



New York Sea Grant's Biennial Call for 2004-2005

Inviting Preproposals for Research Related to Marine and Great Lakes Issues

Preproposals Due Monday February 10, 2003

Total Funds Available -- Approximately \$1 million per year

The main goal of New York Sea Grant's research program is to provide valid scientific information that will serve as the basis for furthering the wise development, use, protection, conservation, and management of our coastal resources. The research must clearly be driven by identified needs and must provide enhanced opportunities for NYSG to 'make a difference' in addressing important coastal issues.

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I. Background

New York Sea Grant (NYSG) is a cooperative program of the State University of New York (SUNY) and Cornell University, with its main administrative offices located at Stony Brook University. Its mission is to identify, support, and extend research-based information, which enables individuals, communities, businesses, and other decision-makers to better conserve, utilize, and rehabilitate their coastal resources.

II. “Sea Grant” Research

While research projects supported through New York Sea Grant must address problems or opportunities important to this state, their results also should be of significance and generalizable towards addressing regional or national needs.

NYSG supports hypothesis-based research related to marine, Hudson estuary, and Great Lakes topics and issues. Projects must be oriented toward answering “why” or “how,” not just describing “what is.” Developmental work on new models or techniques also qualifies as Sea Grant research. However, efforts directed solely toward monitoring or surveys are inappropriate for Sea Grant funding. Expansion of understanding for its own sake is also considered inappropriate for Sea Grant. The need, expected significance and usability, and target audience (beyond other academics) must be clearly anticipated and described.

NYSG strongly encourages multi-disciplinary and multi-investigator research. NYSG is also interested in helping to foster new research talent, and encourages new and young investigators to apply. The student education and development of future scientists and decision-makers is also important to NYSG. Within the research program this is stressed primarily through encouraging investigators to involve graduate students in the conduct of their projects.

Because the Sea Grant mission includes extension of research and other results to clients, discussions with NYSG extension staff (see list in Section VII) may help hone the focus of research projects towards particularly useful information. ***Researchers are strongly encouraged to contact NYSG staff with their ideas to make sure they are addressing the most critical questions and to improve their understanding of what information and products will be most useful to NYSG’s clients.*** The value of this is reflected in Section V, in the description of the evaluation criteria.

An ideal Sea Grant project would attack a well-defined problem that society will be or is currently struggling with. The organization or people whose task it will be to make related decisions, or who will be able to make specific use of the project's results, will have been identified and contacted by the Principal Investigators (directly, or via NYSG staff). The project will show an understanding of what constitutes necessary and sufficient information for responsible decision-making or for applied use, and will promise to generate such. A project also should have sufficient intellectual content (theoretical basis, hypothesis testing) to make it appropriate for university research.

III. High Priority Topics For Preproposals

In this Call for Preproposals, NYSG invites research that will advance any of the specific objectives of *NYSG's Strategic Plan: 2000-2005*, or that address either of two Special Focus Areas.

A. Topics within NYSG's Strategic Plan

Proposal authors should read the attached *Goals and Objectives from NYSG's Strategic Plan: 2000-2005*. Appropriate topics for research will address one or more of the specific objectives listed under the goals. Research in many disciplines (e.g., biology, chemistry, geology, physical oceanography, and the social sciences) may be appropriate to address the wide range of topics.

*****It is very important to note that not all of the objectives may lend themselves to research as described in Section II. Since this is a Strategic Plan for NYSG's entire program, some objectives involve implementation, development, or demonstration projects to be conducted by NYSG's staff, and are not appropriate for proposals under this Call. Please contact New York Sea Grant if you have any questions about this.*****

Preproposals may be submitted that address objectives other than the specific ones listed, but they are unlikely to receive top priority ratings for programmatic interest.

B. Special Focus Areas for 2004-2005

More than one-third of NYSG's biennial research funds will be available to support one or more projects that link together under the umbrella of either of these Special Focus Area (SFA) options:

- ***Type E Botulism in the Lower Great Lakes***

Background information and the research questions to be addressed are in Sea Grant's February 28, 2002, Report "*Botulism in Lake Erie – Workshop Proceedings*" (available on the web at <http://www.seagrantsunysb.edu/botulism/pubs.htm> or from NYSG, see below). This SFA includes questions involving water quality; possible roles of birds, fish, invasive species, toxic algae, bacteria, hydrology, and climate; pathology; and human health risks.

- ***Impacts of Barrier Island Breaches in Marine Systems***

Background information and the research questions to be addressed are in NYSG's March 2001 Report "*Impacts of Barrier Island Breaches on Selected Biological Resources of Great South Bay, New York*" (available from NYSG, see below). This SFA includes questions involving physical oceanography (hydrodynamic modeling); water column productivity; benthic habitats and fauna; SAV and intertidal vegetation; and finfish and their habitats.

Though each project should be proposed as a stand-alone effort, coordination or linkages with other proposed projects under the same SFA would be advantageous. The referenced reports (above) provide the background and rationale for the questions posed. Other questions can be entertained, but more extensive justification will be needed from the proposer. Please contact NYSG at 631-632-6906 or mkethman@notes.cc.sunysb.edu for a hard copy of either report.

Even though monitoring and other non-research needs are identified in the reports of these two SFAs, please remember that NYSG will only entertain research as described in Section II, under this Call

IV. General Information About Preproposal Submission

A. Who is Eligible to Submit

Sea Grant is a federally-funded national college program, so faculty at academic institutions are by far the main recipients of NYSG's research funds. Nevertheless, proposals from other groups may be accepted and approved for funding, too. Eligible groups are listed below in order of preference for funding under this Call:

1. Researchers at universities and colleges in New York State.
2. Researchers at not-for-profit institutions in New York State.
3. Researchers at universities, colleges, or not-for-profit institutions not located in New York, as long as they are part of a team led by an eligible NY-based researcher.
4. Researchers who are personnel of state or local agencies.
5. Researchers at for-profit institutions or companies (with limits).

Federal employees may participate in projects as collaborators, but they may not be included in the budget. Federal employees and institutions are *not* eligible for compensation or budget items of any sort, and their contributions cannot be considered a source of cost-sharing.

B. Duration of Proposed Work

In this Call, most of the funding will cover two years, running from 2/1/2004 through 1/31/2006. While NYSG is accepting proposals for up to two years of work, only one year of support is awarded at a time. Continued support for the second year of a project will be contingent on demonstrated progress and availability of funds. One-year projects are welcome.

C. Budget Size (total of indirect plus direct costs)

The annual budget of a project may not exceed \$110,000 per year. Note that smaller budgets are desirable. At least \$330K will be reserved for projects in the Special Focus Areas. If SFA projects are lacking in number and/or quality, however, unused funds from the Special Focus Area pool will revert to projects proposed in response to the Strategic Plan.

The budget estimates (total of direct + indirect costs) provided in preproposal submissions are expected to be realistic. A substantial increase in the final budget request will be viewed negatively.

D. Cost-Share Requirement

Sea Grant requires that non-federal cost-share (a.k.a. matching funds) support in the amount of at least 50 percent of the Sea Grant funds requested be provided under this Call. For example, if \$50K is requested from Sea Grant, the proposal's budget should also include \$25K of non-federal cost-share. Investigators are strongly encouraged to demonstrate this level of cost-share because the NYSG Director has the authority to reject any proposal that does not do so.

E. Limit on Salary Requests

Principal and associate investigators with appointments providing nine (9) or more months of support annually are generally not allowed to receive more than two (2) months' total salary from NYSG per year. Other eligible principal and associate investigators will generally be allowed to receive only up to six (6) months' salary from NYSG per year. These limits may be relaxed under exceptional circumstances, with prior approval from NYSG. Under all circumstances, the amount of salary support requested or provided as cost-share must be warranted by the effort needed to conduct the project.

F. What to Submit

One copy of the completed Preproposal Submission Form (see Section VIII) must be received by the *deadline of 5:00 PM on Monday, February 10, 2003* at:

New York Sea Grant	Telephone: 631-632-6906
121 Discovery Hall	24-hour private fax: 631-632-6917
Stony Brook University	
Stony Brook, NY 11794-5001	Fax submissions are acceptable! Emails are not.

Do *not* send additional materials (e.g., CV, full budget, appendices, letters of support, etc.) at this preproposal stage. Such materials will be discarded.

G. Regarding Duplicate Submissions

New York Sea Grant should be immediately informed by the Principal Investigator if a proposal submitted under this NYSG Call will be also be considered under other Calls, e.g., as released by the National Sea Grant College Program or any other funding agency or source. In addition, please note that it is New York Sea Grant's policy to consider only full proposals that are submitted specifically in response to, and within the due dates for, this Call. Even if submitted to other Sea Grant Requests for Proposals, proposals will not be considered unless they were in this Call's pool from the start as a preproposal.

V. The Review Process

All preproposals submitted to NYSG in response to the 2004-2005 Biennial Call will be screened by NYSG's program management team, extension specialists, and Program Advisory Council using the following criteria:

- Responsiveness to NYSG's Biennial Call for 2004-2005 (i.e., this document and those it references)
- Significance of the problem (rationale); and
- Anticipated usefulness to NYSG Extension Staff and other stakeholders.

Only authors of highly-rated preproposals will be invited to submit full proposals. During full proposal development, investigators will be expected to facilitate coordination between their own projects and those submitted by other investigators, as well as with industry, agency, or private groups as appropriate. NYSG staff will attempt to be of assistance in this process.

Full proposals will be subject to peer review. Additionally, NYSG's program management team will utilize input from NYSG staff, the NYSG Program Advisory Council, and a technical review panel. The specific projects NYSG includes in its biennial proposal to the National Sea Grant College Program will be selected primarily on the basis of the following criteria: rationale, scientific or technical merit, innovativeness, professional qualifications of investigators, user relationship, responsiveness to Sea Grant priorities, and programmatic value. The National Sea Grant Program Office oversees NYSG's review processes and does not conduct a separate evaluation of individual proposals.

VI. 2004-2005 Biennial Call Timeline

December 6, 2002	Call for preproposals released
February 10, 2003	Preproposals due at NYSG
by March 17	NYSG invites selected PIs to write full proposals
May 15	Full proposals due at NYSG with all authorized signatures
by July 24	PIs receive masked peer reviews for response
August 1	PI responses to reviews due to NYSG
August 18	NYSG notifies successful investigators
by Sept 8	Revisions and final budgets for successful proposals due to NYSG
February 1, 2004	Funding begins for new 2004 projects
February 1, 2005	Funding continues for satisfactory multi-year projects

VII. New York Sea Grant Staff * = Program Management Team

Research Administration (at Stony Brook University)

- **Cornelia Schlenk***, Assistant Director (631-632-6906, cschlenk@notes.cc.sunysb.edu)
- **Jack Mattice***, Director (631-632-6905, jmattice@notes.cc.sunysb.edu)
- **Stefanie Massucci**, Fiscal Officer and Business Manager (631-632-6908, smassucci@notes.cc.sunysb.edu)
- **Patrick Dooley**, Research Program Coordinator (631-632-9123 at Stony Brook University, pdooley@notes.cc.sunysb.edu)
- **Lane Smith**, Research Program Coordinator (631-632-9780 at Stony Brook University, lsmith@notes.cc.sunysb.edu)

Extension Staff (locations throughout New York State)

- **Dale Baker***, Associate Director for Extension and Extension Program Leader (607-255-2832 at Cornell University, drb17@cornell.edu).
- **Laura Bartovics** (212-637-3816 at the NY/NJ Harbor Estuary Program Office in Manhattan, lmb55@cornell.edu) – harbors; urban estuary issues.
- **Antoinette Clemetson** (631-727-3910 at the Cornell Lab, Riverhead, aoc5@cornell.edu) – marine recreational fisheries; lobsters.
- **Helen Domske** (716-645-3610 at SUNY Buffalo, hmd4@cornell.edu) – coastal education; avian botulism; Great Lakes ecosystems.
- **Patrick Dooley** (631-632-9123 at Stony Brook University, pdooley@notes.cc.sunysb.edu) – brown tide issues.
- **Ken Gall** (631-632-8730 at Stony Brook University, klg9@cornell.edu) – seafood technology; seafood safety; seafood nutrition and utilization; seafood retailing and processing.
- **David Greene** (716-645-3610 at SUNY Buffalo, hdg2@cornell.edu) – community issues; 4-H and youth education; recreational safety and liability; Lake Erie issues; Native American issues.
- **Nordica Holochuck** (845-340-3983 at Cornell Cooperative Extension of Ulster County in Kingston, nch8@cornell.edu) – Hudson River issues; water quality; sustainable development; habitat restoration.
- **Eileen Keenan** (631-632-8730 at Stony Brook University, ek72@cornell.edu) – non-point source pollution.
- **Robert Kent** (631-727-3910 at Cornell Lab in Riverhead, rjk13@cornell.edu) – marine education; habitat restoration.
- **Diane Kuehn** (315-341-3042 at SUNY CESF, dmkuehn@esf.edu) – coastal tourism; tourism and recreation planning; community planning and development.
- **David MacNeill** (585-395-2638 at SUNY College Brockport, dbm4@cornell.edu) – sportfishery development; fisheries biology, management and conservation; aquaculture.
- **Mark Malchoff** (518-564-3038 at Plattsburgh State University, mhm4@cornell.edu) – aquatic resources; Lake Champlain.

- **Chuck O'Neill** (585-395-2638 at SUNY College Brockport, cro4@cornell.edu) – Zebra Mussel Information Clearinghouse; coastal resource planning and management; shoreline erosion and lake levels; coastal structures and construction practices.
- **Jay Tanski** (631-632-8730 at Stony Brook University, jjt3@cornell.edu) – marine facilities; coastal processes and erosion control.
- **Molly Thompson** (315-341-3042 at SUNY College Oswego, mat36@cornell.edu) – Great Lakes dunes and habitats; non-point source pollution in the Great Lakes.
- **David White** (315-341-3042 at SUNY College Oswego, dgw9@cornell.edu) – coastal recreational facility design, management, and operation; coastal recreation participation, uses, and impacts.
- **Kimberly Zimmer** (631-632-8730 at Stony Brook University, kszl@cornell.edu) – natural resources of Long Island Sound.

NYSG Preproposal # _____

**VIII. 2004-2005 NYSG Biennial Call
Preproposal Submission Form**

Due Monday, February 10, 2003
(fax to NYSG at 631-632-6917)

1. BRIEF PROJECT TITLE:

2. INVESTIGATOR(S): List principal, co-principal, and associate investigators, including name, address, telephone, fax, and email for each. *Also* indicate eligibility category (#) from Section IV-A for each.

3. TYPE OF PROJECT: Check appropriate category from Section III.

A. _____ Strategic Plan, by letter and number, indicate which Objective(s)
this aims at: _____

Duration of One-year _____ or Two-year _____

B. _____ Special Focus Area for 2004-2005
_____ *Type E Botulism in the Lower Great Lakes* or
_____ *Impacts of Barrier Island Breaches in Marine Systems*

Duration of One-year _____ or Two-year _____

4. BUDGET: Include direct plus indirect costs.

A. Estimated Request for Federal Funds from New York Sea Grant

Year 1 \$ _____ Year 2 \$ _____

B. Anticipated Non-Federal Cost-Share to be Provided to New York Sea Grant

Year 1 \$ _____ Year 2 \$ _____

C. Expected Source(s) of Cost-Share:

5. POTENTIAL PEER REVIEWERS: Names and affiliations of three out-of-state individuals of national standing and pertinent expertise who would not have a conflict of interest. We may or may not use these individuals, so you do NOT need to contact them.

6. BRIEF DESCRIPTION OF PROJECT: Starting on a *new* page, use up to two pages of text with the following headings to describe your proposed project. Use all-around margins of at least 1” and a font size no less than #12. Additional pages will be discarded.

- a) **OBJECTIVES:** List the overall objectives, with a statement of the hypothesis(es) to be tested.
- b) **RATIONALE:** Explain the significance of the problem and why is this an important issue to address/resolve. *Projects addressing the questions posed in the SFA reports only need to reference the pertinent section(s) of the SFA report here.*
- c) **APPROACH:** Describe the general approach to be used.
- d) **USEFULNESS:** Explain the specific usefulness that the project’s results will have to Sea Grant Extension and other clients/audiences. *Projects addressing the questions posed in the SFA reports may omit this section.*
- e) **LINKAGES:** Highlight whether the work is being proposed in conjunction with other projects or proposals, or will be able to coordinate with other efforts. *This is especially important for preproposals addressing the SFAs.*



Goals and Objectives from New York Sea Grant's Strategic Plan: 2000-2005

Appropriate topics for research under NYSG's Core Research Program will address one or more of the specific objectives listed under the goals below.

Research in many disciplines (e.g., biology, chemistry, geology, physical oceanography, and the social sciences) may be appropriate to address the wide range of topics.

***** It is very important to note that not all of the objectives may lend themselves to research as described in Section II of the Biennial Call. Since this is a Strategic Plan for NYSG's entire program, some objectives involve implementation, development, or demonstration projects to be conducted by NYSG's staff, and are not appropriate for research proposals under the Biennial Call. Please contact New York Sea Grant if you have any questions about this. *****

Preproposals may be submitted that address objectives other than the specific ones listed, but they will not receive top priority ranking for programmatic interest.

Economic Leadership Issues

Goal 1 – Increase The Competitiveness Of Coastal- Dependent Businesses

Objectives:

- A. Assist water-dependent businesses in improving management, operation programs, marketing strategies and responses to regulations and management policies to enhance business efficiency, effectiveness, cost competitiveness, and profitability.
- B. Design and evaluate approaches to enhance tourism and eco-tourism opportunities that help develop and/or promote environmentally-sustainable economically-stable tourism markets.
- C. Identify, assess and encourage the use of innovative techniques and technologies to prevent, control or reduce the environmental impact of marina operations, boating and other coastal-dependent businesses in a cost-effective manner.
- D. Identify and innovative strategies to minimize or reduce dredging impacts by reducing the need for dredging and reusing, recycling, and/or disposing of dredged material associated with recreational boating facilities.
- E. Assess the economic and environmental implications of innovative construction materials used in coastal areas.
- F. Help develop and initiate, in partnership with industry groups and federal, state, and local regulatory authorities, effective consumer education strategies that support wise growth and development of the seafood industry.
- G. Develop technical information on aquaculture organisms, systems and techniques to support rehabilitation or sustainability of aquatic populations and creation of economically sound business opportunities by overcoming current technological, marketing, regulatory or policy barriers to aquaculture development.
- H. Develop innovative, cost-effective technologies for processing seafood and bringing new products to market.

Goal 2 – Facilitate Sustainable Use Of Economically Important Coastal Fisheries

Objectives:

- A. Develop new or use existing tools to evaluate the effects of recent ecosystem changes on current and future sport and commercial finfish and shellfish fisheries and to identify harvesting and management policy responses to overcome barriers to sustainability.
- B. Identify and evaluate modifications that will maintain or restore fisheries health by reducing inadvertent fishing mortality in recreational fisheries, bycatch in commercial fisheries and overall gear effects on habitats.
- C. Develop information on how to control effort, how to identify sustainable effort, and how sanctuaries can contribute to fisheries sustainability.
- D. Identify factors influencing disease prevalence in fish and shellfish and how to identify them, assess their impacts and manage them to reduce pathologies.
- E. Develop capabilities to predict socio-economic responses of coastal communities to changes in fishery resources or accessibility.
- F. Examine the effects of various physiological and behavioral processes on the dynamics of fished populations and their predators.
- G. Develop a process understanding of population, system and community-level changes in ecologically or economically important living coastal resources.
- H. Develop models that link hydrodynamics and water quality to fish or shellfish biomass and production.

Coastal Ecosystem Health And Public Safety

Goal 3 – Improve The Quality And Safety Of New York State’s Commercial And Sport-Caught Seafood Products

Objectives:

- A. Coordinate efforts by the seafood industry and federal, state and local regulatory authorities to enhance the safety of seafood products and to successfully complete the transition to a state-of-the-art food safety control system (e.g., HACCP).
- B. Develop, test, and deliver new and innovative educational and training programs on seafood safety hazards and improved sanitation practices for consumers, the seafood industry and regulatory community as part of the national Seafood Education and HACCP (or other state-of-the-art system) Alliance.
- C. Identify the risks of contaminant burdens, pathogens and chemicals for seafood safety, develop cost-effective analytical techniques, and determine strategies for minimizing, eliminating or remediating potential impacts.
- D. Develop techniques to maintain or increase seafood quality during the period from catch to consumption.

Goal 4 – Prepare For And Respond To Coastal Hazards

Objectives:

- A. Use and demonstrate new information technologies (GIS, internet and web-based technologies, etc.) to help decision makers better quantify and evaluate the structural, social and economic impact of short- and long-term coastal hazards on communities and select effective potential mitigation measures.
- B. Demonstrate and foster the use of new sustainable approaches for mitigating coastal erosion hazard problems that incorporate structural and habitat-enhancing techniques.
- C. Provide technical assistance and advice to local, state, and federal partners in the development of large-scale and regional coastal hazard prevention or mitigation programs and projects.
- D. Develop the capability to proactively assist coastal landowners, public decision-makers, and marine contractors to deal with coastal high or low water, flooding, and/or erosion events.
- E. Focus or improve technologies to identify, predict and reduce the risk of natural hazards to structures, resources and users.
- F. Develop tools to use data on currents, circulation, sediment transport and other processes to predict the dynamics of filling and opening up of small, local harbors, bays, etc., as well as the dynamics of middle- and large-size coastal geographic areas.

Goal 5 – Assess And Enhance Coastal Water Quality

Objectives:

- A. Design non-point source water quality education programs that will assist existing federal, state and municipal water quality coordinating committees and water body management programs, lake associations, local governments and estuary programs in protecting and enhancing the quality of New York's coastal waters.
- B. Design and deliver best management practices for pollution prevention programs for non-point sources to property owners, municipalities, industries and businesses.
- C. Determine the processes and rates of transport, fate and effects of point and non-point source anthropogenic contaminants and pathogens (e.g., MTBE, fertilizer, sewage) and develop appropriate models to assess their impacts on developed coastlines.
- D. Design and deliver educational and outreach programs that meet the goals of the Lake Erie and Lake Ontario Lakewide Management Plans.
- E. Develop techniques to assess the effects of water quality on the alternative uses of coastal resources and provide information to coastal residents so they can evaluate policies intended to prevent or reduce impacts on water quality.
- F. Develop and support techniques to cost-effectively maintain high water quality in aquaculture effluents.
- G. Provide information to assist state and municipal drinking water treaters, public health officials, and local governments in protecting and better treating public and private drinking water for bad taste and odor and cyanobacterial toxin.

Goal 6 – Protect Or Enhance Coastal Habitats

Objectives:

- A. Educate community groups, professionals and agencies about the benefits of and techniques for improving the quality (structure or ecosystem function) of threatened, degraded or compromised coastal habitats (e.g., Areas of Concern).
- B. Develop and promulgate educational programs that estimate human carrying capacity and manage human access to coastal areas.
- C. Use small grants programs, endowments and public involvement to provide support for coastal habitat restoration.
- D. Develop or refine techniques to determine the ecological value of coastal habitats, to examine the effect of human activities on habitat quality and/or habitat fragmentation, to determine if or when habitats have been degraded, and to identify and evaluate the effectiveness of remediation techniques to restore those habitats.
- E. Develop tools to support manipulation for long term maintenance of wetland habitats threatened by sea level rise.
- F. Develop, collect and disseminate research-based information about essential fish habitat that will assist managers, communities, and the fishing industry in managing finfish and shellfish resources.

Goal 7 – Control The Spread And Mitigate The Impact Of Non-Indigenous Species (NIS) And Aquatic Nuisance Species (ANS) In New York's Coastal Waters

Objectives:

- A. Educate the public and other stakeholders throughout North America about ANS introduction, spread, control and impact (industry, drinking water tastes and odors, ecosystem components) mitigation via traditional methods, as well as operation of the National Aquatic Nuisance Species Clearinghouse and World Wide Web searchable database.
- B. Determine the causes of initiation and cessation of ANS such as harmful algal blooms (e.g., brown tide), in order to develop strategies for prevention or mitigation.
- C. Improve our understanding of how human activities influence exotic species (including diseases and parasite introductions) distributions and impacts.
- D. Determine the impacts of introduced species and harmful micro-organisms and develop effective response, detection, and control mechanisms.

Education And Human Resources Issues

Goal 8 – Develop The Capacity Of New Yorkers To Participate As Partners In Coastal Issues

Objectives:

- A. Work with Marine and Great Lakes educators to integrate new technologies and Sea Grant resources into K-12 classrooms.
- B. Prepare the next generation of coastal science professionals and decision-makers by supporting Sea Grant Scholars, by using New York's colleges and universities to transfer Sea Grant-developed information and by supporting Sea Grant Extension educators' service as adjunct faculty in selected courses and institutions.
- C. Develop a New York State undergraduate internship program.
- D. Develop and distribute educational materials to Congress, state legislators, and stakeholders on the principles and theory of resource management and uncertainties in current methods for making predictions and management decisions.
- E. Provide non-formal education on Sea Grant issues and techniques to groups such as scouts, 4-H groups, etc.
- F. Develop and use new communications techniques and strategies (including publications, the internet and the media) to aid outreach to stakeholders and to the general public in order to foster an educated citizenry.

Goal 9 – Develop New Partnerships

Objectives:

- A. Initiate a Sea Grant urban extension outreach effort in New York City.
- B. With the University of Vermont develop a comprehensive Lake Champlain Sea Grant program.
- C. Develop a comprehensive coastal and aquatic outreach effort with New York's Native Peoples, in concert with Cornell's American Indian Program, to aid them in managing and utilizing their aquatic resources.
- D. Maintain and improve positive relationships between the NYSG and existing and potential host institutions.