



# ***Marine Science for Maine People***

**Implementation Plan 2003-2005  
for the Strategic Plan 2001-2005**

**Maine Sea Grant**



## TABLE OF CONTENTS

<b>Introduction</b>	<b>p.1</b>
<b>Theme Areas</b>	
Ecosystem Health	p.2
Aquaculture	p.7
Fisheries	p.11
<b>Program Areas</b>	
Management	p.13
Research	p.15
Communications	p.19
Education	p.21
<b>Maine Sea Grant Staff</b>	<b>p.24</b>



## Maine Sea Grant: Marine Science for Maine People

### Implementation Plan 2003-2005

Following is the implementation plan to cover the second two years of Maine Sea Grant's 2001-2005 strategic plan, *Marine Science for Maine People*. The three theme areas - ecosystem health, aquaculture, and fisheries - are intended to focus and organize the program's activities. Extension activities are integral to all of these themes. The program areas - management, research, communications, and education - are overarching elements that are not specific to one of the theme areas. Since the completion of the first two-year implementation plan, the Coastal Community Development (CCD) program has been added to the ecosystem health section of the plan. The goal of Maine Sea Grant's CCD program, initiated through targeted funding from the National Sea Grant Office, is to provide the state's coastal communities with locally relevant science-based information, technical assistance, and educational materials that can be used for decision-making related to coastal and marine ecosystems. The CCD program encompasses three projects—the Gulf of Maine Expedition, the Ecosystem Assessment Project, and the NEMO (Nonpoint Education for Municipal Officials) Program—which, combined, address topics ranging from low-impact tourism, water safety, and sustainable land-use practices to community-based marine management.





The 2003-2005 implementation plan was developed with extensive input from the Maine Sea Grant Policy Advisory Committee, as well as from program staff. During the process of revising the plan, it became clear that many of the evaluation techniques described in the first two-year plan were inadequate in determining if the stated objectives were attained. In this new plan, we have included more realistic evaluation methods and listed only one evaluation technique for several strategies where appropriate.

If you have any questions or comments, please contact one of our staff members listed in the back of the plan. We strive to be responsive to emerging issues concerning our marine and coastal resources and value input from our constituents.



## Goals

The overall goals in Ecosystem Health are to:

-  *Provide science-based information to help preserve the coastal environment and human communities.*
-  *Stimulate the sustainable development of marine industries.*
-  *Promote citizen involvement in environmental stewardship.*
-  *Help coastal communities deal with issues concerning land-use planning, environmental protection and management, coastal access, recreational tourism, and use conflicts.*

We will work towards these goals by addressing the following objectives:

### Objective EH-1

*Establish ways in which the ecosystem health of Maine's nearshore bays can be assessed and measured.*

IMPLEMENTATION 2003-2005		
Objective EH-1: <i>Establish ways in which the ecosystem health of Maine's nearshore bays can be assessed and measured.</i>		
Strategies	Anticipated Outcomes	Evaluation
A. Coordinate a collaborative effort to conduct a needs assessment, compile information on existing efforts, and determine mechanisms for assessing and monitoring the health of coastal ecosystems using several pilot nearshore areas.	Needs of coastal communities in pilot areas will be identified, information gaps will be assessed, and a summary report of findings will be produced.	Track distribution of, and requests for, the summary report.
B. Identify new opportunities for collaborative, community-based monitoring/inventorying programs to fill information and data gaps, and help facilitate the development of these programs	At least one community-based monitoring/inventorying program will be initiated in each pilot area.	Survey community representatives to find out if they think volunteer programs are useful and monitor recruitment programs.
C. Collaborate with regional partners to assemble a list of the potential ecosystem health indicators for the coast of Maine.	Collaboration will improve among partners, and it will become clearer how ecosystem health relates to human activity and coastal decision-making. A summary document that compiles these potential health indicators will be produced.	Success of this effort will be measured by the ability of the collaborators to reach consensus and produce a summary document that is used to further develop ecosystem health metrics and monitoring programs.



## Objective EH-2

*Help to develop and support volunteer-based, environmental monitoring programs to collect information required by researchers, regulators, and local communities in order to sustain or restore ecosystem health.*

IMPLEMENTATION 2003-2005		
Objective EH-2: <i>Help to develop and support volunteer-based, environmental monitoring programs to collect information required by researchers, regulators, and local communities in order to sustain or restore ecosystem health.</i>		
Strategies	Anticipated Outcomes	Evaluation
A. Develop pilot projects for high priority, citizen-based monitoring programs as needs and opportunities are identified by communities or the state.	<p>Stakeholders will use the reliable data gathered through monitoring programs to make informed decisions in coastal and marine resource management.</p>	<p>Track how data is being used at community and state levels.</p> <p>Participants in monitoring programs will comprise a network of highly trained citizens who will have the capacity to act as community liaisons on coastal issues.</p> <p>Survey program volunteers annually, including a narrative description of community interactions related to programs.</p>
B. Support and enhance existing monitoring programs and citizen groups by providing access to new technology, training, and education; organizing meetings and workshops; and engaging researchers and agency staff. Establish measurable targets to enhance existing programs.		
C. Promote standardized methods for monitoring programs to ensure consistent, high quality data.		
D. Provide volunteer groups with technical support to encourage the development of effective data management and analysis systems.		
E. Utilize and enhance existing tools (newsletter, Web site, display, brochure, etc.) to promote monitoring programs and communicate with volunteers.		
	<p>Promotional tools related to monitoring programs will increase visibility of the programs among constituents and improve volunteer recruitment capacity. Communications tools will help to increase monitors' knowledge of the goals, impacts, and content related to monitoring programs.</p>	<p>Track requests for information and volunteers recruited via promotional tools.</p> <p>Conduct annual survey of <i>The Maine Shore Steward</i> newsletter readers, and recipients of other communications products.</p>



### Objective EH-3

Provide coastal communities with technical information and resources so that their decisions can be based upon accurate information.

IMPLEMENTATION 2003-2005		
Objective EH-3: Provide coastal communities with technical information and resources so that their decisions can be based upon accurate information.		
Strategies	Anticipated Outcomes	Evaluation
A. With appropriate partners, initiate new extension programming or enhance existing programming to address the issues identified in past needs assessments in areas where the Marine Extension Team can have the greatest impact.	Coastal communities will use the technical information and resources to improve or sustain ecosystem health at the local level.	Survey program participants at intervals, after the original program, to determine if methods learned in the program have been applied and, if so, to what end.
B. Develop and distribute communication tools about MET services.	Coastal communities use of Marine Extension Team assistance will increase.	Monitor progress by tracking new client referrals and usage of the materials.





## Objective EH-4

Increase community support for, and participation in, restoration and preservation of coastal and marine habitats.

IMPLEMENTATION 2003-2005		
Objective EH-4: Increase community support for and participation in, restoration and preservation of coastal and marine habitats.		
Strategies	Anticipated Outcomes	Evaluation
A: With partners, design and deliver programs to inform coastal communities about the functions of coastal habitats and provide information about habitat restoration options.	Program participants' understanding of coastal habitat functions and restoration options will increase.	Participants will conduct self-assessments or pre- and post-tests.
B: Work with partners to contribute to ongoing efforts in coastal habitat restoration; and facilitate activities by providing and obtaining technical assistance, sharing resources, and coordinating efforts.	The number of habitat restoration projects initiated will increase.	Track the number of habitat restoration projects initiated.
C: Assist coastal communities in selecting, obtaining funding for, conducting, and monitoring restoration projects by providing access to volunteers, technical assistance, and organizational support.		



## Objective EH-5

*Provide Maine coastal communities with educational resources that promote best management practices (BMPs) for nature-based tourism and address issues related to ecosystem health, sustainable community development, recreational boating safety, and coastal access.*


IMPLEMENTATION 2003-2005		
Objective EH-5: <i>Provide Maine coastal communities with educational resources that promote best management practices (BMPs) for nature-based tourism and address issues related to ecosystem health, sustainable community development, recreational boating safety, and coastal access.</i>		
Strategies	Anticipated Outcomes	Evaluation
A. Work with partners to identify BMPs for nature-based tourism in Maine and develop and deliver related educational programs to coastal communities and tourists.	Nature-based tourism industry will be more aware of issues, such as ecological sustainability, user conflicts, boating safety, etc. Communities and tourists will have access to programs that promote ecosystem health and sustainable development. Tourism businesses and organizations will have access to educational resources to improve their programs.	Track number of public presentations and participants. Assess number of tourism businesses and organizations that include educational programs as part of their services.
B. Working with partners, identify island and coastline case studies to document long-term ecological change following recreational use and initiate carrying capacity studies of coastal ecosystems.	Baseline ecosystem data in recreational areas will provide information needed by coastal land-use managers.	Monitor number of recently developed land-use plans that incorporate carrying capacity data.
C. Serve as liaison between working waterfront and recreational communities to increase dialogue between the two groups on issues such as coastal access.	Increased dialogue between competing coastal interests will reduce conflicts between the two groups.	Track outcomes of coastal user group conflicts. Survey clients to assess value of this effort.






## Goals

The overall goals in Aquaculture are to:

 *Provide information and technical support to enhance the long-term sustainability of the aquaculture industry.*

 *Contribute to the ongoing debate about aquaculture in the state of Maine by providing the public with unbiased and accurate information.*

We will work towards these goals by addressing the following objectives:

## Objective AQ-1

*Provide the public with unbiased and accurate information about aquaculture.*

IMPLEMENTATION 2003-2005		
Objective AQ-1: <i>Provide the public with unbiased and accurate information about aquaculture.</i>		
Strategies	Anticipated Outcomes	Evaluation
A. Hold open public informational sessions along the coast where aquaculture facilities are proposed. These will provide information about aquaculture practices and the public hearing process for lease applications, and facilitate communication amongst stakeholders.	Due to increased understanding about aquaculture, decisions and policy will be based on factual information, and communication among stakeholders will be improved.	Track number of sessions and attendance, and survey attendees to determine if the sessions were informative and useful. Track changes in public policy to include increased public participation in the aquaculture leasing process.
B. Develop communications tools, including fact sheets, scientific abstracts, and radio spots, to help educate the public, regulators, and managers about aquaculture.		Record communications tools developed. Survey users to determine if communications tools were useful.

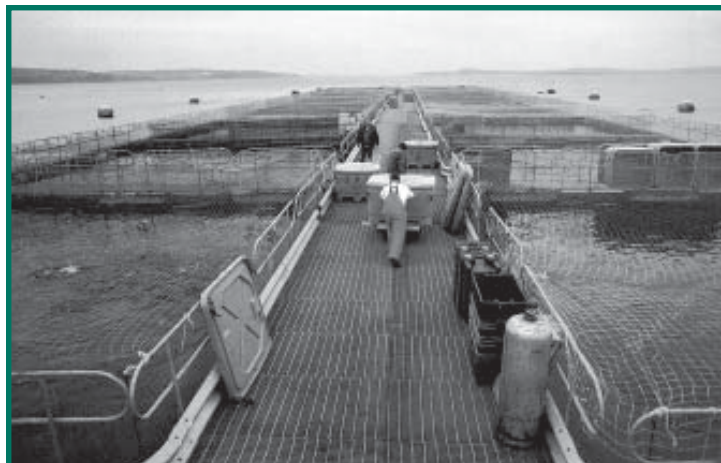




## Objective AQ-2

Address problems in gear development, husbandry practices, disease, broodstock development, and other related issues.

IMPLEMENTATION 2003-2005		
Objective AQ-2: Address problems in gear development, husbandry practices, disease, broodstock development, and other related issues.		
Strategies	Anticipated Outcomes	Evaluation
A. Respond to inquiries from growers and facilitate relationships between growers and respective researchers and service providers.	Productive partnerships between researchers, service providers, and growers will increase.	Track outcomes and impacts of grower/researcher partnerships.
B. Provide technical information to aquaculturists, regulators, and other stakeholders through seminars, workshops, and conferences.	Events, such as the Shellfish Aquaculture Seminars, the New England Farmed Fish Health Workshop, the Hatchery Manager's Roundtable, and the Offshore Shellfish Aquaculture Workshop, will be organized.	Track events and attendance, and conduct follow-up surveys, inquiries, and resulting projects.
C. Foster and participate in applied research, leading to improved culture equipment and husbandry practices.	Existing companies will improve and new ones will be developed.	Track research projects, including external funding, outcomes, changes in husbandry practices, and resulting aquaculture improvements.

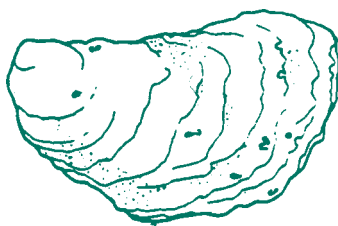




### Objective AQ-3

Assist with feasibility studies and pilot projects to investigate alternative species for propagation in Maine.

IMPLEMENTATION 2003-2005		
Objective AQ-3: Assist with feasibility studies and pilot projects to investigate alternative species for propagation in Maine.		
Strategies	Anticipated Outcomes	Evaluation
A. Conduct literature reviews and investigate culture operations elsewhere to compile information for Maine growers.	A library of resources on new and developing species will be compiled.	Survey clients for usefulness of information and services provided.
B. Facilitate collaborative research between farmers and researchers on new and emerging species, such as scallops and halibut.	Reliable information on the culture of new species will be provided to farmers.	Track research projects and resulting aquaculture initiatives that start up.
C. Refer emerging aquaculture-related businesses to parties that can provide services in market analysis, economic feasibility, and development of business plans.	A list of providers for improving business development and a file of business plans to share will be developed.	Survey emerging businesses to assess if materials, referrals, and services provided were useful for business development.





## Objective AQ-4

*Assist with the development of standards and policy for the aquaculture industry.*


IMPLEMENTATION 2003-2005		
Objective AQ-4: Assist with the development of standards and policy for the aquaculture industry.		
Strategies	Anticipated Outcomes	Evaluation
A. Enhance participation in the development of Best Management Practices (BMPs) and regulations for finfish and shellfish culturists.	BMPs and regulations for improving culture practices will be developed.	Track adoption of BMPs and resulting improvements in culture practices.
B. Facilitate meetings of scientists, regulators, and growers to identify research needs.	Publications summarizing the identified research priorities will be produced.	Track research studies accomplished that address priority areas.
C. Facilitate meetings between culturists, regulatory agencies, and the fishing industry to discuss using aquaculture for stock enhancement.	Methodology for enhancement efforts that include BMPs for disease transmission will be developed.	Conduct peer review of enhancement methodology. Record number of enhancement projects.






## Goals

The overall goals in Fisheries are to:

 Provide information and technical support to enhance the long-term sustainability of the fishing industry.

 Increase participation of industry members in fisheries management and research.

We will work towards these goals by addressing the following objectives:

## Objective F-1

Assist the fishing industry to participate in the development and implementation of conservation and management strategies.

IMPLEMENTATION 2003-2005		
Objective F-1: Assist the fishing industry to participate in the development and implementation of conservation and management strategies.		
Strategies	Anticipated Outcomes	Evaluation
A. Perform outreach to industry and others, to increase participation in conservation and scientific activity planning.	Conservation and management projects will be more robust and thus more effective.	The evaluation will be based on objective measures of progress, such as the number and type of meetings arranged, numbers of participants, and follow-up surveys to determine the value of services provided; as well as more subjective measures, such as changes in attitude, new directions in management, and increased industry participation.
B. Organize, convene and/or support groups meeting to address management options and issues, such as statewide and regional councils, summits, and forums.	Information shared between groups will lead to better decision-making and support for conservation and management actions.	
C. Increase communication between, and within, groups on management and scientific issues.	Longer-term relationships within and between groups will be developed and supported, leading to better management.	



## Objective F-2

*Enhance collaboration between the fishing industry and scientists in the design and implementation of fisheries research projects.*



IMPLEMENTATION 2003-2005		
Objective F-2: <i>Enhance collaboration between the fishing industry and scientists in the design and implementation of fisheries research projects.</i>		
Strategies	Anticipated Outcomes	Evaluation
A. Participate in funding initiatives to foster partnerships between industry and scientists and identify research projects that will provide useful information to marine resource managers.	The Maine fishing industry will benefit from funding initiatives to involve industry members and fishing vessels in research.	Evaluation will include easily measurable indicators, such as the number of projects successfully begun or completed, the number of meetings organized and their attendance, and the number of industry members and scientists participating in research or other projects. Those indicators of progress that are less easily measured will be addressed through descriptive accounts, citing specific examples wherever possible and appropriate. For example, while a change in attitude among industry members may be difficult to quantify, such changes can be described through accounts of actions taken, decisions made, and improvements in regulations resulting from new scientific data or discoveries.
B. Work with industry and scientists on cooperative research projects to collect biological and fisheries data required by resource managers.	The fishing industry will be involved in research projects and provide data for management.	
C. Network industry members with policy-makers and researchers, and provide technical support for research efforts involving the fishing industry.	Industry support for, and involvement in, research will increase.	





## Goals

The overall goals for Program Management are to:

-  *Improve and expand Sea Grant’s research, extension, education, and communications programs.*
-  *Maintain a highly ranked Sea Grant program.*

We will work towards these goals by addressing the following objectives:

### Objective PM-1

*Obtain increased funding for Maine Sea Grant.*

IMPLEMENTATION 2003-2005 Objective PM-1: <i>Obtain increased funding for Maine Sea Grant.</i>		
Strategies	Anticipated Outcomes	Evaluation
A. Work with the Sea Grant Association and the National Sea Grant Office to ensure that new resources are allocated based on a competitive process and an assessment of need.	New funding from the National Sea Grant Office will be awarded on the basis of competition between the programs.	Track allocation of new Sea Grant resources to the 30 programs.
B. Develop coalitions of Sea Grant staff, researchers, and stakeholders to respond to current and future funding initiatives from the National Sea Grant Office.	Maine Sea Grant will be able to successfully respond to new funding opportunities from the National Sea Grant Office.	Track proposals submitted to, and funded by, the National Sea Grant Office.
C. Encourage researchers to submit proposals to fund part of a larger project, with awards contingent on the investigators securing the remainder of the funding through other grants.	By 2005, the portfolio of Sea Grant-supported research projects will generate at least \$100,000 per year from other agencies to support related activities (exclusive of the required 50% non-federal match).	Track grants awarded to investigators by Sea Grant and other agencies to support large projects.
D. Submit grant applications to other federal agencies (including National Strategic Initiative competitions run by the National Sea Grant Office) and public/ private foundations to secure additional funding for research, extension, and education.	By 2005, Sea Grant will increase funding by a minimum of 10% (\$150,000) over the 2003 level. This increase will be in addition to any increases in core funding from the National Sea Grant Office or match from the University.	Track grants submitted to, and funded by, non-Sea Grant sources.



## Objective PM-2

Maintain effective program management.

IMPLEMENTATION 2003-2005 Objective PM-2: <i>Maintain effective program management.</i>		
Strategies	Anticipated Outcomes	Evaluation
A. Use a Project Proposal Form to obtain information about staff projects and development fund requests.	Program Management will have access to information required to make decisions about projects, using consistent criteria.	The Policy Advisory Committee will evaluate all portions of the program over the course of four years. Feedback from evaluations will be considered by program staff in preparing for the next Program Assessment Team evaluation by the National Sea Grant Review Panel.
B. Develop and maintain a comprehensive, searchable database to track all Sea Grant projects.	The improved ability to manage information will increase our efficiency and effectiveness.	
C. Maintain contact with marine-related organizations in the state and at the federal level, and identify several new organizations to contact each year.	Key constituents will be knowledgeable about Sea Grant and vice versa.	
D. Utilize a consistent policy for awarding program development funds that provides for equitable access to the funds, has specified criteria for making funding awards, and is aligned with the Maine Sea Grant mission and allocation standards.	Program development funds will be made available to multiple institutions and will be awarded to research (50%), outreach (30%), conference support (10%), and other needs (10%) three times per year.	










## Goals

The overall goals for research are to:

-  *Focus research on the priorities of the state and nation, and maintain the highest scientific standards.*
-  *Transfer information to stakeholders in a timely and effective manner.*
-  *Train individuals qualified to work in marine science and policy.*

We will work towards these goals by addressing the following objectives:

### Objective R-1

*Focus funded research on the priorities of Maine’s stakeholders.*

IMPLEMENTATION 2003-2005		
Objective R-1: <i>Focus funded research on the priorities of Maine's stakeholders.</i>		
Strategies	Anticipated Outcomes	Evaluation
A: The theme areas will be identified as priorities in the annual request for proposals and project selection will maintain a balance among the three themes.	The portfolio of funded projects will focus on the three theme areas.	Program staff will maintain an accounting of research awards, theme areas, research priorities addressed, institutions involved, and outcomes and will report this information to the research subcommittee of the Policy Advisory Committee. The PAC will use this information in developing subsequent priorities and will advise program staff on improvements.
B: The Policy Advisory Committee will establish annual research priorities, which will be listed in the annual request for proposals.	The portfolio of funded projects will reflect the priorities established by stakeholders.	
C: An in-state committee of stakeholders will review pre-proposals based on the relevance of the proposed research to Maine.		
D: Funding decisions will give preference to projects that address one of the priority issues identified by stakeholders.		

## Objective R-2

*Include an explicit outreach component in funded research projects.*

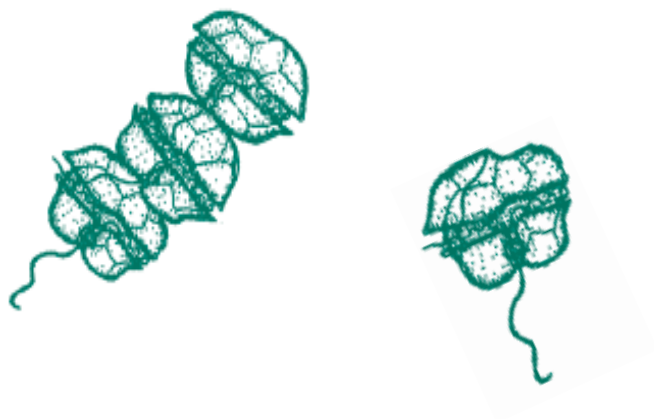
IMPLEMENTATION 2003-2005		
Objective R-2: <i>Include an explicit outreach component in funded research projects.</i>		
Strategies	Anticipated Outcomes	Evaluation
A: Applicants will develop outreach strategies in collaboration with Sea Grant communications and extension staff.	Results of funded research will be transferred to stakeholders in a timely and appropriate manner.	Marine Extension Team staff will help assess outreach efforts and impacts related to research projects. MET members will provide guidance and assistance in developing and implementing these outreach efforts when appropriate and help synthesize their outcomes in the annual report.
B: Outreach strategies will be evaluated by mail and panel reviewers, and used as criteria in the full and pre-proposal selection process.		
C: Request that researchers, besides reporting scientific discoveries from funded projects, also provide new questions and hypotheses related to their studies for use in setting future research priorities and initiating outreach activities.	Sea Grant will gain deeper knowledge of the issues related to research projects and will be able to develop priorities and award research funds to help address these new questions.	



## Objective R-3

*Train undergraduates, graduate students, and postdoctoral researchers.*

IMPLEMENTATION 2003-2005 Objective R-3: <i>Train undergraduates, graduate students, and postdoctoral researchers.</i>		
Strategies	Anticipated Outcomes	Evaluation
A: Applicants will be encouraged to include funding for undergraduate, graduate, or postdoctoral research in grant applications.	Maine Sea Grant will support 5-6 undergraduates, graduate students, and postdoctoral research fellows per year.	Follow subsequent careers of students and postdocs supported by Sea Grant and, when possible, assess the impact of these experiences on their careers.
B: Reviewers will evaluate the educational and training component of the proposed research and the applicant's prior track record in this area. Education and training opportunities will be used as criteria in project selection.		



## Objective R-4

*Involve more scientists in Sea Grant research.*

IMPLEMENTATION 2003-2005		
Objective R-4: <i>Involve more scientists in Sea Grant research.</i>		
Strategies	Anticipated Outcomes	Evaluation
A: Use the annual request for proposals to encourage proposals from researchers who have not previously received Sea Grant funding.	The number of proposals from, and grants awarded to, investigators who have not previously received Sea Grant funding will increase.	Track distribution of proposals and research awards.
B: Develop a brochure that will be widely distributed to researchers and institutions within Maine, outlining the funding opportunities and the program's research goals.		
C: Accept research at undergraduate institution (RUI) proposals and, when evaluated, take into consideration the time available for research and absence of graduate students. Expectations for scientific rigor, quality, and cost effectiveness will be the same as regular research proposals.		





**Goals**

The overall goals in Communications for the period 2001-2005 are to:



*Demonstrate that Maine Sea Grant has made a difference to the lives of people in coastal communities and to the economy of the state.*



*Increase the public’s general understanding of ocean and coastal issues.*

We will work towards these goals by addressing the following objectives:

**Objective C-1**

*Provide information about and promote Maine Sea Grant.*

IMPLEMENTATION 2003-2005 Objective C-1: <i>Provide information about and promote Maine Sea Grant.</i>		
Strategies	Anticipated Outcomes	Evaluation
A. Maintain a Web site for Maine Sea Grant.	The Web page will become a major communications tool for Maine Sea Grant as evaluated by a 3-person panel.	There will be a 10% increase in requests for information and number of new contacts made.
B. Produce a small format, inexpensive program brochure.	A succinct summary of the program will be produced and widely distributed.	
C. Working with the MET, produce at least 6 fact sheets highlighting accomplishments in specific projects or program areas.	Successes will be communicated to a wide range of audiences.	
D. Inform targeted audiences, including the state's Marine Resources Committee and legislators, about MSG activities.	Members of targeted audiences will be informed about MSG activities and will support the program.	
E. In conjunction with MET staff, develop topic-related exhibits for events involving existing and new stakeholder groups.	Constituents will be more aware of Maine Sea Grant's publications and services and take advantage of them.	
F. Produce an annual report summarizing major accomplishments in the context of the strategic and implementation plans.	Stakeholders will be aware of major accomplishments, and PAC and NSGO will be able to use the information to evaluate the program.	



## Objective C-2





*Provide the public with information about marine science and the Gulf of Maine.*

IMPLEMENTATION 2003-2005		
Objective C-2: <i>Provide the public with information about marine science and the Gulf of Maine.</i>		
Strategies	Anticipated Outcomes	Evaluation
A. Produce tip sheets/ press releases for local media on newsworthy Sea Grant research projects and extension activities.	Local media will write stories about Sea Grant projects and will view Sea Grant staff as good sources of information about marine and coastal science and issues.	Track distribution of tip sheets and number of stories generated.
B. Produce public service radio spots for Maine Public Radio about marine and coastal topics and place them on MPR web site.	Public awareness and understanding of marine science will increase.	Track number of spots produced, topics covered, and number of broadcasts of each spot.
C. Develop articles for one or two specialty newspapers.	Members of targeted stakeholder groups will receive periodic information.	Determine the willingness of publishers to continue to carry the articles.
D. Initiate and complete one or two major projects a year designed to produce high impact, long shelf-life publications for well-defined groups of stakeholders.	The targeted group's awareness and understanding of an issue of importance to them will increase.	Record number of copies of each publication produced and distributed.
E. Form a partnership with Maine Public Broadcasting Corporation and the University of Maine's New Media Program to produce multimedia programs.	At least one video program and/ or televised forum will be produced and shown on MPBC.	Assess feedback from viewers and MPBC.
F. Develop a system to update mailing lists biannually.	Mailing lists will be more accurate and targeted to specific audiences.	Record number of returns from mass mailings.



## Goals

The overall goals in Education are to:

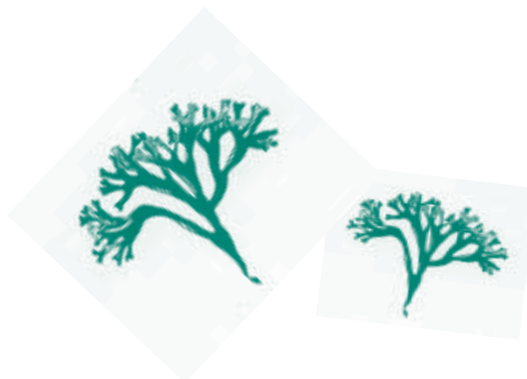
-  *Provide professional development opportunities in marine science for teachers.*
-  *Provide opportunities for K-12 students to become involved in research.*
-  *Provide opportunities for graduate students to gain experience in marine policy.*
-  *Promote K-12 students' and teachers' interest in, and understanding of, the ocean and coastal habitats, and encourage incorporation of marine science in classroom curricula.*

We will work towards these goals by addressing the following objectives:

## Objective E-1

*Provide experiential training opportunities for K-12 teachers.*

IMPLEMENTATION 2003-2005		
Objective E-1: <i>Provide experiential training opportunities for K-12 teachers.</i>		
Strategies	Anticipated Outcomes	Evaluation
A: Run teacher workshops each year on some topic in marine science and coastal issues. Teachers will receive continuing education credit.	Maine's K-12 teachers will have an increased understanding of the marine and coastal environment and have opportunities to incorporate marine topics and issues into their schools' curricula.	Record number of teachers attending each workshop, review participant surveys, and track requests for curricular materials.
B: Curricular materials related to the workshops will be produced in print format and made available on the World Wide Web.		





## Objective E-2

*Provide opportunities for high school and undergraduate students to participate in marine research and extension.*

IMPLEMENTATION 2003-2005		
Objective E-2: <i>Provide opportunities for high school and undergraduate students to participate in marine research and extension.</i>		
Strategies	Anticipated Outcomes	Evaluation
A. Support a program of research internships for high school students, teachers, and undergraduates (MERITS).	K-12 and undergraduate students will have an increased knowledge and appreciation of marine research.	MERITS coordinator tracks number of interns and surveys participants.
B. Provide opportunities for high school and undergraduate students to be involved in extension activities.	Students will have a greater understanding of extension activities and gain hands-on experiences in marine careers.	Conduct pre- and post-activity surveys of the participants.

## Objective E-3

*Provide graduate students with opportunities for experiential learning and service in marine policy.*

IMPLEMENTATION 2003-2005		
Objective E-3: <i>Provide graduate students with opportunities for experiential learning and service in marine policy.</i>		
Strategies	Anticipated Outcomes	Evaluation
A. Promote national Knauss and Coastal Management fellowships to graduate and postgraduate students in Maine by making presentations annually in Portland and Orono.	Student applications for the Knauss and Coastal Management fellowships will increase.	Record number of presentations, applications submitted, and fellowships awarded to Maine graduate students. Track subsequent careers.





## Objective E-4

*Provide academic and experiential opportunities for K-12 students to increase their understanding of marine and coastal issues.*

IMPLEMENTATION 2003-2005		
Objective E-4: <i>Provide academic and experiential opportunities for K-12 students to increase their understanding in marine and coastal issues.</i>		
Strategies	Anticipated Outcomes	Evaluation
A. Coordinate or co-sponsor and participate in the northeastern regional competition of the National Ocean Sciences Bowl.	High school students in the Northeast will increase their knowledge of marine sciences and will consider careers in this field.	Record number of participants and number of schools in the competition. Survey participants in the competition.
B. Provide 2 or 3 in-school workshops and /or field trips per year for K-12 students.	Students in local schools will gain knowledge about the marine and coastal environment through experiential learning activities.	Record number of workshops presented and number of participants. Survey students and/or teachers involved in the workshops.



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