

New Hampshire Sea Grant Implementation Plan 2001-2002



National Sea Grant Library
Pell Library Building; 9 Fish Rd.
University of Rhode Island - GSO
Narragansett, RI 02882-1197 USA

(401) 874-6114



This publication was made possible by grant NA16RG1035 to New Hampshire Sea Grant from the National Sea Grant College Program of the National Oceanic and Atmospheric Administration, Department of Commerce.

Publication number UNHMP-AR-SG-01-6

To offer comments on this publication, please fill out the feedback form at:
www.seagrants.unh.edu/pubform.htm

NH Sea Grant Program

Implementation Plan for 2001-2002

The NH Sea Grant Policy Advisory Committee (PAC) will be the primary resource for the program in strategic planning, since its members are drawn from all constituent groups.

I. Strategic Planning

The national context: The *NH Sea Grant Strategic Plan* will build upon and be consistent with the National Sea Grant Strategic Plan in its overall focus on the economy, the environment, and education. However, NH Sea Grant's specific goals and opportunities will be developed locally. Consistent with our dual role as an independent program and as a member of a national network of programs, NH Sea Grant will identify, encourage, facilitate, and lead research, extension, education, and communications efforts that address both local needs and national priorities.

Strategic prioritization: The *NH Sea Grant Strategic Plan* will be broad in focus and general in content. It will not identify particular topics of highest priority. The plan will present a wide range of issues, needs, and opportunities that together define our mission and direct our efforts, but will not seek to direct individual researchers or extension personnel to particular topics.

Underlying philosophy: The strategic planning process is intended to provide a general framework to define our mission, describe our vision for the future, and ensure flexibility for NH Sea Grant to respond, adapt, and grow. The *NH Sea Grant Strategic Plan* will be a long-term document with a five-year life span; it will provide the template — but not the details — for implementation of the program elements, selection of projects through the RFP process, and evaluation of outcomes.

Mechanisms of strategic planning: The research, extension, and education goals and objectives for NH Sea Grant will be identified by the stakeholders themselves. The NH Sea Grant Policy Advisory Committee (PAC) will be the primary resource for the program in strategic planning, since its members are drawn from all constituent groups. Based on committee discussions and invited talks by technical experts and resource people, PAC members will identify important and timely issues appropriate for Sea Grant. They will also consult with and seek guidance from knowledgeable people in each area. The strategic planning activity will be both intensive and extensive; the process will ensure that program resources and efforts will be focused on important issues — as identified by the end users themselves.



II. Implementation Planning

Underlying philosophy: The *NH Sea Grant Implementation Plan* will describe short-term goals and objectives, specify actions and activities, outline the means by which we will achieve our goals, and provide criteria by which we evaluate our effectiveness, impact, and success.

Time frame: This implementation plan will be in effect for two years: 2001-2002. The timing of implementation planning will be consistent with the program cycle. For the upcoming four-year funding cycle, new implementation plans will be submitted with the omnibus proposal in Year 1 (covering years 2003-2004) and Year 3 (covering years 2005-2006).

Mechanisms of implementation planning: The NH Sea Grant Executive Committee will prepare draft versions of each implementation plan, which will be reviewed and approved by the NH Sea Grant PAC. Comments will be invited from the National Sea Grant Office (NSGO) Program Officer.



III. Implementation of the Program

Program elements: The goals and objectives of the management, extension, education, and communications elements will be described in the appropriate section of the omnibus proposal. The performance and effectiveness of each program element will be described in the annual progress report, which will be distributed to the NH Sea Grant PAC and submitted to the NSGO. A brief summary of these goals and objectives are included here:

Program Management

Ann Bucklin and Brian Doyle, UNH

- To focus the program on priority concerns of the northern New England coastal ocean constituency.
- To execute the functional and operational responsibilities of the program in a manner consistent with the NOAA Office of Sea Grant objectives.
- To maintain close liaison with the members of the region's research community so that their talents can be applied to priority concerns in a manner consistent with professional growth and with wise use and understanding of our northern New England marine resources.
- To maintain liaison with state agencies, industrial and business interests, and community organizations in order to understand their needs and goals and to integrate them into the program.
- To foster new program initiatives in response to the priority needs of the region and ensure a progressive, dynamic program.

Sea Grant Extension Program

Brian Doyle, UNH

- To have three vessels equipped with "Fleetlink" equipment that will routinely send weather, oceanographic, and fisheries data via satellite to an

To maintain close liaison with the members of the region's research community so that their talents can be applied to priority concerns in a manner consistent with professional growth and with wise use and understanding of our northern New England marine resources.

independent (nongovernment) data collection center and to have the data dispersed to appropriate destinations. (Fleetlink is the name given to a computer software and sensing package that can collect and telemeter oceanographic, weather, and fisheries data).

- To have five commercial fishermen growing mussels on longlines in the open ocean environment by 2001 and another 10 in business by 2003.
- To have 50 fishermen and fisheries stakeholders, including environmentalists, scientists, fisheries managers, recreational fishermen, and interested parties, participating in a "community-based" management process.
- To have at least 100 citizens able to identify specific actions they can take to help reduce contaminant loadings in Great Bay. To have at least 50 local/state decision-makers utilize CICEET-supported research to help control contaminant loadings in Great Bay.
- To have 60-70 adult volunteers as well as seven junior/senior high school teachers and their students perform chemical and biological water quality sampling as quality assurance and quality control participants of the Great Bay Coast Watch.
- To have at least 12 new volunteers each year make a two-year commitment to the UNH Marine Docent Program and become part of our education staff, working with the SeaTrek outreach programs for schools and adult audiences, the boat-based programs, the Seacoast Science Center, the Sandy Point Interpretive Center, and possibly other coastal education facilities.
- To have 75% of educators participating in selected marine science education programs utilize them as part of a broader marine or environmental education unit in their curriculum.

Communications and Information Program

Steve Adams, UNH

- To provide communications support to New Hampshire Sea Grant and its administrators, researchers, extension personnel, and educators.
- To disseminate information resulting from Sea Grant research and activities in appropriate formats to the scientific community, government agencies and officials, marine industries, and the general public.
- To work with other Sea Grant programs and appropriate organizations to conceive, produce, and market regional and national communications products.
- To promote public awareness of marine and coastal issues in northern New England and the Gulf of Maine region.
- To increase recognition of Sea Grant in the scientific community, by government agencies and officials, in the marine industries, and by the general public.
- To promote greater scientific literacy throughout the sectors served by Sea Grant, including legislators, students, teachers, the media, tourists, and the general public.
- To enhance NH Sea Grant's World Wide Web presence and to take greater advantage of this medium.

To disseminate information resulting from Sea Grant research and activities in appropriate formats to the scientific community, government agencies and officials, marine industries, and the general public.

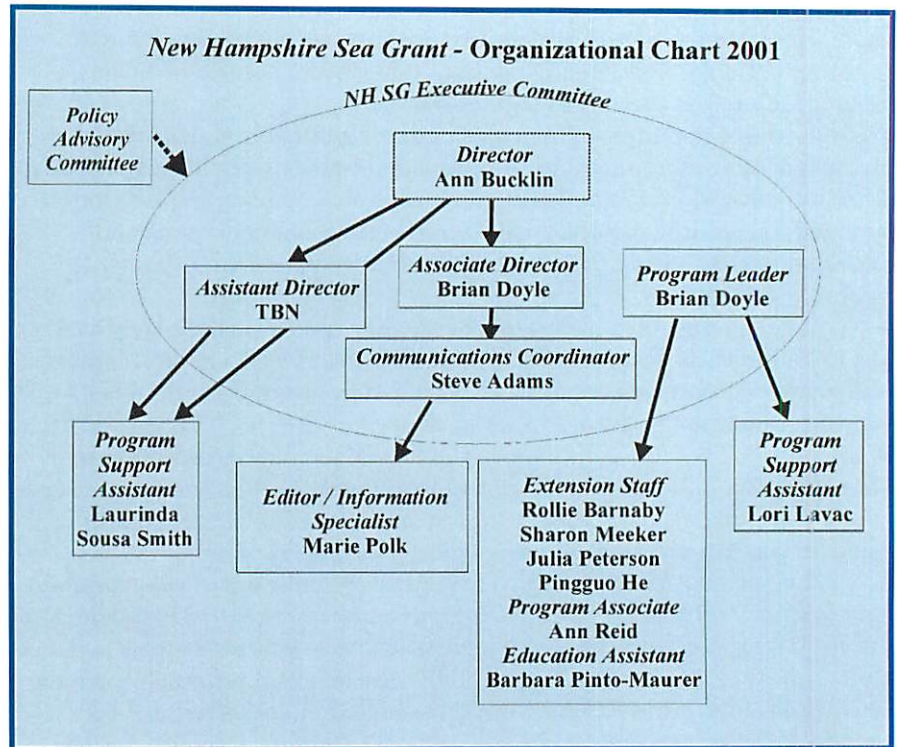


Program Development
Ann Bucklin and Brian Doyle,
UNH

- To foster new program initiatives and to stimulate new project development.
- To better define problems and explore new directions in research and associated extension thrusts.
- To develop better collaboration with colleagues and agencies in and outside the region.

Integration of program elements:

The NH Sea Grant Executive Committee, currently consisting of the director, extension program leader, and communications coordinator, will meet regularly to discuss, integrate, and make decisions about all aspects of program function, goals, and objectives. This leadership group will work by consensus to ensure interweaving of the program elements to achieve our strategic goals and objectives.



Implementation of TAT recommendations: During 2001 and 2002, the recommendations of two recent tactical area team (TAT) reviews including reviews of management (December 2000) and communications (August 2000) will be carefully considered. Recommendations to be implemented will be submitted for comment and approval to the PAC.

Personnel needs: During 2001, two new core staff will be added to NH Sea Grant, consistent with recommendations of the TAT review of program management. A new assistant director position will be filled. This new staff member will help meet increased demands for reporting and accountability by NOAA and the NSGO, lead efforts to implement electronic reporting and database management, and assist with the design of new procedures to evaluate program outcome and impact. The Executive Committee will be expanded to four people to include this new position. In addition, a new project support assistant position will be filled to provide assistance to the director and the new assistant director.

Research and outreach priorities: The priorities for research and associated outreach efforts will be identified through a competitive proposal-based process, involving a biennial request for proposals (RFP) distributed across the state. The proposal evaluation process will involve the following steps:

- Distribution of RFP: including statewide



distribution to all research and higher education institutions. The RFP process will be designed to ensure fair, equal, and open access to Sea Grant funds by any NH researcher, regardless of institutional affiliation.

— **Preliminary Proposal:** including a short (three-page) description of project rationale and conceptual and technical approach. Evaluation will be by an appropriate panel of technical experts and clientele (excluding any person from NH), who will consider programmatic relevance and importance in relation to the *NH Sea Grant Strategic Plan*, with lesser attention to technical merit and likelihood of success.

— **Full Proposal:** including a detailed description of the research and outreach to be conducted, expertise of the project participants, results of prior Sea Grant projects, and other relevant information. Evaluation will be by mail peer review (including three to six written reviews by experts in the field) and by a technical panel of experts, who will consider all aspects of the proposed work, including programmatic relevance and technical merit. The panel will evaluate the proposals, the mail reviews, and the optional PI response to the mail reviews.

The selection of projects through the competitive proposal-based process, as guided by the *NH Sea Grant Strategic Plan*, will define the research and outreach priorities for the program during the two-year period. For the period 2001-2002 covered by this implementation plan, the research and extension priorities are:

Marine Economic Development

Age, Growth and Reproduction in Atlantic Hagfish

Stacia Sower, UNH

To develop the scientific basis for a sound Atlantic hagfish management plan by determining age and growth rates.

Assessing the Feasibility of Winter Flounder Stock Enhancement

Hunt Howell, UNH

To assess the feasibility of rebuilding (enhancing) wild populations of winter flounder through the release of juveniles raised in hatcheries.

Larval Diet, Visual Behavior, and Juvenile Pigmentation in Hatchery-Reared Summer Flounder

Jessica Bolker, UNH

To measure the effect of larval diet on visual behavior and final pigmentation of hatchery-reared summer flounder; to determine whether early larval behavior serves as a predictor of pigmentation; to test behavioral differences between albino and normal juveniles in low and bright light; and to integrate nutritional, behavioral, and morphological studies in order to test key components of a central hypothesis about the cause of albinism in hatchery-reared flatfishes.



The selection of projects through the competitive proposal-based process, as guided by the NH Sea Grant Strategic Plan, will define the research and outreach priorities for the program during the two-year period.

Sustainable Integrated Finfish/Nori Aquaculture for Bioremediation and Production of Food and Biochemicals: Culture and Mesocosm Studies

Christopher Neefus, UNH

To obtain growth and nutrient uptake information for native species of the seaweed *Porphyra* that would allow successful integration with finfish aquaculture farms.

Development of a Hatchery System for Sea Urchins in the Gulf of Maine

Larry Harris, UNH

To develop a hatchery system for green sea urchins to provide young urchins for stock enhancement or aquaculture; to develop a larval cultivation system that maximizes survival and growth to metamorphosis by utilizing a flow through system and natural plankton as a primary food source; and to investigate the potential of an algal film as the primary diet for juvenile urchins to the point of out planting.

Land-Based Aquaculture for the Green Sea Urchin: Transitioning Technology to the Private Sector

Charles Walker, UNH; Mike Lesser, UNH

To maximize green sea urchin gonad quality in terms of size, texture, shelf life, and color; and to transfer culture technology for adding value to sea urchin gonads to the public sector.

Coastal Ecosystem Health and Safety

Trophic Status of Casco Bay, Maine, as Delineated by Seaweed Diversity and Tissue Analysis

Arthur Mathieson, UNH; Christopher Neefus, UNH

To characterize seaweed populations from estuarine and open coastal sites in Casco Bay and possible long-term changes (early 1900s versus present-day) of seaweed biodiversity (species richness and compositions) from a variety of "natural" and "stressed" environments using historical records by Frank Shipley Collins; to evaluate several recent changes (50 years or less) in seaweed communities due to human introductions and/or anthropogenic effects, plus identify indicator species for polluted and "pristine" areas that can be monitored by coastal managers; and to analyze tissue contents in two broadly cosmopolitan seaweed taxa (i.e., *Ascophyllum nodosum* and *Ulva lactuca*) for PAH, trace metal (Pb, Hg and chromates), and nutrient pollution used to compare indicator species from polluted and more "pristine sites."

Sources, Distribution and Fate of Mercury at Contaminated Sites in Penobscot Bay, Maine

Stephen Jones, UNH; Henri Gaudette, UNH

To determine the extent and impacts of mercury contamination at two sites at extreme ends of the Penobscot River watershed.



To provide an opportunity for undergraduate students in engineering, physical, life, and social sciences to work as members of interdisciplinary project teams to solve contemporary problems in the ocean and coastal zone under real-world conditions and constraints.

Economic Valuation of Beach Erosion Control and Benefit Transfers

Ju-Chin Huang, UNH; Joan Poor, RIT

To identify the effects of erosion control programs on beach quality/use; to derive individuals' preferences regarding erosion control and willingness to pay for beach protection; and to provide a guideline of economic valuation of beaches to policy makers and planners.

Marine Education and Human Resources

Opportunities for Undergraduate Research and Development in Marine Science and Engineering

Larry Harris, UNH; Robinson Swift, UNH

To provide an opportunity for undergraduate students in engineering, physical, life, and social sciences to work as members of interdisciplinary project teams to solve contemporary problems in the ocean and coastal zone under real-world conditions and constraints; to provide an effective means of introducing students to the design process and to the techniques of problem solving in multifaceted marine areas; and to introduce students to the possibilities and opportunities of a marine-related career.

Further implementation of our education goals will be provided through successful competition for fellowships. For 2001, our priorities will be:

Dean John Knauss Marine Policy Fellowships

Erika Carlsen, UNH

John McLaughlin, Dartmouth College

Kevin O'Grady, UNH

To provide unique educational experiences to graduate students who have an interest in marine/ocean/Great Lakes resources and in the national policy decisions affecting those resources. This is accomplished by matching the students with hosts in the legislative branch, the executive branch, or appropriate associations located in Washington, DC, for a one-year paid fellowship.

American Fisheries Society/Sea Grant Fellowship

Nature McGinn, UNH

To provide graduate students with a broad range of professional and educational experiences including organizing an international symposium in conjunction with the AFS 2001 meeting addressing climatological impacts on living aquatic resources.

Extramural (i.e., non-Sea Grant) resources will be obtained through successful proposal writing by NH Sea Grant staff. NH Sea Grant will use NOAA, NSF, and ONR funds to implement its strategic goals and objectives. (See the box on page eight for more details on current extramural funding successes.)

During 2001 and 2002, NH Sea Grant will implement an electronic reporting procedure, including submission of all reports and updates via the internet, and web-based information system.



Encouraging creativity and risk-taking: Program Development funds will be used to encourage investigators, including researchers and extension personnel, to explore new ideas and new approaches to important issues and needs. Workshops, individual meetings, and distribution of materials by mail and email will be used to communicate important new opportunities, issues, and needs to potential investigators. NH Sea Grant managers will draw in new talent, direct experienced Sea Grant researchers to new topics, and actively encourage risk-taking by investigators using Program Development awards of \$2,000 to \$5,000 for these activities.

Interaction with other Sea Grant programs: The NH Sea Grant director and/or associate director will participate in regular meetings of the Northeast Sea Grant program directors. Participation by all NH Sea Grant staff in regular Northeast Sea Grant conferences will be encouraged. Regional and national leadership in both Sea Grant and extramural funding proposals will be encouraged for all NH Sea Grant staff members.

IV. Review, Revision, and Results

Program review: Consistent with UNH policies, performance evaluations of all NH Sea Grant managers and staff will be conducted annually; written evaluations will be filed with the UNH Personnel Office. The director's performance will be reviewed annually, with comprehensive evaluations at the end of each appointment period (currently five years). Consistent with UNH Cooperative Extension policies, each NH Sea Grant Extension staff member's efforts will be guided by a plan of work, with frequent review of progress toward stated goals and objectives.

The policies and performance of the NH Sea Grant Program will be reviewed on a continuing basis by the PAC, based on regular meetings and timely distribution of information and updates via mail and email. In

Non-Sea Grant extramural sources of funding for NH Sea Grant project years overlapping FY 2000-2002

NHSG Management

- NOAA/OOA** — \$230,000 (2000-2001) Programmatic leadership and financial management of the UNH OOA project.
- NOPP/ONR** — \$683,000 (1998-2001) Fleetlink: commercial fishing vessels as ocean observing systems.
- NOAA/NMFS Northeast Consortium** — \$235,000 (2000-2001) Administer federal funding program for cooperative research projects.

NHSG Extension

- US EPA** — \$150,000 (1998-2000) Develop collaborative projects between high school students and local conservation commissions.
- NOAA/UNH CICEET** — \$110,000 (1999-2001) Multiple outreach projects for Great Bay water quality.
- NOAA/OOA** — \$88,000 (1999-2001) Outreach coordination for UNH OOA project.
- NOAA/NMFS Northeast Consortium** — \$283,000 (2000-2001) Facilitate collaborative research projects between researchers and fishermen.
- USDA** — \$40,000 (1999-2000) Support Great Bay Coast Watch volunteer water quality monitoring efforts.
- New England Grassroots Environmental Fund** — \$2,000 (1999-2000) Monitor toxic phytoplankton in NH coastal waters.
- NH Coastal Program** — \$17,000 (1999-2000) Toxic phytoplankton monitoring program.
- NH Estuaries Project** — \$15,000 (2000) Determine non-point source pollution for Seabrook/Hampton harbors.
- NH Coastal Program** — \$13,000 (2000-2001) Extend toxic phytoplankton program to offshore locations.
- NH Coastal Program** — \$10,000 (2000-2001) Support water quality monitoring through the Great Bay Coast Watch.
- Greater Piscataqua Community Foundation** — \$6,000 (2000-2001) Support publication of new GBCW brochure.
- Greater Piscataqua Community Foundation** — \$3,000 (1999-2000) Support a GBCW fund-raising initiative.
- USDA** — \$128,000 (2000-2002) NE regional water quality outreach program.
- NH Estuaries Project** — \$9,400 (2001-2002) GBCW water quality monitoring.
- NH Estuaries Project** — \$10,000 (2001-2002) Storm drain stenciling.
- NH Dept. of Environmental Services** — \$6,500 (2001-2002) Phytoplankton monitoring.

Total: \$2,035,900

addition, NH Sea Grant will conduct topical area team (TAT) reviews of any aspect of the program on an as-needed basis. TAT reviews will be an important element in self-evaluation.

Revision of program implementation: The NH Sea Grant PAC may at any time recommend changes in program implementation to the director or any member of the Executive Committee. In turn, the Executive Committee may at any time recommend changes in program implementation to the PAC. All changes in program implementation will be enacted following majority vote by a quorum of the PAC and are subject to review and approval by the NSGO Program Officer.

Measurement of program success: Program outputs will be tracked by regular reporting by all NH Sea Grant staff and funded investigators. Annual progress reports will be used to ensure full reporting of all staff activities, including awards and professional recognition, projects and activities, proposals written, extramural funding received, and other evidence of capability and performance. Program outputs will be tracked by annual progress and project completion reports, including peer-reviewed publications, technical reports, presentations, patents and inventions, and professional awards and recognition.

During 2001 and 2002, NH Sea Grant will implement an electronic reporting procedure, including submission of all reports and updates via the internet, and web-based information system. New NH Sea Grant staff, including an assistant director and project support assistant, will help accomplish these goals.

Evaluation of program results: NH Sea Grant will use a "case-history" approach to evaluating impact and effectiveness of program activities. The NH Sea Grant Executive Committee will select projects with excellent results, high output, and significant impact in areas consistent with our strategic plan. These projects will be profiled in press releases and trade journals and in high-quality, long shelf-life products that disseminate new knowledge and understanding to our clientele and user communities.

NH Sea Grant will continue to seek effective and efficient means to evaluate the real-world impacts of our management, extension, communications, education, and research activities. We will continue to experiment with clientele surveys, questionnaires for targeted audiences, socioeconomic analysis, quantitative evaluation of attitudinal and educational changes, and other means of directly and indirectly evaluating our impact and outcome. The new assistant director will lead these efforts.

Regional and national application of outputs and outcomes: NH Sea Grant will extend the results of local efforts to regional and national audiences through participation and presentation at professional meetings; distribution of written products (e.g., publications, reports, and press releases); collaboration with Sea Grant staff and researchers across the country; establishment of consortia and formal relationships among programs and organizations with shared missions; and integration via the national Sea Grant network.



The NH Sea Grant Executive Committee will select projects with excellent results, high output, and significant impact in areas consistent with our strategic plan.

RECEIVED
NATIONAL SEA GRANT LIBRARY

MAY 31 2002

Pell Bldg. URI Bay Campus
Narragansett RI 02882 USA



UNIVERSITY of NEW HAMPSHIRE

