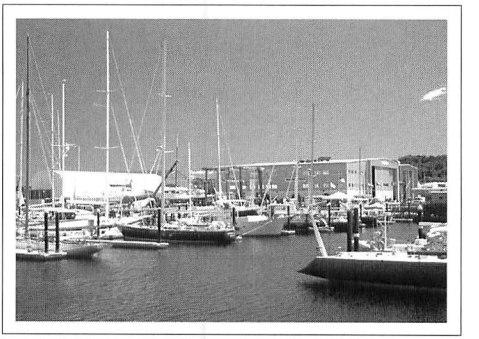
Increasing private ownership of coastal properties in the 1980s meant diminishing public coastal access opportunities. To address public access conflicts, Sea Grant inventoried Rhode Island's public coastal access sites, and published the first guide to these sites in 1992. In

addition, a series of workshops were held to explore solutions to public access conflicts. These workshops prompted new legislation to safeguard coastal access.



Sea Grant's investments in sustainable coastal development included assessing the use of vegetated buffers in the coastal zone as environmental management tools that reduce the impact of development on water resources. Armed with the results of the study, CRMC adopted a buffer policy for Rhode Island's coastal areas that was used as a model in coastal and Great Lakes states. Rhode Island Sea Grant investments have also spurred global ICM initiatives that have been used by the U.S. Agency for International Development as examples in Latin America, the Pacific, and East Africa.

Recreational Boating and Marine Businesses



Rhode Island Sea Grant responded to the needs of the recreational boating industry, a major component of Rhode Island's coastal economy, by facilitating the development of programs and regulations that balance the growth of the industry with resource protection goals.

In 1997, marina management guidelines drafted cooperatively by Sea Grant, state agencies, and the Rhode Island Marine Trades Association became state policy, making Rhode Island the first state to have official guidelines in place that met the requirements of the Clean Water Act.

Sea Grant investments helped the U.S. Environmental Protection Agency (EPA) and the national marina industry formulate nonpoint source pollution regulations as part of the Clean Water Act. And Sea Grant trained coastal managers on best management practices to reduce pollution sources from marine operations. Rhode Island Sea Grant also partnered with other Sea Grant College programs to form MarinaNet, a network for information sharing among Sea Grant programs, marine trades, and marina operators.

Fostering Sustainable Coastal Community Development

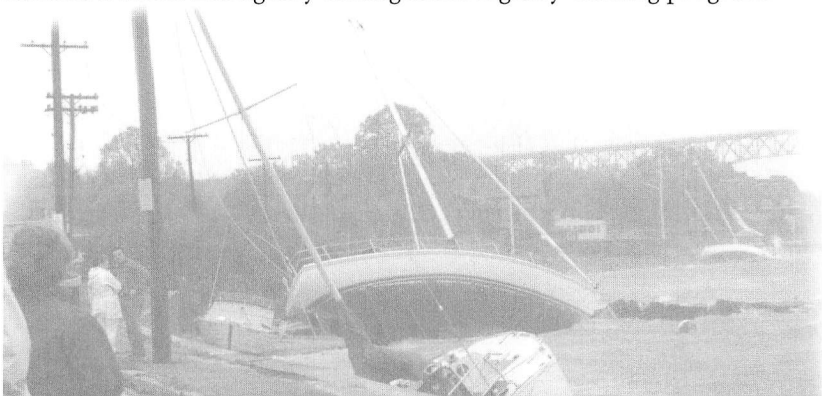
Rhode Island Sea Grant is helping rapidly growing coastal communities preserve their character by taking stock of the present to plan for the future. The Sustainable Coastal Communities Initiative assists state and local governments by supporting efforts on Aquidneck Island and in Washington County to achieve regional resource management goals, complementing new policy for watershed management that is being implemented at the state level.

Sea Grant investments in sustainable coastal communities include providing decision-makers with tools to evaluate economic development policies and manage growth while protecting open space, bringing business leaders together with environmental and social service groups for coordinated decision making on land use, and documenting the economic benefits of preserving open space.

Promoting Planning for Coastal Hazard Mitigation

Recognizing that coastal populations are at risk from natural hazards, such as hurricanes, nor'easters, and flooding, Rhode Island Sea Grant has worked with agencies and businesses nationally to communicate the value of community-based hazard mitigation and to assist in the development of local and statewide hazard mitigation policies.

Sea Grant investments in coastal hazard mitigation include initiating a partnership with the insurance industry to develop incentives to reduce storm-induced property losses. Rhode Island was designated as a showcase state by the Institute for Business and Home Safety for other communities across the nation to emulate. Rhode Island Sea Grant has also contributed to HazNet, a Sea Grant network–sponsored Web site that shares tools and techniques for mitigation. Sea Grant helped create the Narragansett hazard mitigation plan, which became part of a national Federal Emergency Management Agency training program.



ACHIEVING SUSTAINABLE SEAFOOD PRODUCTION

Overfishing, bycatch, habitat destruction, pollution, and poor resource management have caused fluctuations in fish species that historically have sustained the New England fishing industry. Rhode Island Sea Grant has responded by addressing problems in the capture fisheries, promoting alternative sources of seafood production, and introducing techniques for enhancing marketability and safety of seafood products.

Fishing Gear Research, Bycatch, and Technology Transfer

Early Sea Grant initiatives sought to improve the competitive balance between U.S. and foreign fishing fleets. By the mid-1980s, however, improved U.S. competitiveness depleted fisheries and caused severe economic hardship for many of New England's fishing communities.

As the focus of fisheries research and outreach has moved from increasing landings to allowing stocks to rebuild and reducing bycatch—the unwanted catch returned to the water with limited chance for survival, thereby further straining fishery resources—the products of Rhode Island Sea Grant's fisheries work have evolved, while their goal remains the same: helping New England's commercial fishing operations achieve sustainable fishery practices.

An early breakthrough in gear design—the URI 340—substantially boosted the catches of the fishermen who used it. Sea Grant freely shared instructions for constructing the net in response to 400 inquiries from fishermen and net manufacturers. "Unlike commercial enterprises, Sea Grant is happiest when its ideas are pirated."

—Walter Gray
Former GSO Office of Marine Programs Director

Rhode Island Sea Grant investments have resulted in new gear designs, navigation systems, fish-finding aids, and satellite data and training. Sea Grant has modified trawl designs and devices to allow undersized fish or non-targeted species to escape, and its otter trawl design was incorporated into fisheries regulations in some New England states. Sea Grant has also brought fishermen, scientists, and experts together to solve priority problems.

Fisheries Resources Management

Rhode Island Sea Grant's fisheries resource management efforts have assisted in devising management plans to balance ecological, economic, and societal considerations.

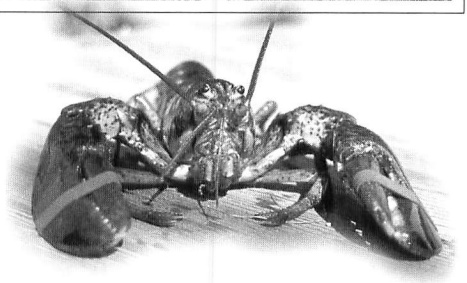
Sea Grant investments have resulted in a radically improved mathematical fishery model, based on multiple species, whose outputs provide support for making regulatory decisions more in tune with actual fishery conditions and trends. Sea Grant has formulated recommendations to improve the management techniques and policies of the New England Fisheries Management Council, and has helped managers predict the results of their policies on fishermen and the stocks they depend on.

Fishing Vessel Safety

In the 1980s, commercial fishermen found it hard to find and afford insurance, and to get compensated for a claim. Rhode Island Sea Grant responded by working with fishermen to establish practices to reduce both their risks and their insurance rates, and producing *The Commercial Fisherman's Guide to Marine Insurance Law,* the only such document in existence.

Sea Grant investments assisted fishermen in Point Judith, R.I., to form The Point Club, which was the first self-insuring commercial fishing operation in the nation. Sea Grant also conducted mandated safety training for crews, benefiting more than 3,000 East Coast fishermen, and compiled these safety measures in a manual. Sea Grant also collaborated with the U.S. Coast Guard to produce a videotape of air-sea rescue procedures.

The Rhode Island Lobster Fishery



The lobster fishery may be the most important single-species fishery in Rhode Island, but landings have fallen steadily for the past decade. The drop from record-high landings of 3,377 metric tons in 1991 to about 2,200 metric tons in 1999 may reflect overfishing, according to the National Marine Fisheries Service. Passage of the Sustainable Fisheries Act in 1996 dictated an aggressive response to overfishing but presented potentially hard economic and social consequences to the fishery.

Sea Grant researchers and Extension staff have been studying lobster biology and behavior since the program began to improve understanding and management of the lobster fishery. Information generated using new equipment and techniques has led to regional initiatives that are creating a comprehensive picture of population dynamics. These data will eventually lead to major reforms in lobster stock assessment and management.

Sea Grant investments have utilized the data of atypical sources, such as fishermen's log books and the observations of recreational divers, to supplement information generated by traditional surveys conducted by fisheries scientists and managers. Sea Grant has undertaken a project to determine the usefulness of creating additional lobster habitat and of seeding artificial reefs with hatchery-reared lobsters to boost natural recruitment.

Marine Aquaculture—An Emerging Sector

Marine aquaculture is considered globally as a viable alternative to capture fisheries. Pioneering salmon culture in the early 1970s, the Rhode Island Sea Grant College Program spearheaded the development of techniques for culturing commercially valuable species in land-based and offshore environments. Sea Grant research has accelerated development and improved operational cost-effectiveness of cultured stocks. Sea Grant has sponsored a marine pathology lab to assure rapid diagnosis of disease and identification of causes of death among cultured and wild fish stocks. Sea Grant has transferred its technology to the private sector, spurring innovations.

Seafood Safety

Public concerns about seafood safety and quality have hurt seafood providers and, although infrequent, the marketing of unsafe seafood has subjected consumers to serious health risks.

Sea Grant has studied consumers' perceptions to address their concerns and has worked to improve seafood safety and quality by developing techniques that identify and retard spoilage and detect pathogens. Sea Grant technology investments have prevented contaminated seafood from reaching the market. Sea Grant has also provided training in Hazard Analysis Critical Control Points (HACCP) for seafood processors.

EDUCATION AND COMMUNICATIONS

Sea Grant responds to the educational needs of those pursuing professional careers in marine science as well as to the needs of general audiences seeking clarification, explanation, and simplification of scientific results. Through its education, Extension, and communications capabilities, Sea Grant brings the latest scientific and technical advances from the academic sector to the public realm.

Educating the Next Generation

For the past 30 years, Rhode Island Sea Grant has invested in training tomorrow's scientists, engineers, and policy makers. Over a 12-year period, from 1986–1998, Sea Grant supported 242 graduate students in the natural sciences, social sciences, and engineering. These students went on to careers in state and federal government, academia, and private industry.

Knauss Marine Policy Fellowship

One of the hallmarks of the National Sea Grant College Program is the Dean John A. Knauss Marine Policy Fellowship. Established in 1979, the program provides a unique educational experience to students interested in ocean, coastal, and Great Lakes resources and the national policy decisions that affect them. Highly qualified graduate students are matched with hosts in the legislative branch, the executive branch, or appropriate agencies or institutions located in the Washington, D.C., area for a one-year paid fellowship. Since the inception of the fellowship Rhode Island Sea Grant has supported 33 fellows, many

Laura Ernst

Principal Environmental Scientist, R.I. Coastal Resources Management Council

Laura Ernst's 1996 Knauss Fellowship in the National Marine Fisheries Service's (NMFS) Office of Habitat Conservation at NOAA showed her first-hand how federal agencies interact with one another and how federal wetlands policies are created. She learned how the U.S. Army Corps of Engineers implements wetlands permitting, and helped develop a review of submerged aquatic vegetation regulations in Atlantic coastal states for the Atlantic States Marine Fisheries Commission. During her fellowship she worked with scientists and managers at many federal agencies and met students from around the country with different backgrounds in marine science. "I still interact with a lot of those people today," Ernst says.

Thanks to her fellowship, Ernst says she has taken policies that were created at the federal level and helped to put them to work in Rhode Island through her work at CRMC. "NMFS collaborated with many organizations to adopt policies for conservation of submerged aquatic vegetation, which has been an important issue here in Rhode Island." When she returned from Washington, Ernst worked on projects funded partially by Sea Grant that examined water quality in the coastal ponds. With CRMC, Ernst has helped write SAM plans for the Salt Pond Region and the Narrow River. Currently, Ernst is working jointly with the Army Corps of Engineers, R.I. Department of Environmental Management, Sea Grant, and others on restoration initiatives with salt marsh and seagrass habitats.

of whom have pursued careers in marine policy in Rhode Island and beyond.

K–12 and Public Marine Education Programs

Rhode Island Sea Grant early on set a goal of educating both children and adults about marine and coastal issues, creating one of the first efforts in Rhode Island to provide teachers with knowledge and resources to integrate marine education into classroom curricula. Rhode Island Sea Grant efforts also led to the formation of the New England Marine Educators Association. By the late 1970s Rhode Island Sea Grant's education efforts expanded to include the establishment of a Marine Awareness Center at the URI Bay Campus that grew to house the largest collection of marine-related materials for grades K–12 in the United States.

Communicating Cutting-Edge Science

For almost 20 years, the Rhode Island Sea Grant Communications Program has put the results of Sea Grant–sponsored research and outreach activities into the hands of various audiences through its publications, Web sites, videos, and other quality products.

An average of 30 new publications each year are made available to the public and are used to make policy and environmental decisions, to learn something new in the classroom, or to enrich lives. Annually, thousands of requests for Sea Grant publications come from around the globe. Sales of publications soared from about $3,500 in 1998 to over $65,000 in 1999, due largely to the success of the award-winning *Guide to Marine Mammals & Turtles of the U.S. Atlantic & Gulf of Mexico*. Sea Grant now disseminates many of its publications on the Web, including

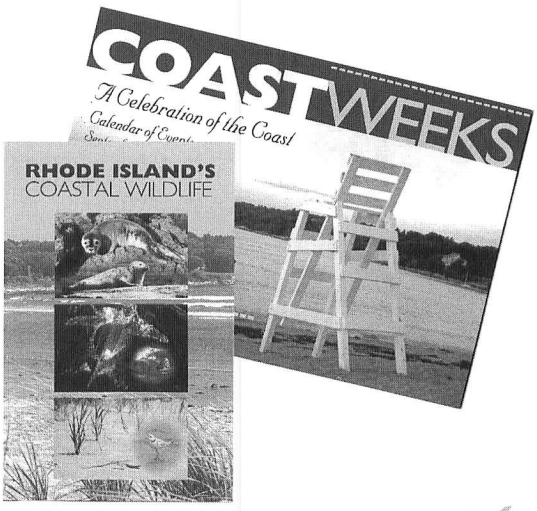
the now out-of-print *Public Access to the Rhode Island Coast,* which is featured as part of the Web site, "A Daytripper's Guide to Rhode Island."

Sea Grant on the Web

Rhode Island Sea Grant made its Web debut in 1995. The extensive site, found at http://seagrant.gso.uri.edu/riseagrant/, includes information about Sea Grant's activities and contains several specialized Web sites that provide visitors with exclusive information about Rhode Island's environment, public access sites, current marine research, and more. From a start of fewer than 1,000 visitors per month, the Rhode Island Sea Grant site now reaches over 10,000 visitors per month who spend an average of 12 minutes at the site, searching for information on everything from phytoplankton to recreational fishing.

Forging Partnerships to Reach a Wider Audience

The Communications Program has formed numerous partnerships with state and federal agencies and private organizations to reach a broader audience. Successful partnership efforts include the 10-year production of the award-winning *Nor'easter* magazine, initiated by Rhode Island Sea Grant to highlight the results of research and outreach from the seven Northeast Sea Grant programs. *Nor'easter* was the first collaborative publication of any region of the National Sea Grant Program. Other successful partnership products include *41°N: A Publication of the Rhode Island Sea Grant and Land Grant Programs at URI.* Published three times per year, *41°N* investigates a variety of topics that cross the boundaries of land and sea. Sea Grant has also collaborated with the Audubon Society of Rhode Island to produce a video on three species of Rhode Island's coastal wildlife. The program aired on local channels and is now available in libraries statewide. And each year, Rhode Island Sea Grant teams with CRMC to coordinate the annual Coastweeks



Celebration in Rhode Island. Sea Grant was responsible for first bringing Coastweeks to Rhode Island in 1988. This national celebration generates public awareness of the coasts, their uses, and the urgent need for improved coastal planning and management. Each year Sea Grant produces the Coastweeks Calendar of Events and sponsors events.

Sea Grant in the News

Through connections with the media, the Communications Program has disseminated results of Sea Grant–sponsored research and outreach activities to a larger audience, and generated a greater awareness for the Rhode Island Sea Grant College Program. Sea Grant Communications has become known as an important provider of accurate and unbiased scientific information on marine and coastal issues.

URI sea mammal guide takes national honors

Chalk up another "best" for South County.

The *Guide to Marine Mammals & Turtles of the U.S. Atlantic & Gulf of Mexico*, published by Rhode Island Sea Grant, has received the 2000 National Outdoor Book Award for best nature guidebook. The award program is sponsored by the Association of Outdoor Recreation and Education, with Idaho State University. Winners are chosen annually in nine categories.

Co-written by **Malia Schwartz,** Rhode Island Sea Grant marine mammal specialist and sea turtle researcher, with Alaska Sea Grant's marine mammal specialist **Kate Wynne,** the 114-page guide is the only one to cover U.S. Atlantic species of whales, dolphins, porpoises, seals, sea turtles and manatees. Color illustrations, descriptions, maps and field photographs accompany each of the 45 species depicted.

Copies may be ordered by sending a $25 check or money order to the Rhode Island Sea Grant Communications Office, URI Narragansett Bay Campus, South Ferry Road, Narragansett, R.I., 02882-1197. For information, call 874-6842.

The Providence Journal

TUESDAY, MAY 29, 2001

SOUTH COUNTY JOURNAL

R.I. Sea Grant program at URI gets new director

BARRY COSTA-PIERCE

ENVIRONMENTAL JOURNAL

July 22, 2001
THE PROVIDENCE JOURNAL

Barry Costa-Pierce, former director of the Mississippi-Alabama Sea Grant College Consortium and a native of Dighton, Mass., has been appointed director of the Rhode Island Sea Grant program at the University of Rhode Island.

State should finance Land and Sea Grant programs

Rep. Kenneth Carter
D-North Kingstown, Exeter and South Kingstown

Friday, May 11, 2001
THE PROVIDENCE JOURNAL

The Providence Journal

SOUTH COUNTY EDITION

VISION 2020

A five-part news article series about Washington County, Rhode Island from The Providence Journal South County news bureau by Tiffany Bartish.

Restoring a vital environment

Sowing seeds of an eelgrass harvest

KALLE MATSO

WITH AN INNOVATIVE underwater planting device, researchers at the University of Rhode Island hope to break new ground in seagrass restoration.

Kalle Matso is communications director for CICEET. This article first appeared in 41 N, a publication of the Rhode Island Sea Grant and Land Grant programs at the University of Rhode Island. Reprinted with permission.

The Providence Journal

Tuesday, October 30, 2001

Rhode Island Sea Grant College Program's Next 30 Years

In the next 30 years, the Rhode Island Sea Grant College Program will continue to stay at the forefront of providing the people who turn to it with the best coastal and marine science, education, and information. The challenge is substantial. Marine resource management problems continue to burgeon. Global climate change has emerged as a major concern. Aquaculture offers considerable promise, but its unanswered questions require an investment of scientific research. The continued difficulties in New England marine fisheries remain priorities as they were 30 years ago.

To continue its work, the Rhode Island Sea Grant College Program will require support from the many sectors it serves, including the state, as well as from private sources. With this support, the researchers and outreach staff at the core of Rhode Island Sea Grant can guide the program to a future worthy of its founding vision.

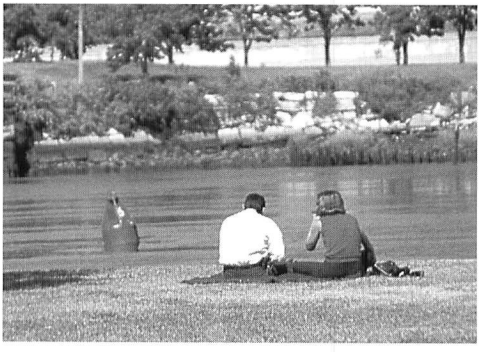

CHEVROLET
GMC

2001–2003 Program Guide

The Rhode Island Sea Grant College Program is committed to encouraging the submission of proposals that reflect the best science and outreach work occurring today. Proposals should reflect the goals found in the Rhode Island Sea Grant Program Plan, available on-line at http://seagrant.gso.uri.edu, or by calling (401) 874-6842.

Budget and Administration

The Rhode Island Sea Grant College Program is located at GSO, but serves all parts of URI as well as other research and educational institutions in Rhode Island. A substantial majority of Rhode Island Sea Grant's federal budget, which is administered through the U.S. Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) , is directed to highly competitive peer-reviewed research (53 percent), followed by outreach programming (26 percent), and education (8.4 percent). Program management (excluding development grants and outreach services provided directly by the director and associate director) accounts for only 8.6 percent. The figures summarized here represent Rhode Island Sea Grant's core funding from NOAA and the required 50 percent matching funds provided by the state of Rhode Island. In addition, Rhode Island Sea Grant administers a number of pass-through grants that support expanded services and activities. Thus, Rhode Island Sea Grant provides valuable administrative and peer-review services to the federal government, the state of Rhode Island, and to its academic partners in marine research, outreach, and education.



2001-2002 Core Program Budget Summary
Totals by Activity

	NOAA Grants	Matching Funds
Marine Research		
Coastal Ecosystems	572,051	286,026
Sustainable Fisheries	394,003	197,002
Integrated Coastal Management	209,348	104,674
Outreach		
Sustainable Fisheries	192,000	96,000
Integrated Coastal Management	192,000	96,000
Communications	192,000	96,000
Education	184,667	92,334
Program Management & Development	263,297	131,640
Total	**2,199,348**	**1,099,676**

2002-2003 Core Program Budget Summary
Totals by Activity

	NOAA Grants	Matching Funds
Marine Research		
Coastal Ecosystems	604,213	302,106
Sustainable Fisheries	408,389	204,194
Integrated Coastal Management	215,628	107,814
Outreach		
Sustainable Fisheries	197,760	98,880
Integrated Coastal Management	247,760	123,880
Communications	197,760	98,880
Education	206,117	103,059
Program Management & Development	271,117	135,589
Total	**2,348,744**	**1,174,402**

Preserve, Manage, and Restore Coastal and Marine Habitats and Ecosystems

The Rhode Island Sea Grant College Program sponsors research that examines the linkages between land-use practices, pollutant discharges, water quality, ecosystem functions, and coastal and nearshore habitat qualities. Sea Grant supports improving communication on such linkages to government officials, user groups, and the concerned public. The program focuses on issues such as eutrophication, hypoxia, and environmental monitoring. To help achieve its research objectives, during the 2001–2003 omnibus period Rhode Island Sea Grant is investing approximately $575,000 annually in the following projects.

Narragansett Bay Collaborative Project: Circulation, Mixing, and Biological-Chemical Transport in Narragansett Bay: Observations and Modeling

Project No.: R/ES-011

Modeling of circulation and biological-chemical transport within Narragansett Bay

Christopher Kincaid (401) 874-6571/6280 kincaid@gso.uri.edu

The Narragansett Bay ecosystem is subjected to anthropogenic and natural stressors. Wind, runoff, currents, and maritime activities generate physical and chemical impacts that lead to harmful algal blooms, pockets of low-oxygen water, and fishery habitat quality declines. To better understand the interactive characteristics of multiple stressors, this project will develop a state-of-the-art circulation and transport model for Narragansett Bay that will serve as a foundation for scientific studies and as a tool for assessing future Bay-specific development scenarios. With increased understanding about how circulation within the Bay transports both natural (e.g., shellfish seed) and anthropogenic (e.g., sediments resuspended in the water column by dredging activities) materials throughout the Bay, greater insights are possible regarding concerns such as the ecological impacts of bathymetric alterations due to dredging, or the addition/relocation of pollution point sources within the Bay (e.g., the relocation of oil terminal facilities from the Port of Providence to Quonset Point). The model will be developed and

maintained at GSO, the site of the most comprehensive data sets for the Bay and the largest concentration of researchers focusing on Narragansett Bay. The project will continue operating ADCP current-meter stations to develop additional information on circulation processes within Narragansett Bay.

Project No.: R/EE-011

Interaction between Narragansett Bay and Rhode Island Sound via vertical mixing and horizontal exchange

David Ullman (401) 874-6138 dullman@gso.uri.edu

This project will generate comprehensive data on the flux of water and materials between Narragansett Bay and Rhode Island Sound. These data are essential to clarifying what is happening physically, biologically, and chemically within Narragansett Bay, at the Bay mouth, and in the East Passage during different seasons. Project objectives include estimating vertical turbulent mixing rates in the vicinity of the Bay mouth and characterizing the variability in mixing over the tidal cycle and over the spring-neap cycle. The project will also estimate the tidally averaged transport of properties such as salt, chlorophyl *a*, paticulate organic carbon, particulate organic nitrogen, and dissolved inorganic nutrients across the mouth of Narragansett Bay during the spring bloom and the summer. It will determine the relative importance of the East and West passages in the exchange of these properties between the Bay and Rhode Island Sound, and question whether the deep shelf water originating in Rhode Island Sound is a source of dissolved inorganic nutrients for Narragansett Bay.

Coastal Lagoon Collaborative Project

Project No.: R/CL-011

Ecosystem responses to nutrient loading under varying environmental conditions

Scott Nixon (401) 874-6803 snixon@gso.uri.edu

Rhode Island's south shore salt ponds, or coastal lagoons, and their attendant watersheds continue to experience population growth and residential development. These new residences will rely primarily on septic systems to process household effluent. The resulting nitrogen-

enriched groundwater will ultimately enter the salt ponds. The ecological effects of nitrogen enrichment upon these coastal lagoons remain uncertain. This project will develop and use diagnostic tools to assess such impacts, providing valuable information to coastal managers for formulating regulations in these critical watershed regions. Project objectives include measuring growth, abundance, and vitality of eelgrasses and concentrations of ^{15}N in macroalgae tissue in the coastal lagoons.

Project No.: R/CL-013

Nitrate removal from groundwater at Rhode Island's coastal margins: Consequences of coastal enrichment

Barbara Nowicki (401) 874-6108 bnowicki@gso.uri.edu

Nitrate is the most common groundwater pollutant in the United States and is a major cause of eutrophication in coastal marine waters. Denitrification, an anaerobic process whereby bacteria turn nitrate (NO_3) into gaseous nitrogen (N_2O or N_2), is the most important means for removal of nitrate from groundwater. This project will attempt to determine specific rates of nitrate removal from groundwater within selected locations of the coastal margin of southern Rhode Island and thus identify specific landscape or soil types that achieve the highest rates of nitrate removal. This project will explore factors that may result in saturation of soil and sediment denitrification potential, and will define the controlling characteristics for groundwater denitrification for both pristine and enriched aquatic margins.

Project No.: R/CL-013

Application of ^{223}Ra, ^{224}Ra, ^{226}Ra, and ^{228}Ra to groundwater input and coastal mixing dynamics in southern Rhode Island

S. Bradley Moran (401) 874-6530 moran@gso.uri.edu

This project will use radium isotopes as tracers to improve understanding of coastal lagoon circulation dynamics and to help assess their response to pollutant inputs. It will help answer such questions as whether freshwater and associated dissolved chemicals enter the coastal ocean as a wind-forced plume or are steadily incorporated via eddy diffusion. Project objectives include calculating the input of groundwater and groundwater-borne nitrogen over an annual cycle to salt ponds

and coastal waters of southern Rhode Island and calculating the seasonal changes in horizontal mixing via eddy diffusion and offshore fluxes of freshwater and associated dissolved substances.

Individual Projects

Project No.: R/EE-011

Assessing the status of Narragansett Bay salt marsh plant communities

Mark Bertness (401) 863-2280 Mark_Bertness@brown.edu

Salt marshes are important as nursery grounds, natural biochemical filters, and shoreline stabilizers. Unfortunately, most New England salt marshes have been lost to human development, so those that remain are an important conservation concern. This project will develop a baseline study of Rhode Island salt marshes to determine how extensively they are being impacted by eutrophication. This project will also initiate a long-term monitoring program to enable rapid detection of future impacts of exotic species invasions and sea-level change.

Project No.: R/ES-013

Influence of seasonal range expansion of the ctenophore* Mnemiopsis leidyi *and low oxygen on ichthyoplankton in Narragansett Bay

Barbara Sullivan-Watts (401) 874-6659 bsull@gso.uri.edu

This project addresses the growing concern that the warming of Narragansett Bay has contributed to an increased abundance of ctenophores during late spring and early summer, periods of the year critical to larval fish. The ctenophores' role as predator may be impacting fish mortality, zooplankton/phytoplankton population dynamics, and from there, eutrophication. This project will identify factors controlling the magnitude of ctenophore impacts on fish eggs and larvae, investigate the influence of Bay water temperatures on ctenophore seasonal distribution and abundance, and address the question: Do recent extraordinarily dense blooms of ctenophores significantly increase their influence on plankton dynamics in Narragansett Bay?

Achieve Sustainable Seafood Production

Rhode Island Sea Grant works with fisheries scientists, managers, and industry to achieve the sustainable production of affordable and safe seafood products for consumers in Rhode Island and around the world. For this priority area, Rhode Island Sea Grant is investing $466,000 annually in research projects and Extension programming.

Project No.: R/SS-012

Transboundary impacts of fishing activities along the Northeast Continental Shelf

Jon Sutinen (401) 874-2471 jsutinen@uri.edu

Transboundary fish stocks can be found simultaneously in waters of multiple jurisdictions. Therefore, fishing effort in one country can have a significant effect on the availability and characteristics of the fishery in other countries. Although the United States and Canada pursue policies to manage these aquatic resources, neither has adopted policies that explicitly account for their transboundary nature. This project will identify and analyze prospective strategies for cooperative management between the United States and Canada and will assess the biological and economic benefits of cooperative management.

Project No.: R/A-011

Maximizing survival of summer flounder: The importance of synchrony

Jennifer Specker (401) 874-6858 jspecker@gso.uri.edu

Summer flounder is a good marine finfish species for aquaculture because it grows quickly and can be spawned in captivity year-round. Flounder have a tendency to cannibalize, however, and this project's objective is to reduce cannibalism and aggressive behavior that occurs between fish of dissimilar size by synchronizing growth through the manipulation of environmental and endocrine factors.

Project No.: R/F-011

Quantitative analysis of fish habitat: Can we predict habitat use by fish?

Jeremy Collie (401) 874-6859 jcollie@gso.uri.edu

Amendments to the Sustainable Fisheries Act recognize that conserving essential fish habitat (EFH)—"those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity"—is critical to conserving fish populations. A standardized trawl survey was used to map habitat, but because there was no independent measure of favorable habitat, the trawl-survey index itself was used as a proxy for habitat suitability. Another shortcoming of this approach is that there was no ecological guidance as to what percentiles of abundance or area are essential. This project seeks to more accurately classify the processes by which several fish species in the northwest Atlantic, including cod and winter flounder, select their habitats. The results should also provide information on the link between environmental variables and habitat occupation for each species.

Foster Sustainable Coastal Communities Through Integrated Coastal Management

Defining "sustainable coastal community" remains a challenge. Part of the difficulty stems from the fact that sustainability depends on specific natural and human resources and systems inherent to a community or a region. While it is possible to identify how social investments allow for better protection and management of discrete marine resources, arguably, it is not yet possible to articulate how government and businesses should invest directly in resource sustainability.

Nevertheless, Rhode Island Sea Grant believes that there are several key management areas that will govern economic and environmental sustainability in Rhode Island coastal communities: land- and water-use planning and management, marine recreation and tourism, and marine transportation. Sea Grant works to provide information for development decisions for Rhode Island's coastal resources and to achieve a balance between preservation of coastal resources and economic vitality. In 2001–2003, Rhode Island Sea Grant is investing $320,000 annually in research and outreach programming aimed toward these goals.

Project No.: R/SS-011

A prototype decision support system for coastal development in Washington County, R.I.

James Opaluch (401) 874-4590 jimo@uri.edu

The increasing concentration of human activity in the coastal zone has substantially altered the ecological health, quality of life, and economic vitality of coastal communities. These communities often lack the resources or the expertise to accurately assess the impact of alternative development scenarios on local economies and coastal resources. This project will create an interactive computer simulation that will help participants visualize complex environmental, economic, ecological, and fiscal impacts of development policies, enable researchers to advance understanding of decision processes that govern development of the coastal zone, and help to assess the potential for interactive tools to determine public values for coastal amenities.

Promote Communications, Training, and Human Resources Development in Support of Coastal and Marine Resources Management

Coastal Management Extension Program

Virginia Lee (401) 874-6490 vlee@gso.uri.edu

Although Rhode Island's population has remained level, more than 26,000 acres of open space have been developed since 1990. Rapid sprawling development continues in critical habitats for rare and endangered species, and is consuming coastal open space, endangering drinking water supplies, and threatening the quality of marine recreation and tourism amenities. It also compromises community character and quality of life. Despite the best of intentions, state and federal government programs are hard pressed to address the full range of these impacts.

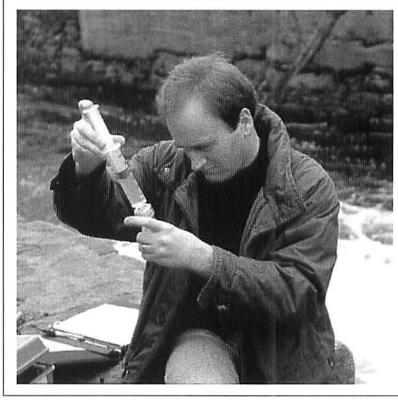
Coastal communities are pursuing solutions. ICM approaches are being designed to manage development to protect Rhode Island's unique natural and cultural resources. Rhode Island Sea Grant's Coastal Management Extension Program at CRC will continue to apply its expertise via several programming elements.

Sustainable Coastal Communities

Rhode Island Sea Grant/CRC is developing and testing model sustainable coastal community initiatives in two Rhode Island coastal regions: Aquidneck Island and Washington County. These models of community development and resources management facilitation will be applied statewide in conjunction with the Rhode Island Watershed Coordinating Council, the Rhode Island Rivers Council, and GrowSmart Rhode Island. Lessons of national relevance learned through these efforts will serve as case studies and examples for the National Sea Grant Coastal Communities and Economies Theme Team and for the national Smart Growth movement.

The Sustainable Coastal Community Initiative builds on Rhode Island Sea Grant/CRC's previous work in Rhode Island coastal communities and on the evaluation of national experiences. The goals of this work are to build institutional capacity to implement integrated regional planning and to foster leadership continuity and excellence in local nongovernmental organizations in order to help them play a key role in achieving sustainable development.

Protect and Enhance Coastal Ecosystems, Water Quality, and Habitats



Rhode Island Sea Grant/CRC has long contributed to developing public policy and to building public awareness of the value of marine habitats and ecosystems in Rhode Island. Rhode Island Sea Grant/CRC will work with its partners (and via staff memberships on the board of Save The Bay, the R.I. Rivers Council, the advisory committee for GrowSmart Rhode Island, the state Watershed Approach Coordinating Council, and the Bay Summit Working Group) to develop water quality and habitat management strategies and to translate research results for public use.

Fisheries, Aquaculture, and Seafood Extension Program

Kathy Castro (401) 874-5063 kcastro@uri.edu

Rhode Island's commercial marine fisheries continue to grapple with an evolving regulatory and management landscape. Major issues include seafood quality and safety, overfishing, federal requirements to reduce bycatch and marine mammal interactions, essential fish habitats, habitat alterations from fishing activities, tensions between recreational and commercial fisheries, codes of ethics, and the potential for sustainable fishery certifications for particular fisheries and fishing regions. Of particular concern for Rhode Island's fisheries is the issue of licensing and how to reconcile open access with mandated decreases in fishing effort.

In 1997, the Rhode Island Economic Policy Council identified Rhode Island's seafood industry as one of the nine business sectors critical to the state's economic future. While the decline of traditional groundfisheries has strongly affected fishing ports throughout New England, diversification to non-traditional species contributed to the Rhode Island fishing industry's profitability. In 1998, the R.I. Seafood Council released a statement arguing that the total value (dockside landing values, value adding processing, and multiplier effects) of the seafood export industry in Rhode Island is over $270 million annually. Rhode Island is arguably the originator of about 45 percent of New England's seafood exports.

Adaptability to change has been a notable strength of Rhode Island's commercial fisheries. The Rhode Island Sea Grant Fisheries, Aquaculture, and Seafood Extension Program has worked over the years to support innovations in commercial fishing, in the diversity of targeted species, in the marketing of new seafood products in new markets, and in improved harvesting methods.

Bycatch Characterization and Reduction

A principal objective in the 1996 U.S. Magnuson–Stevens Fisheries Conservation and Management Act (FCMA) is significant reduction of bycatch in both recreational and commercial fisheries. Finfish bycatch in the trawl fisheries may be impeding stock rebuilding processes for depleted species. Future commercial fisheries management measures designed to address bycatch and the incidental take or entanglement of

protected species, such as marine mammals and turtles, have the potential to substantially alter fisheries operations. There continues to be a great need for applied research on how to minimize the impact of fisheries on non-target species and the marine environment. Rhode Island Sea Grant Fisheries Extension will develop fishing gear that reduces bycatch, and will assist in reducing incidental take of marine mammals, among other objectives.

Seafood Product Quality and Safety

As of December 1997, the U.S. Food and Drug Administration mandated procedures for the safe processing and importing of fish and fishery products. These regulations utilize the safety management system known as HACCP—an internationally recognized system of food safety control. In 1997, the National Sea Grant Network initiated an intensive seafood HACCP education program in an effort to prepare the industry for the updated HACCP regulations. HACCP education and outreach must be maintained to train new personnel and to respond to inquiries from seafood processors.

Fisheries Resource Management

The FCMA identifies habitat as a critical factor in efforts to enhance the management of U.S. marine fisheries. Accordingly, the FCMA requires the identification of critical habitat for each commercially harvested marine species and the incorporation of habitat considerations into each fishery management plan. The FCMA also embraces a precautionary fishery management approach.

One of the most important fisheries for Rhode Island fishermen is for the American lobster. The lobster fishery crosses state and federal management boundaries. Lobster landings have steadily decreased in Rhode Island waters over the last decade. Lobsters have been designated as overfished by the Atlantic States Marine Fisheries Commission, and were also determined to be the most impacted species from the *North Cape* oil spill.

There is great concern that academia, government, and the fishing industry lack the tools and management strategies to adequately respond to emerging problems in New England lobster and other fisheries. Not only have government programs frequently failed to prevent overfish-

ing, in many instances management efforts have worsened the very problems they sought to address. Increasingly, this has led to recognition that fundamental reforms are needed. Rhode Island Sea Grant Fisheries Extension is working to allow the fishing industry to directly participate in many aspects of fisheries management and to expand links with the recreational fishing community to promote species conservation and management.

Sustainable Aquaculture

Aquaculture continues to be a fledgling enterprise in Rhode Island. In the last decade, several firms have launched land-based finfish aquaculture commercial operations around Narragansett Bay, but to date none have survived as business ventures. Shellfish aquaculture is growing slowly, with the number of leases increasing to 15 in 1999 with 28 acres in production. The total value of the Rhode Island aquaculture industry in 1999 was less than $250,000. Historically, Rhode Island Sea Grant invested heavily in finfish aquaculture research, while Rhode Island Sea Grant Extension has directed its efforts to applied shellfish research and outreach, and will continue to do so in several areas.

Rhode Island Sea Grant Communications Program

Malia Schwartz (401) 874-6842 malias@gso.uri.edu

User groups and the general public have critical roles in determining the direction of marine science and policy in the United States. To meet those responsibilities they need the ability to understand and work with marine scientific and technical information. Sea Grant is widely recognized as a leading non-biased provider of such information.

Rhode Island Sea Grant communicators interpret and synthesize the results of marine science for both professional and lay audiences. Emerging communications technologies such as on-line publishing and interactive programming will meet the growing need for such information. These new tools of communication will steadily be incorporated into existing Sea Grant outreach programs. The links between Sea Grant–sponsored research and Extension must continue to be strengthened via new approaches such as television and video, the Internet, and print publications that appeal to larger, more informed, and increasingly diverse audiences.

Program Advisors

In order to maintain and expand the excellence of its scientific research, outreach, and communications programming, the Rhode Island Sea Grant College Program consults leading professionals in marine and coastal science and policy, fisheries issues, coastal management, and communications. These advisors work with Rhode Island Sea Grant to plan its future in relation to current and emergent thinking in their respective fields. The following advisory committees meet annually to review accomplishments and provide input to future program development. In addition, advisory committee members communicate regularly with Rhode Island Sea Grant's senior staff.

Senior Advisory Committee

Dr. B. J. Copeland
Former Director, North Carolina Sea Grant College Program

Mr. Grover Fugate
Executive Director, R.I. Coastal Resources Management Council

Mr. Jan Reitsma
Executive Director, R.I. Department of Environmental Management

Dr. Michael Sissenwine
Director, Woods Hole Laboratory, National Marine Fisheries Service
Northeast Fisheries Science Center

Mr. Robert Smith
Past President, Rhode Island Lobstermen's Association

Fisheries, Aquaculture, and Seafood Extension Advisory Committee

Mr. Ralph Boragine
Executive Director, R.I. Seafood Council

Mr. David Borden
Assistant Director, Bureau of Natural Resources, R.I. Department of Environmental Management

Mr. Steve Medeiros
President, R.I. Saltwater Anglers Association

Dr. Robert Rheault
President, Moonstone Oysters, Inc.
President, Ocean State Aquaculture Association

Coastal Management Extension Advisory Committee

Mr. Robert Ballou
Chief of Staff, R.I. Department of Environmental Management

Ms. Anna Prager
Member, South Kingstown Town Council
Chair, R.I. Public Transit Authority

Mr. Curt Spalding
Executive Director, Save The Bay

Mr. Keith Stokes
Executive Director, Newport County Chamber of Commerce

Mr. Jeff Willis
Supervising Marine Resource Specialist, R.I. Coastal Resources Management Council

Mr. Scott Wolf
Executive Director, GrowSmart Rhode Island

Communications Advisory Committee

Mr. David Brenner
Web Specialist, Michigan Sea Grant College Program

Mr. Peyton Fleming
Press Officer
Environmental Protection Agency–Region 1

Dr. Jack Greer
Assistant Director for Communications
Maryland Sea Grant College Program

Mr. Peter Lord
Environmental Journalist, *Providence Journal*
Journalism Director, Metcalf Institute for Marine & Environmental Reporting

Ms. Frances Segerson
Chief of Information & Public Relations and Webmaster, R.I. Department of Transportation

John Knauss reflects that Sea Grant's long-term contributions have included significantly raising the visibility of and concern for marine environmental and resource utilization issues in America: "Whether it be coastal zone management, marine tourism, estuarine pollution, or fisheries development, all have been impacted by Sea Grant. Industry and state and federal government are filled with graduates who learned their marine skills in Sea Grant programs. Ocean awareness has been heightened by Sea Grant school and community programs."

To speak with someone about the projects funded by the Rhode Island Sea Grant College Program, please contact:

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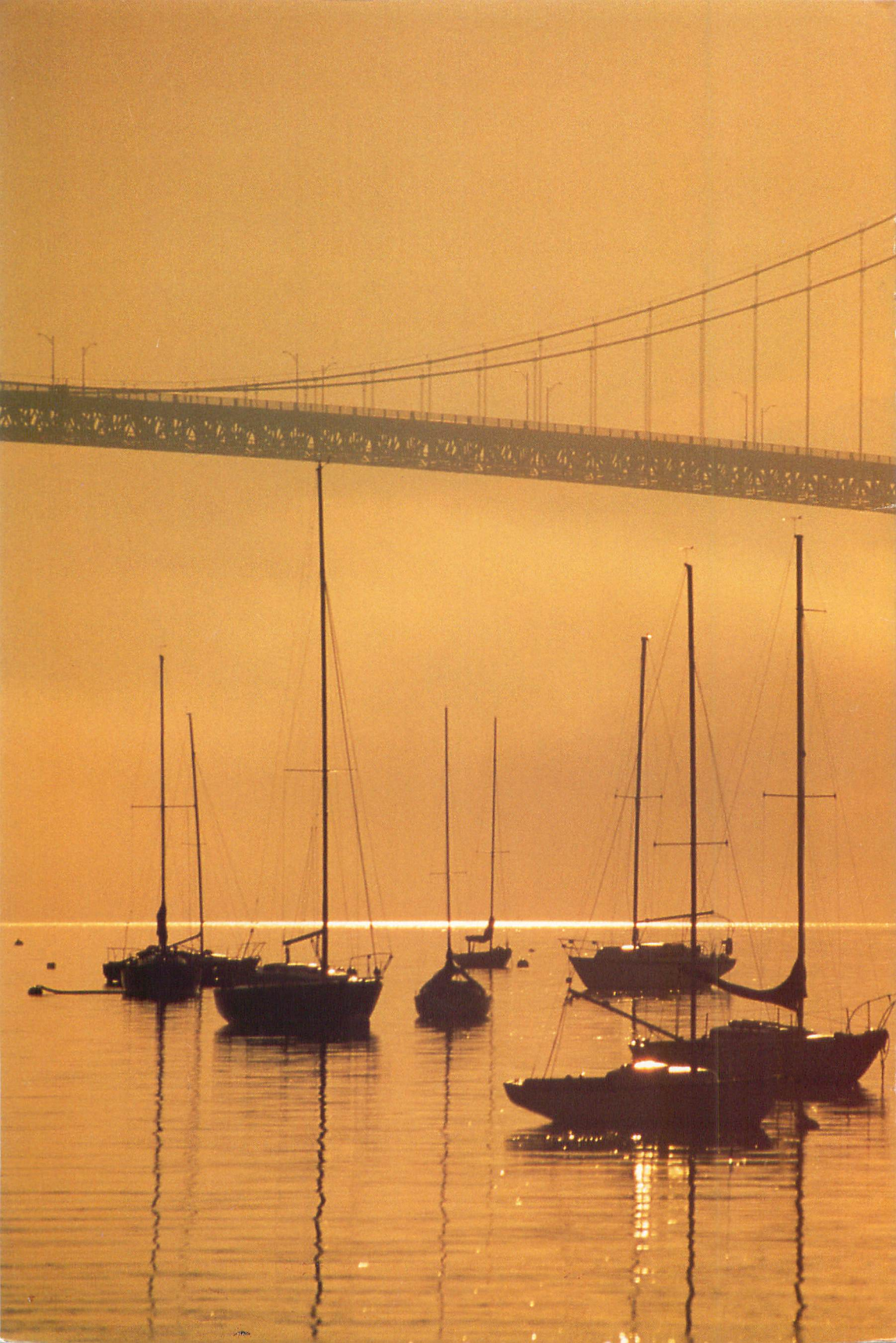

Rhode Island Sea Grant College Program

Celebrating 30 Years
in the Ocean State

27 November 2001

Welcoming Remarks
University of Rhode Island President Robert L. Carothers
Rhode Island Sea Grant Director Barry Costa-Pierce

Rhode Island Sea Grant Founders Awards
National Sea Grant College Program Director Ronald Baird

Rhode Island Sea Grant Directors Awards
Barry Costa-Pierce

Rhode Island Sea Grant Extension Program Awards
Rhode Island Sea Grant Assistant Director Kathleen Castro
Rhode Island Sea Grant Assistant Director Virginia Lee

Special Presentation & Closing Remarks
Barry Costa-Pierce

Rhode Island Sea Grant College I
in the Ocean State

From its inception, the Rhode Island Sea Grant College Program has emphasized multidisciplinary research addressing problems in the coastal zone and sharing its findings with the public.

The Rhode Island Sea Grant College Program celebrates the 30th anniversary of the University of Rhode Island's designation as a Sea Grant college by honoring those leaders who have guided Sea Grant to accomplishments in marine science, outreach, and education.

Sea Grant Founders

Claiborne Pell

In 1966, Rhode Island's U.S. Senator Claiborne Pell introduced in Congress the National Sea Grant College Program Act, which was signed into law on October 15, 1966. The National Sea Grant College Program now encompasses 30 coastal and Great Lakes states and Puerto Rico, linking hundreds of researchers and outreach staff in universities around the country.

John Knauss

As first dean of URI's Graduate School of Oceanography, John Knauss co-organized the conference, convened in 1965 in Newport, R.I., which delineated a strategy to design the National Sea Grant College Program. Knauss also helped found the Rhode Island Sea Grant College Program.

Saul Saila

URI Oceanography Professor Saul Saila championed Athelstan Spilhaus's proposal of the Sea Grant concept made at the 1963 meeting of the American Fisheries Society. Saila immediately wrote Spilhaus after the conference expressing his enthusiasm for the idea and urged Knauss to pursue the concept.

rogram: Celebrating 30 Years

Nelson Marshall
URI Professor of Oceanography and later of Marine Affairs, Nelson Marshall served on the first URI committee that helped craft the Newport conference and the proposal that brought the first Sea Grant funding to URI.

Sea Grant Directors

Niels Rorholm
URI Professor of Resource Economics Niels Rorholm served as first coordinator of the Rhode Island Sea Grant College Program and helped create the first Rhode Island Sea Grant proposal for a model coupling Narragansett Bay's economy with its ecology. Rorholm served as coordinator from 1971 to 1984.

Scott Nixon
URI Professor of Oceanography Scott Nixon led the Rhode Island Sea Grant College Program to become one of the largest Sea Grant programs in the nation. Nixon launched multidisciplinary research collaborative projects that advanced the state of coastal and marine science. Nixon served as coordinator and director from 1984 to 2000.

Sea Grant Outreach

Walter Gray
When Walter Gray founded the Rhode Island Sea Grant Marine Advisory Service, he also created a model for the National Sea Grant network, including a strong Northeast regional network. His program emphasized the public dissemination of research results and the creation of outreach specializations in education, fisheries, seafood safety, marinas and marine businesses, and coastal management. He served as Marine Advisory Service leader until 1984, when he became director of the URI Office of Marine Programs.

David Borden

As the Assistant Director of the R.I. Department of Environmental Management, Bureau of Natural Resources, Borden has been a key figure in fisheries science and management locally, regionally, nationally, and internationally. His efforts have brought URI and the Rhode Island Sea Grant Fisheries Extension Program together as members of a team of professionals to address many of the issues confronting commercial and recreational fisheries in the state.

Sea Grant Special Service

Ames Colt

Serving as Interim Director from 2000 to 2001, Associate Director Ames Colt led the Rhode Island Sea Grant College Program, coordinating research and outreach efforts and participating in the search for a new director. During his tenure, Colt also served as co-chair of the National Sea Grant Sustainable Coastal Communities Theme Team.