



Sea Grant

New York

*New York Sea Grant
Board of Governors Meeting
30 April 2013*

April 22, 2013

To the New York Sea Grant Board of Governors:

Enclosed is the Board Briefing Book for 2013, which reports on the activities of New York Sea Grant (NYSG) for the period February 1, 2012 through January 31, 2013. This period coincides with the same period that we use for reporting to the National Sea Grant Office at NOAA. This report summarizes the many activities in research, extension, and communications that the staff of NYSG is involved in, as well as the fiscal details of our operations. The past year has been busier than ever, especially in the wake of Hurricane Sandy as well as the multiple RFPs currently underway.

I request that you carefully review the major sections of this document, particularly the Action/Discussion Items, and then refer to the appendices as needed. I refer you specifically to Action/Discussion Item 1, the NYSG Budget Report; Action/Discussion Item 2, Other Funding Sources; and Action/Discussion Item 3, PRP Report and other reporting issues; all of which we will discuss at the meeting. If you have questions or concerns please contact me. I look forward to meeting with you in Buffalo next week and thanks for your support.

Sincerely,

A handwritten signature in dark ink, appearing to read "James W. Ammerman", with a long, horizontal flourish extending to the right.

James W. Ammerman, Director, New York Sea Grant
Enc.



**THE GOVERNING BOARD
OF NEW YORK SEA GRANT INSTITUTE
BRIEFING MATERIALS**

April 30, 2013
Buffalo, New York

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New York Sea Grant Board of Governors
Agenda for Annual Meeting
University at Buffalo
Room 107 Capen Hall
April 30, 2013

9:30 Refreshments available

10:00 **Convene Meeting** (*Cartwright*)

1. Welcome
2. Roll call of Board members, introductions of others
3. Additions or changes to the agenda

10:10 **Review and approval of the 2012 Minutes** (*Cartwright*)

10:15 **Introductory Remarks** (*Cartwright*)

10:20-11:00 **Action/Discussion Item #1: New York Sea Grant Budget Report** (*Ammerman & staff*)

- a. Federal budget issues
- b. New York State budget issues: NY Sea Grant as a SUNY-wide institute (SUNY Catalyst Committee presentation)
- c. Lobbying efforts
- d. Accept the financial report for last year and give advice for the coming year

11:00– 11:30 **Action/Discussion Item #2 Other Funding Sources** (*Ammerman & staff*)

- a. Outside grants
- b. Jamaica Bay Science and Resiliency Center
- c. Hurricane Sandy additional funding
- d. NY Regional Economic Development Councils (REDCs), others

11:30 – 12:00 **Action/Discussion Item #3 Performance Review Panel Report and other reporting issues**

12:00 – 1:00 **Lunch Break** (*Half-hour presentation by H. Domske*)

1:00- 1:30 **Follow-up to Action/Discussion Item #3 Performance Review Panel Report or other issues**

1:30-1:45 **Brief Program Highlights (if time permits): Sandy Response, current proposal process, others**

1:45-2:30 **EXECUTIVE SESSION**

2:30- 2:50 **New Business** (Items from the floor)

1. Select date and location of next meeting
2. Other new business

3:00 **Final Comments and Adjourn** (*Cartwright*)

New York Sea Grant Institute Board of Governors 2013

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New York Sea Grant Institute Board of Governors 2013

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Dr. Minghua Zhang

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**Ms. Patricia Riexinger (representing
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Term ends after 2015 meeting

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**Mr. Patrick Hooker (representing President
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Term ends after 2015 meeting

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NEW YORK SEA GRANT BOARD OF GOVERNORS PAST CHAIRPERSONS AND VICE CHAIRS

Until 05/23/78	T. A. Pond (SUNY at Stony Brook) Thomas Dyer (Attorney)
05/24/78 – 02/28/85	Edward Melby (Cornell University) Thomas Dyer (Attorney)
03/01/85 – 05/13/85	Thomas Dyer (Attorney) Donald Behrend (SUNY CESF)
05/14/85 – 10/01/85	Donald Behrend (SUNY CESF) Ray Ogelsby (Cornell University)
10/02/85 – 05/13/86	Ray Ogelsby (Cornell University) Vice Chair Vacant
05/14/86 – 06/14/88	David Call (Cornell University) William Tully (SUNY CESF)
06/15/88 – 06/12/90	Jerry Schubel (SUNY at Stony Brook) Donald Miltion (Cornell University Designee)
06/13/90 – 03/24/92	Lucinda Noble (Cornell University) Robert Phemister (Cornell University)
03/25/92 – 06/21/94	William Tully (SUNY CESF) James Lassoie (Cornell University)
06/22/94 – 06/01/96	James Lassoie (Cornell University) John W. Kalas (SUNY)
06/02/96 – 10/27/98	John W. Kalas (SUNY) Daryl B. Lund (Cornell University)
10/28/98 – 05/10/00	Daryl B. Lund (Cornell University) Marvin Geller (SUNY at Stony Brook)
05/11/00 – 04/26/02	Marvin Geller (SUNY) Kraig Adler (Cornell University)
04/27/02 – 03/25/04	Max J. Pfeffer (Cornell University) Michael E. White (SUNY)
03/26/04 – 05/25/06	Michael E. White (SUNY) Daniel J. Decker (Cornell University)
05/26/06 – 06/26/08	Daniel J. Decker (Cornell University) H. Lorraine Oak (SUNY) <i>Resigned in 2007</i>
06/27/08 – 04/29/10	David Conover (SUNY at Stony Brook) Helene Dillard (Cornell University)
04/30/10 – 04/26/12	Helene Dillard (Cornell University)

New York Sea Grant Board of Governors Meeting

**Cornell University, Weill Hall
Thursday, April 26, 2012**

Members Attending

Alex Cartwright
Lorrie Clemo
Daniel Decker
Frank DiSalvo
Helene Dillard
Michael Hoffman
Patrick Hooker
Robert Kraushaar
Patricia Riexinger
Ronald Seeber
William Tully, by phone
Michael White
William Wise, for Minghua Zhang

Members Absent

Gerry Barnhart
Minghua Zhang

NYSG Staff Attending

Jim Ammerman
Kathy Bunting-Howarth
Cornelia Schlenk
Mary Kethman, by phone
Leigh Hubbard

Introductory Remarks

Chairwoman Helene Dillard called the meeting to order at 11:05 am. After welcoming all in attendance and expressing appreciation for their participation, she initiated a round of self-introductions. Dillard pointed out that William Tully and Mary Kethman were participating by speakerphone, and William Wise was attending for Minghua Zhang.

Comments and/or additions to the agenda were solicited. Several people needed to leave early and the executive session was moved 2:30 pm so everyone present could participate.

The 2011 Board of Governors (BOG) Minutes were approved as presented.

Jim Ammerman, Director of New York Sea Grant (NYSG) welcomed and thanked everyone for attending. He also announced the new BOG members: Pat Hooker, an ex-officio agency member at Empire State Development, and Bob Kraushaar, Associate Provost at SUNY Central Administration.

Minutes for the 2012 meeting were recorded by Leigh Hubbard (NYSG Administrative Assistant).

Questions/Comments on Briefing Book Reports

Jim Ammerman stated that the Briefing Book Reports reflect NYSG activities for this reporting period (2/1/2011-1/31/2012). He highlighted information on Tables 1 and 9 of the Financial Report Section. He also explained the Federal and State Budgets for the reporting period, as well as noted that the funding for 2012 is incomplete at this point.

Table 1, New York Sea Grant Funding: Table 1 illustrated funding over the past decade in both actual amounts and in graphical form. State funding is slowly declining, Federal funding remains stable and additional funding varies. The anticipated funding is included for 2012 in chart and the graph. According to Mary Kethman (NYSG Fiscal Officer), this anticipated amount is as of March 2012 and does not include approximately \$200,000 that is expected from the Long Island Sound Study later in 2012.

Board commentary regarding Table 1:

William Wise asked about funding and whether outside funding applies directly to NYSG's mission. Ammerman explained the Strategic Plan is broad so that outside funding does apply to our mission. He used the example of the Long Island Sound Study (LISS) partnership. Many parts of our Strategic Plan are heavily meshed with that of LISS, and NYSG receives funding to administer research and outreach on their behalf. NYSG assists them in implementing their program, but at a cost. Cornelia Schlenk, Assistant Director, stated that NYSG may not get enough on behalf of the administration costs (we charge an estimated 10%, but contribute more, *gratis*); however the partnership is beneficial because we are closely linked to the research and work with LISS on getting the information out to the public. LISS gives NYSG public recognition for our work with them.

Frank DiSalvo referred to the graphical representation on Table 1, and questioned Ammerman about when the slow decline will be addressed in strategic thinking as it relates to real dollars. Ammerman admitted that the model is not sustainable in the long run. NYSG is one of the larger programs in the National Sea Grant Office (NSGO) and unless public funding (state/federal/local) improves, there need to be other sources of funding (via other fundraising) coming in. The Management Team (MT) is thinking about this significantly for the upcoming Strategic Plan.

Table 9, Extension Program Funds: Table 9 is a breakdown of the outside funding sources extension has received for the reporting year. Kathy Bunting-Howarth explained that the extension staff needs to support approximately 30% of their own salaries with grants and other outside funding. There are two NYSG extension staff who were 100% funded on other grants. One of these grants has been reduced so that only 60% of the associate's salary is funded by that external source and NYSG has picked up the difference. Funding extension staff and their programs is becoming increasingly difficult, even with two staff members retiring in 2011 (Bob Kent and Chuck O'Neill) who have not been replaced. She also mentioned that Extension associates bring in on average 40-50% of the total operation and programming budget.

Board commentary regarding Table 9 and Extension Highlights:

Daniel Decker questioned the 30% extension funding (Reports, page 13) and the Board will address the specifics of it in this meeting. Daniel Decker wanted clarification also on the 30% of external revenue as to how it was calculated and Kathy Bunting-Howarth explained the amount was based on the different accounts that we have. NYSG has enough money slated for extension to last until the start of the next omnibus (Feb 2014). She calculated we would need approximately 30% per extension person of additional outside funding to keep their positions. Now we have staff under stress to

work harder for grant money, grant money is more competitive and difficult to obtain, and we aren't focusing as much on extending our own research for that reason. (Jim Ammerman mentioned that the Board policies state that 33% of the core federal and state award goes to extension and they received an additional \$235,000 last year. However, this is different than the 30% discussed above and is detailed later.)

Kathy Bunting-Howarth recognizes that NYSG has to prioritize which programs are necessary to keep in NYSG, and which programming other organizations in the State, and State agencies themselves, can provide. While this may have worked historically, Patricia Riexinger again pointed out that all the past NYSG programming is not likely sustainable given current conditions.

Helene Dillard commented that she is not aware of extension staffs that are able to sustain this level of grant activity for salary (i.e., bringing in 30% of salary). She stated that the most anyone in CCE can secure is 20% and that 15% is the target for most staff. There needs to be a conversation on the Board policy of using 33% of core federal and state funding for extension. According to Kathy Bunting-Howarth, NOAA used to have more external grants that extension could apply for but unfortunately those opportunities have gone away and that amounts that are available have declined and become more competitive with more people applying. Cornelia Schlenk explained that because of the need for extension to recover salary from other sources, unfortunately less attention can be applied to extending our own NYSG-funded research. We need the extension staff to get the research results out to the stakeholders and without them doing that, less information is available.

In a related but separate later discussion, Bill Wise stated that the 33% policy (of core federal and state support for extension) appears to be a guideline and that Jim has discretion to reallocate as needed and that he should use that discretion (page 3 of Governing Board Policies for NYSGI). Though there was no vote about this, there was general agreement amongst Board members.

Federal Budget: According to Jim Ammerman, flat funding has been called the new "doubling" in a period of lowered expectations. Our federal budget is stable for now, but 2013 funding will not be approved until after the 2012 presidential election. The House wanted to cut NYSG by 30%, however the Senate mark prevailed and there was no cut. For 2013 the House has only cut a bit so far and the Senate and President proposed stable budgets. Other NOAA extramural research has been going down, but Sea Grant has remained stable. There are 33 Sea Grant programs throughout country and each program reports extensively to the NSGO. If there was no reporting then Sea Grant programs wouldn't maintain their budget, but the newly-required level of reporting is very time consuming and tedious. Reporting to the NSGO is Action/Discussion Item #2.

State Budget: Jim Ammerman explained that NYSG is a SUNY-wide institute and programs that were not truly SUNY-wide were cut from the SUNY budget. Thankfully we still received the SUNY-wide funding.

Board commentary on State Budget:

Robert Kraushaar (Associate Provost at SUNY Central Administration) explained there is good news and bad news with SUNY funding. It is currently only maintenance of effort, meaning that whatever money NYSG received last year will be the same this year (i.e. no cuts). There is \$120 million for university-wide programs. SUNY is restricting the funding breakdown for these programs and the idea is that all programs need to justify themselves annually rather than assume they will receive set funding. This prevents unnecessary programs from receiving funding solely because they were legacy programs. NYSG is likely to be okay but it's possible for funding amounts to vary year to year. Cornelia Schlenk asked Robert Kraushaar whether SUNY-wide legacy programs will be phased out and he responded that yes they will be phased out and their funding will be refocused on necessary programs. Programs will need to be justified and reviewed every year and their funding could go up or down. This will include NYSG.

Under the Bylaws, the BOG must vote to accept the financial reports. William Wise moved to accept the 2011 financial report. William Tully seconded this motion. Motion passed.

Education: Jim Ammerman stated that he and Kathy Bunting-Howarth regularly meet with State and Federal legislators and staff. They are constantly working to improve NYSG's connections with both SUNY and State legislators. Most recently, they met with SUNY Provost David Lavallee, Senator Ken LaValle, and Assemblyman Bob Sweeney.

Action/Discussion Item #1**Consideration of the 2014-2017 Strategic Plan**

NYSG is working to draft a new Strategic Plan for 2014-2017. The Timeline for the Strategic Plan is available in the Briefing Book on page 1 of Action/Discussion Item #1. Jim Ammerman explained that while NYSG developed a plan in 2009, we need to have another prepared by 2012 year-end for proposals that will award funding in 2014. This time, the NSGO is going from the bottom up, not top down, and all state programs will be making new strategic plans at same time the NSGO is recreating theirs. It is causing frustration amongst state programs since it was done in 2009 and many are merely making small changes and not major ones. The NSGO just established a new reporting system and no one wants to restructure in a major way with new reporting methods just in place.

Jim Ammerman asked the BOG to first discuss Section 3 of Strategic Plan (Budget Goals for Fundraising Activities on page 16, Action/Discussion Item #1) because he felt this needed the most attention and logically followed the previous discussion. If there is remaining time at the end of the meeting, the other sections will be addressed in greater detail. This section of Strategic Plan is essentially about ways to seek money. There are five goals and the MT is meeting tomorrow to work specifically on Goal IV (*Determine the appropriate amount of resources, personnel, and program development dollars to be invested in achieving the above goals and strategies*).

NYSG is part of 3 regional Sea Grant efforts: the Great Lakes, Mid-Atlantic, and Northeast. Federal funding is based on the history and age of the state program. Funding has remained relatively proportional to each program over time so all programs remain relatively steady in

their federal core budgets. Each program gets rated on how well it compares to other programs, with its budget level taken into account. Jim Ammerman believes that NYSG's share of the National Sea Grant federal funding will remain constant.

Board commentary on Action/Discussion Item #1: Section 3 of the Strategic Plan:

Robert Kraushaar mentioned hard vs. soft money and stated that what NYSG has is what most researchers love; \$2.5 million is hard money and researchers would love this. NYSG is not maximizing hard money (which is slowly decreasing) and it needs to restructure how it goes about expending money to leverage it. The soft dollar amount should be 2-3 times the hard dollar amount if leveraging properly. While extension applies for a lot of small outreach grants, any leveraging of NYSG research grants is done by our PIs and not NYSG. NYSG does not conduct research or direct implementation activities, so does not seek outside grant support for them. William Wise agrees with the general tenor of this, but feels while NYSG's funding amount has remained steady, we need to look for expansion possibilities elsewhere since there is a chance our funding will decrease.

Jim Ammerman continued, explaining that NYSG PIs use our grant money to leverage and get greater grant money, but we cannot use those amounts in our metrics reporting. Both Robert Kraushaar and Patricia Riexinger believe we should get credit for these leveraged funds and we should be able to report them in some sense. Robert Kraushaar expressed the importance of this reporting due to what is going on now within the state where things are all tied back to the economic development of the state and NYSG should be able to talk about the work we do in relation to how it impacts the state.

Alex Cartwright felt there was no comparison to other Sea Grant programs available and asked several questions regarding funding. What percent of other programs funding is core and state compared to outside sources? He wanted to know how well are others doing? If you look at this peer model, what is the availability of state and federal funding levels and how does this match to the federal agenda? Is there not a mechanism instituted that if PIs go for outside funding (such as NSF) with funds they are leveraging from NYSG, do these PIs have an expectation of working with us in the future? (Comparisons to other programs are on p. 16-17 of Action item #2, but there is no explanation as to what accounts for the differences.)

Michael Hoffman stated that Hatch funds have been leveraged about 1:9. The PIs use our money to get someone else's money and we need to track this. It's a simple email to contact the PIs and find out how our money has helped them receive more. Schlenk pointed out that this is being done as a regular part of our project tracking. Michael White feels the BOG should create a subcommittee that would work with staff on improving our leveraging and its reporting. This is something that could make a big difference and NYSG would be sure to implement. He would also volunteer to be part of it.

Pat Hooker also mentioned that agencies are looking closely at how to best work with others to make the most of the money. Patricia Riexinger agreed and pointed out a laundry list of needs/partnerships that are possible. Jim Ammerman understands and his own observation is that every state Sea Grant program is different. Some get large amounts of state support, some get more from state than federal, but regardless there are opportunities to make changes. Daniel Decker feels NYSG needs to tie into work that is going into the new regional economic development councils and work together: let's see if they mesh and leverage to double the money. Robert Kraushaar emphasized "high needs" money (e.g., producing workers that are needed in certain areas) and also suggested that NYSG align with the councils so that more funding might be secured that way. There was a relatively lengthy discussion about this, with several BOG members contributing. NYSG will pursue this with potential assistance from White, Cartwright, and Hooker, and Jim Held (former Board Member) at Empire State Development.

Daniel Decker asked if there is a process for identifying priorities on pages 15-16 of the draft 2013-17 Strategic Plan since this is a long list of goals. As optimistic as the goals are, what happens if staff needs to be reduced since this is a possibility based on funding? Kathy Bunting-Howarth has put a lot of thought into Daniel Decker's question on staff reductions if funding is not increased, and has talked to Cornell Human Relations to find out what the factors she can look at--what is legitimate. She is in the process of creating criteria she can use in determining the programmatic priorities for the extension which could include: ability to harness outside funds, whose work has the largest economic impact, who is extending research, who is bringing in the most money, etc. It will be difficult.

William Wise asked about the extension 33% allocation and whether it is up for discussion because it has a potential to change? Jim Ammerman stated yes and explained that we need the BOG's official approval for how we spend the core dollars and when we decided on sending the extension program over 33% for the current year it was a one-time thing. We also need to make a decision whether to stay at this amount (33%) or whether circumstances might warrant changing it. Helene Dillard asked the BOG to go to page 7 (Action/Discussion Item #1) on technical focus areas, for example, and note the number that are extension goals (most are). She believes 33% of core for extension funding is not appropriate and it should be a higher number. She understands it is a tough call since research tends to be more expensive, but extension is such a major aspect of the program and we need to adjust to reflect that.

Jim Ammerman voiced that research is harder to report on impacts than extension, but we do incorporate several research performance measures into reporting. In recent years, we have been somewhat disappointed in the proposals we have been receiving. PIs are not as interested in our RFPs, as previously, because now they are much more specific. Also, we do not offer as much money as some of the larger federal programs. PIs will stretch to make their projects applicable to our RFPs, but often this is not really successful. Research impacts are written for the work done, but (in part because there has been no extension) there are fewer than for extension and the turn-around time is much longer as research projects can last years. Extension impact statements are clear impacts from their work and are completed at a quicker pace. Extension impacts are

also more visible to the public and have the ability to reach larger groups of constituents.

Patricia Riexinger returned to the 33% extension funding and asked where it came from? Bill Wise volunteered that it was established in the very early days of NYSG, probably without much debate.

Riexinger also believes that if we didn't fund research for the next 5 years, extension could easily fill that time getting the research information out. Not that she is recommending it, but is just stating it's possible. Kathy Bunting-Howarth knows that we still have extension needs, but NYSG because of staff expertise; it is difficult to re-task staff and apply for grants in other areas. As a program, we want more flexibility. We get stuck in this cycle of not having the manpower to get money for additional extension work since we don't have the staff that could apply for available money like we should because we don't have funding to hire someone for the position to begin with. Jim Ammerman reminded the BOG that the NSGO recommends at least 40% of their core funding be applied to research.

Alex Cartwright feels the NYSG research grant process takes too long. It's beneficial to everyone to move quicker. He asked why we don't look at what types of grants we fund and the types of people that receive them. The targeting of our research grants is not clear. What are we ultimately looking for —just to give money to PIs for their research or to leverage their funding for more? With that kind of information he might be able to understand if changing the % to extension is even an option. Jim Ammerman explained that our timing is mainly set based on what the NSGO is looking for. Some programs do RFPs every year but most are on the two-year schedule set by the NSGO. The overall schedule and length of time of the process is mainly an NSGO mandate.

Board Recommendation for Strategic Plan Section 3: Based on this discussion, the Board recommends better accounting for the leveraging of NYSG research funding by our PIs. By having some way of reporting our research funds leveraged by PIs for additional funds, NYSG would be able to have an additional measurable impact on the receipt of research funding by New York PIs.

LUNCH BREAK at 12:45

Jim Ammerman returned to Strategic Plan after lunch, highlighting the remaining two sections and looking to adopt overall objectives. He understands that the Strategic Plan and our direct mission are not easy to relate to legislators or stakeholders. Instead, he has adopted "The 3 E's": Environment, Economics, and Education.

In 2009, the Technical Focus Areas underwent a total rewrite. Formerly there had been eight (and called themes), but now there are five (and renamed focus areas). People have said we can drive a truck through them based on their breadth. NYSG has adopted A, B, C, and D as major Focus Areas (see pages 8-12 in Action/Discussion Item #1). E (Great Lakes and Ocean Literacy in NY) is an education-based Focus Area that NYSG is now adopting because the NSGO is also proposing to split it out. Our previous education work has been lumped into the other focus

areas. We chose not to add education previously because it would have made reporting to NSGO more difficult and we wanted to keep our Focus Areas in line with theirs. NYSG is also changing the focus area titles in the new plan to increase accuracy. For example, we changed Safe and Sustainable Seafood Supply in New York, to Sustainable New York Fisheries and New York Seafood Businesses.

Board commentary on the remainder of the Strategic Plan Draft:

Robert Kraushaar asked if the Strategic Plan is something that is attainable. For the staff power and money you have, can you do it all? Jim Ammerman responded that we can't do it all. This is why we need to discuss the plan. We also need to prioritize and since it's not strategic. Any suggestions to whittle the plan down would be appreciated.

Kraushaar also feels that buried in the Strategic Plan is the potential impacts of climate change and it is a huge issue that should have a major focus. Jim Ammerman agrees but feels it is a broad topic and can be a political hot potato, so NYSG does not want to take sides and risk funding depending on the politics. We are not an advocacy organization. Climate change can be in the back of people's minds, but it's applicable to all focus areas and should be present in their thinking. People NYSG works with, however, mostly don't want to focus on that kind of big picture because they need to think of what happens now and in the near future (e.g., storm surge risks for the next hurricane). We do not need to highlight climate change as a separate focus to deal with it; it falls into all categories in some way and will be highlighted at that level.

Patricia Riexinger asked where the MT is with the next version and what is NYSG is planning to do next. She wants to understand what the actual plan of action will be. Cornelia Schlenk explained to Riexinger that we are asking for feedback and we are working to finalize the plan. The BOG will have another opportunity review the Strategic Plan before a final version is written and then if there are changes we can make them. At this point, the process is about halfway done. In January, the PAC gave input and we also plan on putting focus groups together for additional input. An online survey was also available to provide input and the MT will make decisions based on the feedback received. The NSGO will also give input on our final plan.

Riexinger wants to make sure we meet the needs of the users and she wants to make sure the NYSG isn't determining the needs of the users based solely on what we think. Jim Ammerman confirmed that we are addressing the needs of the people. Michael White feels NYSG should create the Strategic Plan keeping in mind where the funding might come to and what the needs of the people are. Both things are important to take into account. Jim Ammerman agreed with this and hopes that these two areas coincide. Some of the funding for Focus Area E is being reduced in NOAA and elsewhere and this area may eventually disappear.

William Wise asked if there is anything in the Strategic Plan that is a complete and total departure from the past version. Jim Ammerman said Focus Area E is new. We have modified the strategies within the focus areas. We have added climate change and social science throughout since this is important to NOAA.

Kathy Bunting-Howarth added on that new this year are internal and budget pieces of the draft Strategic Plan. Jim Ammerman explained that internal goals are intended to improve NYSG's internal operations. Among other things, NYSG needs to work on improving the connection between research and extension. Currently, our PIs are not required to do outreach and we do not want to spend research funding on outreach. He does agree we need to do more outreach, but this might be partnering with state agencies to address and put out RFPs that particularly apply to their needs. (A possible example could be integrated assessment.) Robert Kraushaar feels that campus partnerships need to be increased because there are a lot of resources out there.

William Wise asked if NYSG has considered luring interest with money. Could we get into areas that could bring in more resources? Jim Ammerman said this is something that is not officially stated. Climate change is an example where NOAA tried to implement a climate service like the weather service but this was not funded. This is risky to do. Patricia Riexinger suggested that plenty of other federal agencies beside NOAA that could tap into something like climate change. We need to figure out how to plug NYSG into these agencies. Helene Dillard said Cornell Cooperative Extension used other words rather than climate change to essentially to discuss that. It's less ominous and focuses on immediate issues related to it. Kathy Bunting-Howarth agreed with these suggestions.

Extension Presentation Titled: New York Sea Grant Extension

Kathy Bunting-Howarth gave a presentation on extension during lunch, describing extension as the bridge between science and stakeholders. NYSG funds a lot of great research but if it doesn't get out to those who need it then it doesn't get utilized. She described some of the recent activities of each extension staff member, so the BOG can see how specific each person's work is to the program and how each helps fund their positions.

Kathy feels that NYSG needs to be nimble and plan our visibility based on current needs. NOAA wants a stronger focus in social science and we have begun to fund more efforts in this area. In addition, the National Sea Grant Office expects all SG programs to become leaders in climate change adaptation. This is a growing area for NYSG. NYSG has also received criticism for not having a strong presence in New York City (NYC). Nordica Holochuck (Hudson Estuary Specialist) is planning to increase her presence in this area. We have also added two new Program Advisory Council (PAC) members in NYC (Angela Licata and Cortney Worall) to help bridge this relationship.

NYSG Extension is making changes in its approach: creating new opportunities in NYC, meeting with researchers and scheduling regular meetings with Cornell Cooperative Extension offices where SG does not have staff located to learn out local needs, researching external funding, creating a new evaluation program, and approaching extension in a flattened reporting model. In her first year with NYSG, Kathy Bunting-Howarth is getting out there and getting to know everyone and the program.

Board commentary on Extension:

Robert Kraushaar does not currently see NSYG maximizing its use of the SUNY resources despite being a SUNY-wide institute (ex. SUNY Maritime College, SUNY New Paltz for

Hudson Valley) and NYSG should be working with more SUNY resources. He also asked whether NYSG has given thought to establishing certificate programs for participating in certain programs or training. It solidifies what NYSG does and makes the program a permanent fixture, rather than the potentially more limited impact of holding workshops. Kraushaar was trying to think of ways to give more permanence to programs rather than a scatter approach. A certificate may be more valued and someone can add it to a CV/resume with greater regard.

Michael Hoffman asked about NYSG's social media presence. Ammerman stated that it is very active. NYSG is on Facebook, Twitter, and YouTube. We have our website and are looking into creating an app with Oregon Sea Grant. The Salmon and Trout of Lake Ontario fish ID guide is of national interest and that really sparked interest in investigating the potential with app-development.

Hoffman also asked about whether we informed policy. Kathy Bunting-Howarth explained that in terms of working with agencies, NYSG has been gathering the science and taking it back to the RFP process. We cannot be advocates, however the NSGO asks us to report how many things have been implemented by the government based on work. Patricia Riexinger explained that this reporting is considered capacity building. Can NYSG have an influence on the staff level by partnering with agency people? Helene Dillard felt that utilizing something like Community and Regional Development Institute (CaRDI in the Department of Sociology at Cornell), 1- page briefs could be made to go out to where we need it and would give NYSG visibility.

Action/Discussion Item #2

New York Sea Grant Reporting to National Sea Grant Office

Jim Ammerman updated the BOG on national reporting and highlighted the different reporting NYSG does for the NSGO. Site visits are every four years and serve to review program leadership, collaborative activities with other organizations, and stakeholder engagement. NYSG's site visit was in 2010. The NSGO evaluates each Sea Grant program mainly on how well it fulfills its Strategic Plan. The information about NYSG will be put into a report that will be evaluated by a Performance Review Panel (PRP) in October 2012. The report has a clear benefit because it pulls together NYSG's major achievements, but its required contents are a constantly evolving moving target that we hope stabilizes soon. Kathy Bunting-Howarth explained that all Sea Grant programs evaluate and interpret information differently and it is hard to judge each program and rate them even when using the same measures. This is why there is so much frustration surrounding the NSGO reporting.

The NSGO provided some suggestions to NYSG that have been fulfilled during this reporting period. The site visit recommended that NYSG exploit our 40th anniversary and we did. Communications was heavily involved in 40th anniversary planning. Kathy Bunting-Howarth acted as the main representative for 40th anniversary events upstate. NYSG also published an article in the *Conservationist* (the NY State Department of Environment Conservation magazine) featuring our past 40 years. The NSGO recommended NYSG add new PAC members and 10 were added for our meeting in January. Jim Ammerman would like to add more people to the PAC since we will be losing 2 and we also need a chair elected. A visioning exercise was recommended by the NSGO and NYSG completed this in March

Board commentary on Action/Discussion Item #2:

Daniel Decker asked whether Jim Ammerman wanted the BOG to take action and write letters to the NSGO regarding reporting. Ammerman explained this Action/Discussion Item was meant to bring to the attention of the BOG so they are aware of the procedures NYSG goes through. Most state Sea Grants do not have BOGs or two university systems, so NYSG is as complicated as possible. The upside of reporting is it does give you an idea of what the staff is doing. To make reporting less challenging, NYSG has moved the BOG reporting to the same as the NSGO so we are doing our reporting on the same timeframe.

According to Cornelia Schlenk, the reporting process forces NYSG staff and Principal Investigators (PIs) to think about and move towards impacts and put the results in the report to get the information out. Michael White inquired about NYSG's continuing outreach to get PIs to apply to research RFPs. Schlenk explained that the Calls for Proposals used to be broader and we have limited some research areas more recently to get what NYSG has identified as priorities. This has limited the number of applicants.

Appointment of New Board of Governors Chair

At 2:30 pm Michael White motioned to go into executive session; it was seconded by Frank DiSalvo. All NYSG staff left the room so the Board members could have a private discussion.

When the full meeting reconvened, Dillard announced that Alex Cartwright was voted to be the new BOG Chairman, as her term is ending. She explained that Alex Cartwright will be working to select a Vice Chair from the Cornell side of the BOG. The Nominating Committee could not recommend a Vice Chair from the Cornell side because several members' terms are up and those slots need to be filled or reappointed first. The Board voted to let Cartwright simply choose a Vice Chair in this case. Once reappointments occur and Cartwright has made his selection, he will notify the BOG of the Vice Chair. He will also then need to establish an Executive Committee.

As a reminder, Board member terms are for four years, that is, to serve through four Board meetings. The term of Chair and Vice Chair are for two years and will be active through the 2014 meeting. Please see the Bylaws in the Briefing Book for more information.

Tentative Date and Location of 2013 Board of Governors Meeting

After surveying the Board and NYSG staff members, the new Board Chairman, Alex Cartwright, suggested that the 2013 meeting tentatively convene at SUNY at Buffalo on Thursday, April 25, 2013. The location is not definite and all members will be notified of changes.

Closing Comments

In closing, Helene Dillard asked if there were any questions from the BOG. Her own question for the NYSG MT is to think about how NYSG will prioritize for the new Strategic Plan. She feels this is something to address with the Board in the future before a final draft is created. Jim Ammerman believes the current draft is more of a comprehensive plan than strategic plan. The Strategic Plan is expected to be finalized in early fall and Patricia Riexinger asked if the MT could

provide criteria for why each item of the plan is chosen and for what purpose, not just a final draft to review in fall. The criteria will help the BOG understand how the plan was created and make it more strategic.

Helene Dillard asked that once the MT has had an opportunity to work further on the draft if they would give the BOG time to review and make comments. The MT plans to send it this summer.

The meeting was adjourned at 3:40 pm.

NEW YORK SEA GRANT INSTITUTE PROGRAM REPORT

April 30, 2013

Submitted to the Board of Governors

I. OVERVIEW

The enclosed report details the activities of the New York Sea Grant Institute (NYSG) for the period from February 2012 through January 2013. The pace of activities at NYSG has continued to accelerate, in no small part due to the impacts of Superstorm Sandy and other recent coastal storms. Sandy has affected every aspect of the program, from emergency research grants, to extension staff helping to assess damages, to important communications and outreach via social media. Recent staff transitions include the arrival of James Pearce as the new shared administrative assistant for the Director and Communications. Amy Boyajian also replaced Larissa Graham as the Long Island Sound Outreach Coordinator early in 2013.

Assistant Director Cornelia Schlenk and her NYSG research team were managing 20 active research grants with an additional seven co-sponsored grants managed by other Northeast Sea Grant Program (see Research Highlights). NYSG is currently running its Omnibus Research Call (for proposals) for 2014-215, including a special competition for an integrated assessment project, as well as participating in two regional Sea Grant proposal competitions. Improving the connection between our research and extension programs remains a major focus of the management team and is a challenge across the entire Sea Grant Network. Our current Call for Proposals has added new language to better address this issue. Support has also continued for undergraduate and graduate students, mostly as NY Sea Grant Scholars through our research program (see Higher Education Highlights), and two new Knauss Marine Policy Fellowships were awarded to NYSG Fellows.

Associate Director Dr. Bunting-Howarth continues to increase the number of proposals submitted by extension personnel to help address funding challenges (see Extension Highlights). Dr. Bunting-Howarth has also worked with state and federal agency managers to build relationships and possible future funding support for extension staff. She has also worked with communications to revise the *Fundamentals of a Sea Grant Extension Program* with extension staff and held regular extension staff meetings.

NYSG Communications Director Barbara Branca and her team maintained a busy schedule of publications, publications assistance to NYSG-funded principal investigators, press releases, and public events, both upstate and down (see Communications Highlights). Efforts continue to better connect communications with extension, as well as tracking progress of extension publications and other communications products. A new electronic newsletter, *Currents*, was launched in 2012, and a new website design will be unveiled shortly. Communications also further expanded its involvement with social media, which became a prime communications tool during the week that Stony Brook University was shut down after Sandy. NYSG Web Content

Manager Paul Focazio provided important post-storm updates to both the university and the public during this period and recently received a Folio Award from the Long Island Fair Media Council for these efforts.

NYSG has also continued its active participation in the Sea Grant network and the Sea Grant Association as well as regional Sea Grant activities in the Northeast (including the New York Bight), the Great Lakes, and the mid-Atlantic. As described in the Research Highlights, both the Northeast and Mid-Atlantic are currently conducting regional research competitions in which NYSG is participating. Several of our upstate extension staff continue to receive grants through the Great Lakes Restoration Initiative (as identified in the Fiscal Tables). NYSG also actively participates in the management and advisory committees of the EPA National Estuary Programs for Long Island Sound and the Peconic Estuary, as well as the Long Island South Shore Estuary Reserve Council. Assistant Director Cornelia Schlenk chairs the New York State Shellfish Advisory Committee.

The NYSG Program Advisory Council (PAC) remained almost constant at 21 members, following the addition of ten new members the previous year. Mr. Mario Del Vicario of EPA Region 2 recently retired and was replaced by Mr. Richard Balla, the new Branch Chief of the Watershed Management Branch. The PAC was recently involved in the programmatic review of our current Omnibus pre-proposals.

In 2012 NYSG developed a new Strategic Plan for the years from 2014 through 2017, which is guiding our current Call for Proposals. This was done at the same time that the National Sea Grant Office and all the other State Sea Grant Programs also developed new strategic plans. Given the ongoing challenges of funding and reporting, including the Program Review Panel (PRP) Report, this plan may be narrowed or otherwise modified in the next year.

As usual the important Action/Discussion Items focus on Federal and State Funding (#1), Other Funding Sources (#2), and the Program Review Panel (PRP) Report and other reporting issues (3#). Details are provided in these sections and these will be discussed in detail at the Board meeting.

I.A. Research Highlights

(For the period 2/1/2012 – 1/31/2013)

- **Overview**

New York Sea Grant's research activities during the period February 2012 through January 2013 involved the direct administration and management of 20 projects. The administration for seven additional co-sponsored projects is mainly being handled by other northeast Sea Grant programs. The overall distribution of funding from the various sources to the institutions of the lead investigators is shown in **Table A**, below. New York Sea Grant (NYSG) was involved in the development of more collaborative research Calls for Proposals than ever before. While regional efforts have been encouraged by the National Sea Grant Office (NSGO), it is not clear whether or how such funding contributions will be particularly valued when the Sea Grant programs are reviewed.

- **The Omnibus Research Call for 2011**

Five new research projects had been selected under NYSG's Core Research Call for 2011, as described in the 2011 Board of Governor's Briefing Book. This was about one-half the usual number because the entire durations for these projects, most of which are two-year, were to be funded with NYSG's 2011 federal allocation for research. With this adjustment, NYSG could fulfill the National Sea Grant Office requirement to become synchronized with the schedules of the other state Sea Grant programs. All five began their activities on 2/1/2011 and one ended as planned on 1/31/2012. Three of the remaining four projects (see **Appendix 1**) requested, justified, and were granted no-cost extensions through 9/30/2013. The project led by Bowser (R/FTD-11) ended as planned on 1/31/2013.

- **The Omnibus Research Call for 2012-2013**

As described in the 2012 Board of Governor's Briefing Book, NYSG's thorough proposal review process culminated in the selection of nine new, exciting research projects that began on 2/1/2012 (see **Appendix 1**). In December, progress reports were requested for review by NYSG before approving Year 2 funding. All the reports came in and were deemed satisfactory, except that some of the projects had considerable funds left in their accounts. Since NYSG was slated to receive only about 50% of its 2013 federal award in February 2013, and since we were being instructed by the National Sea Grant Office (NSGO) to spend down our accounts, we planned to proceed a bit differently than we would normally. For the Year 2 funds that would be awarded to the projects on 2/1/2013, we would proceed with 50% of the project's second year budget, when its account showed expenditures of about 90% of the Year 1 funding. As soon as the remainder of NYSG's federal award for 2013 is received, the remaining 50% will be added to the research projects' budgets. Unfortunately, this situation is causing a considerable amount of extra administrative fiscal effort. We hope to receive the balance for 2013 soon.

- **The Omnibus Research Call for 2014-2015**

As found in the next to last section of this briefing book, New York Sea Grant's new Strategic Plan was finalized and submitted to the National Sea Grant Office in October 2012. The priority areas for research identified in the Biennial Research Call for 2014-2015 (see **Appendix 2**) were taken from this new Strategic Plan. Additionally, there were two other particularly notable changes from previous Calls:

- a) We specifically stated that preference will be given to high-quality proposals which are designed to lead to products and knowledge of significance to NYSG Extension staff and their stakeholders; and
- b) Investigators were advised that full proposals would require data management and sharing plans to comply with new NOAA regulations.

The Call's email distribution list of researchers and administrators was fine-tuned in Dec 2012 to ensure all research capable academic institutions and appropriate Minority Serving Institutions (MSIs) were included. The list is otherwise routinely kept up to date, adding and updating addresses, throughout the year. Altogether, more than 1,100 individuals received the announcement of the Call by email directly from NYSG when it was released on 1/4/2013. The Call itself was openly posted on NYSG's website.

NYSG administrative and extension staff spent many hours on the phone and with email answering questions and giving advice to inquiring investigators. Informational and Q&A Adobe Connect webinars were held on 1/29/2013 and 2/4/2013, with several interested investigators participating in each. The due date for pre-proposals to be submitted electronically through NYSG's website portal is 2/22/2013, which is beyond this reporting period. If desired, a verbal update on the status of the 2014-2015 Biennial Research Call can be provided at the Board's 2013 meeting.

- **NYSG's Integrated Assessment Call for 2014-2015**

With the idea of trying something new to enhance the impact of NYSG's efforts, we adapted the concept of funding an Integrated Assessment from Michigan Sea Grant. The purpose of an Integrated Assessment project is to have a multi-disciplinary team work with existing data and materials to develop information, tools, partnerships, and management options to address a particularly challenging environmental issue. NYSG decided to commit \$75K per year for two years to pilot such an effort. There is an important opportunity for NYSG Extension involvement in such a project, so we needed to make sure at least one of our extension specialists had the interest and time in 2014 and 2015 to be involved. Then, based primarily on a stakeholder meeting held earlier in the year that discussed NYSG's role in Great Lake coastal processes issues, a topic of interest, "Resiliency of NY's Great Lakes Recreational Harbors," was developed. A special Call for a Great Lakes Integrated Assessment, 2014-2015 (see **Appendix 3**) was created to focus on that topic. The Call will be released on 2/7/2013 to the same e-distribution as NYSG's Biennial Call. Submissions will undergo review much in the same manner as regular pre- and full proposals with stakeholder and peer evaluations.

- **Northeast Sea Grant College Consortium Calls for Regional Social Science**

As described in last year's briefing book, the Northeast Sea Grant College Consortium selected four projects for funding under a special 2012-2014 Regional Call for Proposals focused on Human Dimensions of Coastal and Marine Ecosystems (see **Appendix 1**). Together the budgets of the projects totaled \$597,356 over two years. This includes equal contributions (~\$28.5K/year) from each of northeast Sea Grants as well as additional funds from NSGO. The projects all began in 2012 and are being administered on behalf of the Consortium by the Sea Grant program nearest to the lead investigator (WHOI, MIT, and New Hampshire). All northeast Sea Grant Consortium members will share in the successes of, and credits for, these projects.

Agreement was reached during 2012 to run a Northeast Regional Call for 2014-2016, again with contributions for two years from each of the seven states involved. NYSG has committed to \$25K in each of 2014 and 2015. Each state has made a similar commitment, which is to be honored whether or not researchers from that state are selected for funding. A Call for pre-proposals was developed with input from all the northeast states and was released on 1/15/2013 (see **Appendix 4**). It again focuses on human dimensions of coastal and marine ecosystems. Pre-proposals are due 2/22/2013.

- **Mid-Atlantic Sea Grant Regional Research Call**

Maryland, Delaware, and Virginia have previously collaborated on joint Calls for research proposals. In 2012 they approached the other mid-Atlantic Sea Grant programs from North

Carolina through New York to explore if we would like to join and expand their regional effort. The consensus was that there are many issues for which a regional research approach would be warranted and valuable. So, NYSG worked with this region, as well, to develop four broad research priorities and a Call for pre-proposals (see **Appendix 5**). NYSG's commitment is up to \$70K in each of 2014 and 2015, but only if NY-based investigators are selected for funding. The Call was released on 1/15/2013, with pre-proposals due 3/15/2013.

- **Long Island Sound Research Initiative**

This Initiative is a collaborative effort between the EPA Long Island Sound Office (EPA-LISO) and New York and Connecticut Sea Grants, and EPA awards dollars to the Sea Grant programs for it. Activity was underway relative to three separate Long Island Sound Calls during this period. One project from the Initiative's 2009-2010 Call ended in May 2012 after a no-cost extension. The six projects funded under the Initiative's 2011-2012 Call submitted progress reports and were approved for Year 2 funding in Spring 2012. **Appendix 1** lists these seven EPALIS projects underway during this period.

NYSG organized a February 2012 report-out of the 2009-2010 projects to the Long Island Sound Study's Science and Technical Advisory Committee, which was well-received. A special session entitled "Long Island Sound, America's Urban Estuary: Science, Policy, and Public Outreach" was developed for the 2013 ASLO Aquatic Sciences meeting, which is scheduled for February 2013 in New Orleans. That session will also include presentations from the Long Island Sound Research Initiative projects, but the anticipated audience will be international.

A third Call for proposals (for 2013-2014) was released in spring 2012 (see **Appendix 6**). Using a well-defined, collaborative approach to the solicitation, review of pre-proposals, invitation of full proposals, mail peer review, and a final Technical Panel, the Sea Grants of NY and CT handled the process which culminated in the selection of two multi-disciplinary projects. These two projects will begin in March 2013 and are listed in **Table B**, below. The two Sea Grant programs continue to share management and administrative responsibilities for the Initiative and each receives EPA dollars to cover a portion of these costs as well as the entirety of the research projects' costs. Clearly, this is a benefit to NYSG.

- **New OOC Instructions**

Many years ago New York Sea Grant developed Guidelines to help the Management Team in their consideration of Out-of-Cycle requests for funding. In June 2012, two new categories were finalized, added (see **Appendix 7**), and advertised. Now, besides the "Rapid Response Research Mini-Grant" option, researchers also may apply for mini-grants if they are university/college-based principal investigators new to NYSG (especially in subject areas less frequently supported by NYSG, e.g., social sciences or engineering) or principal investigators who are junior NY-based faculty pursuing "seed" grants. So far, we have had two inquiries in these new categories. The OOC project R/CCP-19 (listed in **Appendix 1**) was a Rapid Response mini-grant addressing the breach created by Hurricane Sandy. The other two OOC projects listed there were approved prior to the new Guidelines.

- **General Comment about Funding**

Although Program Development funds have been used for previous Sea Grant regional research projects and would have been an appropriate source of funding for the Integrated Assessment pilot, unfortunately, looking forward it seems that NYSG will have a much more limited amount of funds for such use in 2014-2015. Therefore, those commitments which have been considered to be outside our “core” research program now will have to be supported by our core federal research dollars. Combined with other budget adjustments in NYSG to cover staff salaries and operations, we may face a significantly reduced core research (and graduate student Sea Grant Scholar) program in the coming few years.

- **Tracking Research Results and Impacts**

The research projects funded by NYSG continue to produce useful results and important scientific advances. Impact tracking of past projects yielded some interesting outcomes during this reporting period (see **Appendix 8** for examples). In addition, publications and presentations by the principal investigators and other project personnel of the projects submitting required Progress and Completion Reports were many and varied (see **Appendices 9 and 10**). The list of journals in which NYSG-funded research was published appears below as **Table C**, demonstrating the breadth of scientific communities to which NYSG’s results contribute. The variety of presentation venues (see locations in **Table D**) also shows technology transfer at the state, regional/national, and international levels. Research activities, results, and impacts also continue to be highlighted in articles and in the searchable database on NYSG’s web site, in our printed *New York Coastlines* newsletter, and in the National Sea Grant Office’s PIER (Planning, Implementation and Evaluation Resources) database.

In the coming year, NYSG will pursue a new avenue of information to show impact. We have qualitative information about research dollars that were generated by faculty that are a direct result of having received New York Sea Grant funding. However, it would be valuable to compile more comprehensive and quantitative data. In order to gather this in a consistent format that will avoid double-counting, we will be asking former investigators to complete a "NYSG Leveraging Survey" to record additional grant dollars that were a result of, or enabled by, NYSG’s funding. A draft of the survey has been developed and will be distributed by summer 2013. The 2014 Board of Governor’s briefing book will include the results.

Research Tables:

INSTITUTION	FUNDING COMPETITION						
	NYSG Omnibus Research Call for 2011*	NYSG Omnibus Research Call for 2012-2013	Call for 2009-2010 EPALIS*	Call for 2011-2012 EPALIS	Northeast SG Regional Call 2012	Out-of-Cycle, Prog Dev funds	TOTAL
Cary Institute of Ecosystems Studies		1					1
Cornell University	1	2					3
Cornell Coop. Extension, Suffolk Co.		1					1
Fordham University						1	1
SUNY CESH		1				1	2
SUNY Stony Brook University	3	4	1	3		1	12
NYSG Direct Management	4	9	1	3		3	20
UConn-Avery Point (CT)				2			2
Yale University (CT)				1			1
Clark University (MA)					1		1
UMass-Boston (MA)					1		1
WHOI (MA)					1		1
Univ. of New Hampshire (NH)					1		1
NYSG involved, but other SGs provide management				3	4		7
TOTAL NYSG Projects	4	9	1	6	4	3	27

Table A: Location of Lead PI for all research projects (n=27) underway at any time during the reporting period. * Note that some projects originally selected under these two Calls do not appear here because they were already completed.

All PIs	Lead PI Institution	Project Title	Administered by
Georgas / Howell / Blumberg / Orton	Stevens Institute, Hoboken, NJ	Analyzing history to project and manage the future: Simulating the effects of climate on Long Island Sound's physical environment and living marine resources	New York Sea Grant
Vaudrey / Yarish / Kim / Pickerell / Brousseau	University of Connecticut, Avery Point	Comparative analysis and model development for determining the susceptibility to eutrophication of Long Island Sound embayments	Connecticut Sea Grant

Table B: Details of new projects selected for funding under the Long Island Sound Research Call for 2014-2015, slated to start on 3/1/2013.

Journal	Number of Publications
<i>Environmental Health Perspectives</i>	1
<i>Fish & Shellfish Immunology</i>	1
<i>Harmful Algae</i>	1
<i>Journal of Geophysical Research</i>	1
<i>Journal of Great Lakes Research</i>	3
<i>Journal of Plankton Research</i>	1
<i>Transactions of the American Fisheries Society</i>	1

Table C: Journals in which NYSG-funded research was published during 2012.

Location	Number of Presentations
Within NY	10
Other states within USA	15
International	6
Total	31

Table D: Locations of presentations (posters or talks) about NYSG-funded research in 2012.

I.B. Higher Education Highlights

(For the period 2/1/2012 – 1/31/2013)

NYSG's support of graduate students with **Sea Grant Scholar** fellowships continues to be a useful and cost-effective strategy for its research and education programs.

Seventeen students at four different universities held Scholar fellowships during this reporting period. There were 13 doctoral and four Master's candidates. Sea Grant Scholars who were U.S. citizens (12) again outnumbered those from foreign countries (five), with 11 females and six males (see **Table 1**). According to our records, none of these 17 Scholars graduated during this period. NYSG collects the theses and dissertations produced by former Scholars, and secured 11 during this reporting period (see **Appendix 11**).

Notable examples of recent Scholars' subsequent employment include positions as a lake and reservoir researcher for Colorado Parks and Wildlife, as a post-doctoral research associate at UNC Wilmington, and as research faculty at Tsinghua University in Beijing.

During this reporting period we ran competitions for Summer 2012, Fall 2012, and Winter/Spring 2013 Scholar Thesis Completion Awards (TCAs). The goal of the TCA competitions is to help ensure the timely graduation of a former Sea Grant Scholar by providing competitively awarded financial support to allow him or her to concentrate on thesis completion during the final, critical months of graduate school. The three competitions drew two applicants, one of whom was selected as a winner. Since the TCA program no longer draws much interest, we will consider phasing it out after 2013.

Funding for the Dean John A. **Knauss Marine Policy Fellowships** is provided to students by the National Sea Grant Office via the student's state Sea Grant program. NYSG had one Knauss Fellow in the 2012 year class, Cornell University's Ms. Jillian Cohen. Her one-year assignment in Washington DC was with the U.S. House Committee on Natural Resources – Subcommittees for Fisheries, Wildlife, Oceans and Insular Affairs and for Water and Power. For the 2013 class, two of NYSG's six applicants were selected in the national competition. They are

- Mr. Daniel Sousa of Columbia University, whose placement is in the office of U.S. Representative Mike Thompson (D-CA), and
- Mr. Zachary Schulman of Pace University's School of Law, whose placement is with the Marine Transportation Systems Management Directorate of the U.S. Coast Guard.

NYSG Director Ammerman served on the National Sea Grant Office's selection committee for the 2012 class. He learned a great deal about the process in the several-day review session and is using those insights to advise new applicants.

The **Sea Grant / NOAA Fisheries Graduate Fellowships** are another nationally-competed program that offers special opportunities for students. In this case, students work closely on their graduate projects with an expert (mentor) from NOAA Fisheries, with funding provided from the National Sea Grant Office via the hosting state Sea Grant program. Ms. Skyler Sagarese, a Stony Brook University Ph.D. candidate, completed her

third and final year of her Fisheries Fellowship during this reporting period. Her project is entitled “*Assessing spiny dogfish migration and population dynamics in the northwest Atlantic*” and we are awaiting the completion of her dissertation in May 2013. NYSG had no applicants for the Fisheries Fellowships beginning in 2012 or 2013.

NYSG also participated in the **NOAA Coastal Management Fellowship** competition which matches postgraduate students with state coastal resource agencies to work on coastal projects. Although we submitted four applications, none was selected at the national level. The funding for this program does not involve Sea Grant.

The National Sea Grant Office requires all programs to report specific metrics for higher education “students supported” (see **Table 2**, for this reporting period). The data include two Master’s and one doctoral level, as well as ten undergraduate students that were funded as part of NYSG’s research and extension program that are in addition to the 17 Sea Grant Scholars mentioned above.

Scholar Degree Program	Gender	Nationality			
Master’s 4	M 3	US 2	Foreign 1		
	F 1	US 1	Foreign 0		
Doctoral 13	M 3	US 1	Foreign 2		
	F 10	US 8	Foreign 2		

Table 1: Metrics for graduate students funded as NYSG Scholars (n=17).

Students Supported by Sea Grant Funds (i.e., hourly support, tuition and/or stipend)			
Category	Number of new students	Number of continuing students	Number of degrees awarded
Undergraduate Students	10	0	1
MS/MA Graduate Students	4	2	1
PhD Graduate Students	8	6	1
Other Degree Graduate Students	0	0	0

Table 2: Metrics for higher education students supported, as required by the National Sea Grant Office. **Notes:** a) number of degrees awarded may include students funded under previous reporting periods but who did not graduate until this period; this number is particularly hard to track for non-Scholars; b) this table includes students funded as Sea Grant Scholars, LISS Fellows, or with other non-Fellowship student support; c) the table does not include Knauss or Fisheries Fellows.

I.C. Extension Highlights

(For the period 2/1/2012 to 1/31/2013)

New York Sea Grant Extension (NYSGE) continues to deliver quality programming to address stakeholder needs in the face of tightening budget constraints, increased reporting requirements, a new leadership style and expectations and a new organizational structure.

This year we said good-bye to Larissa Graham, our Long Island Sound Outreach Coordinator, as she moved to Mississippi to join her family. She will be missed. Since this position is 100% funded by the Environmental Protection Agency's Long Island Sound Study, we were fortunate to hire Amy Boyajian to serve in the role. Prior to joining New York Sea Grant, Amy worked at the Rutgers Cooperative Extension Water Resources Program where she developed and coordinated award-winning rain garden outreach programs. Amy holds a B.S. in Environmental Science and an Ed.M. in Science Education from Rutgers University.

Finances remain a leading concern for NYSGE. After the announcement in mid-2011 that extension specialists needed to bring in 30% of their salaries through external sources, grant activity increased and is remaining high. In 2012, only two were able to meet that target (not counting the Non-point Education for Municipal Officials [NEMO] specialist and Coastal Community Development [CCD] Specialist who regularly bring in over that amount from one funding source or the Seafood Safety Specialist who has program-generated income covering a significant portion of salary costs). For 2012, approximately 37 grant applications were submitted, 16 were funded and another nine are pending. Given the transfer of one-time dollars from the Institute budget to the Extension budget of \$235,000 (in 2012) and the maintenance of the existing level of external funding, we estimate that the extension staff will remain whole through January 31, 2014. Extension appreciates the additional financial support. However, NYSG extension administration is concerned about the sustainability of existing staffing levels which already includes two vacancies.

Although the financial status and reporting requirements were burdensome, the productivity of the staff was impressive. Impacts are documented in **Appendices 12 through 14** and the following reflects some of their major accomplishments:

The devastation wrought by Hurricane Sandy had significant impacts on extension programming in the Marine District. **Jay Tanski** was called by the National Park Service early due to concerns related to a breach in the Fire Island National Seashore in a federal wilderness area. The breach was in a barrier island fronting a portion of the mainland containing 13,000 homes collectively valued at \$10 billion. Under state and federal policies, the breach was to be monitored for 45 to 60 days to determine whether it posed a threat to the mainland and should be artificially closed or allowed to close naturally. Jay provided the group with research-based information on impacts of new breaches from earlier NYSG efforts and helped them identify data needed to properly evaluate the situation. NYSG worked with researchers at Stony Brook University to identify ongoing field projects that provided some of the needed data, synthesizing and disseminating it to

the Assessment Team within two weeks of the storm.

Antoinette Clemetson sprang into action to support one of her stakeholder bases, the recreational fishing industry, after Hurricane Sandy. Stakeholders were concerned that their storm and on-going economic damages were not being fully captured by NOAA. Antoinette reached out to our sister Sea Grant programs in the Gulf to learn how they were able to assist constituents post-Katrina. In late 2012, she launched a survey for these stakeholders and is partnering with a faculty member at SUNY Farmingdale to complete the assessment of the data. Earlier in 2012, Antoinette worked to integrate seafood into local food systems, which ultimately improves the financial condition of commercial fishing businesses, consistent with Sea Grant's goals to establish profitable seafood businesses that depend on safe, high quality seafood products. Local food systems present many opportunities for farmers and seafood producers. Her programming activities connected with more than 2,000 New York City/Long Island area residents. Her work has improved our programming link to economic benefits and job creation as well as consumer health. In addition, Associate Director Bunting-Howarth was able to collaborate with Antoinette by facilitating a session with members of the recreational fishing industry and the DEC. Both groups are interested in establishing a better relationship with the other and this workshop was the first step towards this end.

Eileen Keenan continued her work with over 100 communities on Long Island who are required to manage their stormwater. In addition, she co-hosted the *1st Annual Long Island Green Infrastructure Conference and Expo*. The conference provided municipal officials and engineers, planners, consultants, property owners, landscape architects, and business leaders with information on how green infrastructure can be an effective means of protecting Long Island's valuable groundwater and coastal resources. Eileen also presented examples of various green infrastructure practices, explaining how such practices can be used to mitigate the impacts of polluted storm water. Such impacts include closure of shellfishing beds, poor water quality, declining shoreline aesthetics, reduced navigability, impaired recreational opportunities, and degraded wetlands and wildlife habitats. Additionally, in August 2012, three years of efforts came to fruition when 14 municipalities signed an agreement to form a cross-jurisdictional watershed protection committee to protect water quality and to establish the Oyster Bay/Cold Spring Harbor Protection Committee. Members include the Villages of Glen Cove, Center Island, Cove Neck, Laurel Hollow, Bayville, Lloyd Harbor, Mill Neck, Lattingtown, Muttontown, Upper Brookville, and Oyster Bay Cove; the Towns of Oyster Bay and Huntington; and Nassau County.

Larissa Graham spent her final year with NYSG as the Long Island Sound Study (LISS) Outreach Coordinator before joining her husband in Mississippi. She started a project developing social marketing techniques to improve lawn care in the Long Island Sound basin. In the spring of 2012, Larissa held two LIS Mentor Teacher Program workshops in New York. The first workshop, *Teach at the Beach*, was targeted for elementary school teachers and held in Wading River, NY. The second workshop, *Marsh Madness*, was targeted for high school level teachers and focused on collecting water quality and fish and macroinvertebrate population data. This workshop was held at Sunken Meadow

State Park in Kings Park, NY. In total, 29 educators participated in these two workshops. Evaluations conducted a few months after the workshops indicated the teachers were using the resources provided with more than 2,000 students and sharing the resources with their fellow teachers. Larissa also continued her work with the Sound Stewards. The New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) and LISS held four volunteer events in the fall of 2012 at LISS Stewardship Areas. The events were organized to improve the ecological conditions at these areas. More than 50 volunteers participated in these events.

In the Hudson estuary, **Nordica Holochuck** continued developing programming of relevance in the NYC area of the estuary. To assist her in this goal, Nordica was awarded a Cornell University College of Agriculture and Life Sciences (CALS) Intern, Bryan Chan, to help develop geo-spatial data for classroom use. In addition, Nordica worked with a partner organization, the New York State Marine Education Association (NYSMEA), to deliver marine science techniques and activities workshop for K-12 and informal educators in NYC at Columbia University. Twenty-two participants shared 13 activities suitable for classroom and nature center use. A second workshop planned at the NY Aquarium had to be postponed due to Hurricane Sandy. NYSMEA nominated and Sea Grant specialist Nordica Holochuck received a 2012 Science Council of New York City award in part for this effort.

In Buffalo, **Helen Domske** continues her high level of extension and education programming. Helen used a “teach the teacher” approach to educate over 100 teachers who will engage nearly 10,000 students in lessons on critical environmental issues. In-school presentations, college lectures and career day presentations reached an additional 2,000 students for the year. In addition, with colleagues from PA Sea Grant, Helen developed curriculum that focused on aquatic invasive species (AIS) and climate change to be shared with other educators around the Great Lakes basin. Helen also received a NOAA “B-Wet” Education grant that will allow her to train classroom teachers and informal educators on ways to engage their students in hands-on stewardship projects. Through her participation in the “Undo the Chemical Brew” team, 2.7 million pills were collected for proper disposal, and more than one million anglers, educators, students, 4-H youth, medical professionals, legislators, and community members were educated about the need to keep the chemicals in pharmaceuticals and personal care products (PPCPs) out of the Great Lakes. Her work as a part of this team led to her receiving an award from the Great Lakes Sea Grant Network for Outstanding Programming.

Helen was not the only member of NY Sea Grant recognized at the Great Lakes Network meeting. **David MacNeill** received an award for exceptional programming for his role in the trawl design workshop from 2011. This workshop was so well received that Dave was able to collaborate with Michigan Sea Grant to compete for a national office programming award to fund a second workshop. Dave, partnering with researchers from Buffalo State, was able to identify four of the species most likely to survive ballast water travel and thrive in the Great Lakes. This coming year, Dave will work on methods to educate managers and anglers about these potential threats and identify possible management efforts. Kathy Bunting-Howarth enjoyed collaborating with Dave and Dr.

Brian Weidel from United States Geological Survey (USGS) on a *Future Scenarios Workshop* for Lake Ontario. For two days, 25 people with diverse interests and training discussed and then created four potential 2050 scenarios for the Lake and its Watershed. The methods have been transferred to other professional organizations in the area and the resultant stories and process have been shared at professional meetings.

Mary Penney took on the role of Coastal Community Development specialist with gusto. She was elected as an officer to the Sustainable Coastal Community Development Network Executive Committee, which consists of Sea Grant Extension Specialists and representatives of the National Sea Grant Office and Sea Grant Assembly. In 2012, the SCCD Network provided Business Retention and Expansion (BR&E) training, which helps communities identify needs and opportunities of their businesses. This opportunity was led by Ohio Sea Grant. As a result, NYSG will pilot a BR&E program in 2013. The 2013 BR&E pilot in NY will benefit the recreation and tourism related businesses of Oswego County. In 2012, the NYSG Coastal Community Development Specialist worked with the Great Lakes Sea Grant Network (GLSGN) and NOAA Great Lakes Environmental Research Laboratory on the following initiatives: climate change (logic model updates, grant proposals developed and submitted, and development of whitepaper) and land use planning training (Tipping Points Community Planning Website (Illinois-Indiana Sea Grant, PI)). In addition, Mary took the Watercraft Inspection Stewards program to a new level, providing consistent programming materials, messaging and “uniforms” for all stewards across Lake Ontario. This program helps educate boaters of boat maintenance needs for the prevention of the spread of AIS while providing college students with a meaningful summer employment experience.

David White remains the most recognized face of NYSG in the upstate area, or at least he should be, given his two regular television appearances. While maintaining his series on YNN entitled *Discover Better Boating* and his monthly early morning appearance on a Watertown television station, Dave also helped design a new internet-based technology to increase boater safety. Partnering with the Great Lakes Observation System and Great Lakes Environmental Research Laboratory, Dave assisted in the creation of the St. Lawrence River Boaters Forecast, a real-time application of the Great Lakes Observing System for recreational boaters. Boaters, marina operators, and anyone with a computer or smart phone can access the easy-to-use website at www.glos.us. This new tool provides real-time and forecasted water current and water depth data for points all along the River. Users can simply click on their desired locations to see depth and current readings now and 12 hours into the future. They can also pre-set their own safety data points, e.g., a specific water depth or water current speed, and the Boaters Forecast will send an email or text alert when that point is reached. Knowing this information helps boaters realize when they should head back to homeport or seek a safe haven.

Finally, in addition to collaborations with staff, **Kathy Bunting-Howarth** led a national effort to update the *Fundamentals of a Sea Grant Extension Program* handbook which should be completed by the Board meeting in 2013. Working with the Management Team, she facilitated initial calls among a group of institutions which submitted a proposal to New York City and the National Park Service for a Center for Science and

Resiliency at Jamaica Bay. In addition, with funding provided by the Atkinson Center for a Sustainable Future, she participated in meetings associated with the RIO +20 United National Conference on Sustainable Development. While there, she gave a talk on Sustainable Fisheries policy at the US Center and participated in an international workshop on the oceans, Oceans at Rio+20, as well as meetings regarding the Urban Biosphere initiative. She continues to partner with the DEC and Cornell's Human Dimensions Research unit on developing a research agenda to assist in the identification and characterization of marine recreational fisheries stakeholders as well as the mechanisms for better engaging them in fisheries management.

I.D. Communications Highlights

(For the period 2/1/2012 to 1/31/2013)

The NYSG Communications group (3.06 FTE), with the assistance of several outside communications and IT professionals, worked together bringing high-quality Sea Grant information—whether print or digital—to targeted audiences, promoting and publicizing New York Sea Grant research and outreach efforts, and expanding Sea Grant's reach through its website and social media. During the reporting period, the Communications group has gone beyond its traditional roles of supporting extension specialists by producing fact sheets, by writing press releases about new research projects or by compiling reports for the National Sea Grant Office. With strategic use of social media, networking, and Constant Contact, NYSG Communications is maintaining our base audience while helping to grow and track new audiences as we transition from traditional print to digital media.

Staffing: The Stony Brook office underwent a staff change with the August 2012 departure of administrative assistant Leigh Hubbard who split her time between the NYSG Director and Communications. That position remained open until it was filled in late January 2013 when James Pearce was hired. Thus during the second half of the reporting period, a good amount of staff time was devoted to the search and eventual hire for the position. However, our half-time graphics person pitched in to help with administrative duties and created Excel spreadsheets to more formally track requests and the progress of work (especially from extension staff) on fact sheets, reprints, publications, press releases and website modifications.

Another change within the Communications group is that NYSG's Web Content Manager Paul Focazio has an agreement with the offices at Stony Brook Manhattan that allows him to work there several days of the week starting late May 2012, giving Sea Grant a presence in New York City that it has not had since the departures of NY-NJ Harbor Estuary and I Fish NY educators. In so doing, Focazio has been able to represent NYSG at outreach events sponsored by some of our current or potential metro-area partners such as the Metropolitan Waterfront Alliance Conference, New York-New Jersey Harbor Coalition, Alley Pond Environmental Center, NYC Department of Parks, New York Restoration Project and facilitate the participation of extension personnel (Bunting-Howarth, Clemetson, Gall, Holochuck) at NYC events.

Packaging information to targeted audiences: transitioning from print to digital

Flagship Publications: During the reporting period, Communications produced and distributed 7000 copies each of the Winter 2012, Spring/ Summer 2012, and the Fall 2012 issue of NYSG's award-winning flagship publication, *New York Coastlines*. Also between the Spring/Summer and Fall issues, the inaugural issue of *Currents*, NYSG's e-newsletter supplement to *New York Coastlines*, made its debut in late August 2012.

The Winter issue (distributed in February 2012) featured articles about NYSG's 40th celebrations statewide with links to numerous videos made especially to archive the 2011 events. The cover story of the Spring/Summer issue "Sound Research 'Gets to the Bottom' of Hypoxia, Red Tide" summarized the results of the two-year EPA/ Sea Grant projects on these two challenges to the health of Long Island Sound. Another article featured an award-winning trawl workshop convened by Fisheries Specialist Dave MacNeill, and one promoted the popular *Salmon and Trout of Lake Ontario* guide which he and partners authored. An article entitled "Identifying Distinct Sturgeon Population Segments" about funded research by Dr. Ike Wirgin of NYU that contributed to the endangered listing of Atlantic Sturgeon and an article on a NYS Marine Education Association-NYSG's teacher-training "Share-A-Thon" held at Columbia Teachers College gained the attention of and accolades from NYC Congressman Charles Rangel who wrote, "This institution is truly a jewel in the Manhattan community and I'm grateful for its work towards ensuring a more environmentally sustainable future for our city." (**See Appendix 15.**)

In July 2012, NYSG Communications put out the first e-version of *NY Coastlines* powered by Constant Contact, through which we've encouraged current *NY Coastlines* subscribers as well as new stakeholders to "opt-in" via a 2012 postcard series, postings on our social media sites, and targeted e-lists through the National Sea Grant network as well as GLIN and GLERL. The issue was distributed to 680 subscribers, with an open rate of 34.7% and a 33.8% "click-through" rate for the individual featured articles. (Industry standards are, respectively, 17% and 3%).

The Fall 2012 cover story "Are Birds Singing a Different Tune?" was an in-depth look at a funded Cornell project studying birdsong as an indicator of the effects of exposure to sublethal levels of contaminants such as PCBs. Another research-related article summarized the Fifth Annual NY Marine Science Consortium Research Symposium held at Stony Brook University. Outreach-related articles included NYSG's co-sponsorship and participation in the First Annual Long Island Green Infrastructure Conference; one on the development of geospatial materials in curricula for NYC educators; and important resources developed by community development specialist Mary Penney for protecting Great Lakes waters from aquatic invaders. A new column, *What's Trending*, summarized some Sea Grant research and extension efforts related to Hurricane Sandy (researcher Bowman, specialist Tanski) and community supported fisheries (Clemetson).

With a "critical mass" of e-subscribers established via Constant Contact, the inaugural issue of *Currents*, NYSG's e-newsletter supplement included numerous seasonal news

items such as resources on Rip Currents, Hurricanes and other Severe Storms; NYSG Discover Clean & Safe Sailboat; Brown and Red Tide in Long Island's Waters: the summer 2012 Metropolitan Waterfront Alliance (MWA) Conference and City of Water Day; NY Sea Grant Launch Stewards along NY's Great Lakes and Salmon River; NYSG Educator on Danger of Invasive Asian Carp in Great Lakes; Long Island Sound lobster studies; unwanted medicines take-backs in the Great Lakes; and Safety-At-Sea training at Montauk Coast Guard Station.

Other publications and outreach posters: In the aftermath of Hurricane Sandy, Stony Brook University was shut down for an entire week, and the following month's Nor'easter played havoc with people's lives, infrastructure—and publication schedules. In January, Communications compiled a "one-pager" on Sandy as well as press releases on the Out-of-Cycle projects that were selected soon after the storm (**Appendix 16**). Other publications that were completed (or reported completed) in the time frame include: ten peer-reviewed journal articles, one technical report, one symposium proceedings, 11 theses, four fact sheets, four newsletters, three post cards and three posters (**see Appendices 9 and 17**). One poster was created for the November "SUNY Systemness" conference in NYC and was also exhibited at the mid-September Sea Grant Week in Alaska. In conjunction with the poster, Communications provided a condensed a list of research projects that are examples of how NYSG interacts with other SUNY campuses (**see Appendices 18 and 19**). Another poster was created for the NYC Cornell food event originally scheduled for November and held in late January 2013. Also a new banner suitable for outdoor festivals was created for the "Seafood Throwdown" events initiated by Marine Fisheries Specialist Clemetson.

Working with Associate Director Bunting-Howarth, Communications wrote and was awarded a National Sea Grant Office grant to facilitate the editorial, design and publication of the *Fundamentals of a Sea Grant Extension Program, Second Edition* in summer 2012. The publication has been printed and shipped for use at the Sea Grant Academy.

Dissemination of information through publications, displays and promotional items
Communications sent, delivered or displayed publications and promotional items for Stony Brook University events: Bay Scallop Bowl (Feb 2012), EarthStock (April), New York Marine Science Consortium (Sept 2012); sent materials to NYSMEA annual conference, Safety-At-Sea (Mid-May, Montauk), *Seafood Throwdown* at Suffolk County Farm in Yaphank, NY (Aug 2012) and through the NYS Distribution Library system, Albany.

During the reporting period, there was an uptick in NYSG's presence at events in metropolitan NY where materials were displayed at: NYSMEA's 'Share-A-Thon' at Columbia University (March 2012); Metropolitan Waterfront Alliance Conference (May 2012); MWA's City of Water Days (July 2012); Seafood Throwdown, Brooklyn's Grand Army Plaza Green Market (July 2012); National Estuary Day, Alley Pond Environmental Center (September 2012); 20th Annual Little Red Lighthouse Festival at Fort

Washington Park (October 2012); and Cornell CALS 'From Farm to Fork' NYC Event (January 2013).

Sea Grant network: Mid-Atlantic Sea Grant Regional Meeting (April 2012) Created poster: “Meet New York Sea Grant Extension: They Bring Science to the Shore”; Sea Grant Week, Alaska (Sept 2012) “Systemness” poster.

For legislators: Information packets of impacts statements and materials related to Sandy were prepared for the NYS Assembly and Senate delegation in Albany in 2012 and for the NY Congressional delegation and US Senators for the Director Ammerman’s visits to Washington DC.

Publicize New York Sea Grant research and outreach efforts

NYSG staff wrote and/or distributed 104 press releases or advisories between February 1, 2012 and January 31, 2013, many of which were picked up by the media or other sources (e.g., the National Sea Grant Office, Great Lakes Environmental Research Laboratory) via social media. Placement of stories related to Great Lakes extension staff in Great Lakes print and television markets is due to the efforts of freelance publicist Kara Lynn Dunn. For the downstate media market, several responsive new reporters at *Newsday* and *Patch.com* have made placement of research and extension stories more successful. Find a complete listing in **Appendix 20** or at NYSG’s website at: (**“News” > “Press Releases”**: www.nyseagrant.org/press)

Thanks to promotion via a press release in the Great Lakes in a mid-August 2012 edition of the Sunday Syracuse *Post Standard*, and a NYS Legislative Commission on Rural Resources Fall 2012 newsletter, NYSG’s e-list grew several hundred in a matter of a month’s time. The issue of *Currents* was distributed to 893 subscribers, with an open rate of 40.2% and a click-through rate of 30.7%. Following the release of *Currents*, NYS Assemblyman William Barclay’s office requested more on NYSG’s Launch Stewards, who were at public boat launch sites in Summer 2012 along Lake Ontario, Oneida Lake and the Salmon River educating boaters about how to inspect their vessels to help slow the spread of aquatic invasive species. Also NYS Senator Patty Ritchie’s office requested more information on aquatic invasive species as well as boating rules and regulations related to the U.S. /Canadian border. Extension staff from the Oswego office addressed both of these issues

Website Modification NYSG’s website underwent a redesign which is continuing into the next reporting period and focuses primarily on generating and associating dynamic, social media-friendly and visually-appealing content. In summer 2012, the Web Content Manager simplified many of the URLs that NYSG staff members are likely to use with stakeholders (see **Appendix 21**) and introduced a "Trending Topics" sidebar that was integrated throughout the website. NYSG Communications began populating the program’s Flickr account with photos that all staff can use; the National Sea Grant Office and NOAA use that same platform allowing for better exchange of images and captions.

Web Analysis According to WebTrends Analytics 10, during the reporting period, there were 51,700 visitors (up from 45,000) to the site (29,900 of whom were new to the site, up from 24,600), and an average of 125/day (up from 109/day). On average, visitors stayed on the site for 5 minutes 59 seconds per visit, up 14% from the previous reporting period.

Most popular NYSG resource sites, pages and downloads:

NYSMEA (a partner site): <http://www.seagrant.sunysb.edu/nysmea> – 19,644 visitors
I FISH NY: <http://www.seagrant.sunysb.edu/ifishny> – 11,227
Aquatic Invasive Species: <http://www.seagrant.sunysb.edu/ais> – 5,151
Grants & Policies: <http://www.seagrant.sunysb.edu/funding> – 2,155
Botulism in Lakes Erie and Ontario: <http://www.seagrant.sunysb.edu/botulism> – 2,116
Brown Tide/Other HABs: <http://www.seagrant.sunysb.edu/btide> – 1,723
Great Lakes Boating and Marine Trades: <http://www.seagrant.sunysb.edu/marina> – 1,623
Seafood Safety: <http://www.seagrant.sunysb.edu/seafood> – 1,465
Oneida Lake Education Initiative: <http://www.seagrant.sunysb.edu/oli/olei-home.htm> – 1,333
Marine Fisheries Resource Center: <http://www.seagrant.sunysb.edu/marinefish> – 982
Great Lakes Sand Dunes and Wetlands: <http://www.seagrant.sunysb.edu/lodune> – 912
Great Lakes Education: <http://www.seagrant.sunysb.edu/cyeducation> – 825
LIS Lobster: <http://www.seagrant.sunysb.edu/lobster> – 698
Great Lakes Sportfishing: <http://www.seagrant.sunysb.edu/glsportfish> – 562
NEMO: <http://www.seagrant.sunysb.edu/nemo> – 449
Hudson River: <http://www.seagrant.sunysb.edu/hriver> – 403
Hard Clam: <http://www.seagrant.sunysb.edu/hclam> – 358
Great Lakes Coastal Processes & Erosion: <http://www.seagrant.sunysb.edu/glcoastal> – 109
Great Lakes Underwater: <http://www.seagrant.sunysb.edu/glunderwater> – 75

(Note: This method counts visitors who logged onto these sites through their respective homepages by clicking through or typing in the exact URL into their browser. The numbers do not necessarily reflect users who viewed portions of these sites (e.g., a news item or specific page) without first entering via the resource site's homepage.)

There were a total of 134,000 (up from 125,000) page views or around 367/day (up from 342/day). Some of the top resource sites these pages came from include: NYSMEA, Great Lakes (GL) Marinas, Oneida Lake Education Initiative, Aquatic Invasive Species, GL Sportfishing, Seafood, Eastern Lake Ontario Dunes & Wetlands, LIS Lobster, GL Botulism, Brown Tide/HABs, Marine Fish, Hudson River Education, Marine Coastal Processes, Hard Clam, NEMO, Coastal Youth Education, GL Underwater.

In this time period there were approximately 11,000 downloads. The top downloaded files included: *Salmon and Trout of Lake Ontario Guide*, NYSMEA 2012 Conference, NYSG 2012-13 RFP Call, NYSG's Out-of-Cycle Guidelines, LI Sound 2013-14 RFP Call, NYSG Strategic Plan 2010-13 (short version), What is NYSG? fact sheet, Asian Carp fact sheet, *NY Coastlines: Winter 2012 & Fall 2012*, 2006's LIS Lobster Resource Disaster Summary.

Better integration of Research (and the Process to fund this Research) on the Web:

Content for NYSG's searchable research database (launched Summer 2011) continues to be updated monthly. Working with Content Management System provider Global/Xiacon, Communications and other staff addressed another aspect of NYSG's research—the proposal process. Through a secure web-based portal, investigators can now upload all of their documents for pre- and full-proposal calls when these calls are listed on our website. NYSG used the system in Spring 2012 for the 2013-2014 Long Island Sound research call and has continued with several Fellowship Calls the 2014-15 Omnibus RFP.

Growth in Social Media: Facebook, Twitter and YouTube Since January 2012, NYSG's Facebook page has grown from around 378 to 575 followers. Most of the Sea Grant programs (including the National Office, National Sea Grant Library and Law Center) currently have pages on Facebook. On Twitter, NYSG has increased its base from around 865 to around 1,300. The National Office (@SeaGrant) alone has around 4,400 followers (up from around 2,230 in early Jan '12), and so every item they "retweet" of ours (3-5 per week) has a large multiplier effect. A number of other Twitter followers (especially ones associated with our SUNY schools and Cornell University colleges) retweet our content regularly.

NYSG has expanded its YouTube channel to over 150 clips dating back to 2007. All videos are also embedded on our site pages, each with related links and categorized into separate theme areas. Over 70 people and organizations subscribe to our feed and some 70,000 views have been amassed among all of the clips (up from 41,600 since July 2012). We also showcase YouTube channels of some of our key partners in a "Featured" section which includes NOAA, SUNY, Cornell, Stony Brook U, SBU's SoMAS, SUNY Oswego, SUNY ESF, SUNY Buffalo. All news items added to our website and social media sites are circulated to GLIN, GLERL and the NSGO who posts items via their social media pages, as well as a regular e-newsletter, and upwards in NOAA via their "hot items" newsletter. Find a listing of news items added onto NYSG's website and social media sites in ***Appendix 22***. The extraordinary number of posts related to Hurricane Sandy made by Web Content Manager Focazio gained him a Fair Media Council nomination during this reporting period.

II. PERSONNEL

In late January 2013 James Pearce became an Administrative Assistant for both the Director and the Communications program in Stony Brook, filling the spot vacated by Leigh Hubbard who left in August 2012. Larissa Graham, our Long Island Sound Outreach Coordinator, left in January and the spot was filled by Amy Boyajian a Rutgers graduate who worked at the Cooperative Extension Water Resources Program (***See Boyajian c.v. Appendix 23***).

II.A. Current Administration Staff

The current organization of New York Sea Grant (see organizational chart, **Appendix 24**) includes centers of administration at Stony Brook University and Cornell University in Ithaca as well as extension offices in both the Marine and Great Lakes Districts. The staff roster for the program is as follows:

Administration

Stony Brook Office

James Ammerman	Director
Cornelia Schlenk	Assistant Director
Mary Kethman	Fiscal Officer
Barbara Branca	Communications Manager
Paul Focazio	Web Content Manager
Lane Smith	Research Program Coordinator
JeanAnn Johnston	Senior Administrative Assistant
James Pearce	Administrative Assistant
Sharon O'Donovan	Publications Assistant (Communications 0.53 FTE)

Ithaca Office

Katherine Bunting-Howarth	Associate Director for Extension NYSG/Assistant Director for Cornell Cooperative Extension Coastal Programs
Nancy Greenawalt	Department Business Manager
Patricia Hoyt	Administrative Assistant (0.76 FTE)

Marine District

Riverhead Office

Antoinette Clemetson	Fisheries Specialist
Karen Levasseur	Administrative Assistant (0.51 FTE)

Stony Brook Offices

Ken Gall	Seafood Specialist
Joseph (Jay) Tanski	Coastal Processes and Facilities Specialist
Amy Boyajian	Long Island Sound Outreach Coordinator
Eileen Keenan	NEMO Program Manager
Karen Palmeri	Administrative Assistant

Kingston Office

Nordica Holochuck	Hudson Estuary Specialist
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Great Lakes District

Buffalo Office

Helen Domske	Coastal Education Specialist
Jane Warfield	Administrative Assistant (0.21 FTE)

Oswego Office

David White	Recreation/Tourism Specialist
David MacNeill	Fisheries Specialist
Mary Penney	Coastal Community Development Specialist
Sharon Mullen	Administrative Assistant (0.89 FTE)

II.B. Staff Changes

Staff changes during this reporting period were:

New staff member

James Pearce Administrative Assistant

No longer with NYSG

Leigh Hubbard (1.0 FTE)
Chuck O'Neill

II.C. Staff Committee Activities

NYSG staff members are actively involved in the state, regional, and national activities listed below.

James Ammerman, Stony Brook:

Sea Grant Association
Northeast Sea Grant Consortium
Great Lakes Sea Grant Directors Network
Long Island Sound Study Management Committee
Long Island Sound Cable Fund Steering Committee
Peconic Estuary Program Management Committee
New York Marine Sciences Consortium
Cooperative Institute for Limnology and Ecosystem Research (CILER), Management Council Member
Northeastern Regional Aquaculture Center, Board Member
Great Lakes Research Consortium, Board Member

Katherine Bunting-Howarth, Ithaca:

Sea Grant Association (alternate)
Sea Grant Extension Assembly (Executive Committee at-large member)
Sea Grant Association External Relations Committee
Leader for the update of the book, "Fundamentals of a Sea Grant Extension Program"
National Sea Grant Program, Social Science Community of Practice Member
Great Lakes Sea Grant Extension Leaders Network
Mid-Atlantic Sea Grant Extension Leaders Network
Great Lakes Basin Advisory Council (*ex officio*)
New York State Water Resource Institute, Steering Committee Member
Atkinson Center for a Sustainable Future (ACSF), Faculty Fellow
CCE Director's Council

CCE IPART (Integrated Program and Research Team)
Water Resources Program Work Team (CCE)
Climate Change Program Work Team (CCE)
Doctoral Dissertation Committee (University of Delaware)

Cornelia Schlenk, Stony Brook:

Research Coordinators for Nationwide Sea Grant Network
EPA Long Island Sound Study Implementation Team
EPA Long Island Sound Study Science and Technical Advisory Committee
EPA Peconic Estuary Program Technical Advisory Committee
New York State's Shellfish Advisory Committee (Chair)
Regional Economic Development Council's Natural Assets Subcommittee
South Shore Estuary Reserve (SSER) Council
Suffolk County Great South Bay Hard Clam Work Group
Long Island Shellfish Managers

Barbara Branca, Stony Brook:

Association for Communications Excellence (ACE), member, Gold Award recipient 2011
Bay Scallop Bowl Planning Committee, promotion coordinator
EarthStock Planning Committee
Editor/ Photo Researcher for the update of "Fundamentals of a Sea Grant Extension Program"
Fair Media Council
Stony Brook University Public Relations Team

Antoinette Clemetson, Riverhead:

New York Anglers Consortium Sportfishing Education Center, Babylon
NY Sportfishing Awareness Council (Coordinator)
NE Lobster Shell Disease Research Initiative (ExComm)
LIMA PRISM (Partnership for Regional Invasive Species Management)
Atlantic States Marine Fisheries Commission Social Science Committee

Helen Domske, Buffalo:

International Association of Great Lakes Research - Outreach Committee
Great Lakes Observing System – Education/Outreach Committee
Science Teachers Association of NYS – Subject Area Representative for Environmental Science
Niagara County Community College - Animal Management Program Advisory Board
Aquarium of Niagara - Education Programs Advisory Board
Lake Erie LAMP Binational Public Forum
Niagara Frontier Science Supervisors
Science Exploration Day – Planning Committee
Great Lakes Student Summit – Planning Committee
Lower Great Lakes Botulism Committee
Great Lakes Sea Grant Network - Education Work Team
Buffalo River Remedial Action Plan - Habitat Work Group (Advisor)
National Marine Educators Association – Member

Paul Focazio, Stony Brook:

Past Chair, National Sea Grant
Communications Network Member,
Sea Grant Web Masters Network
Fair Media Council, member and 2013 Award
nominee

Ken Gall, Stony Brook:

Technical Advisor to New York Seafood Council Board of Directors
National Institute of Food Technologists
International Association for Food Protection
Executive Committee of Atlantic Fisheries Technology Conference
Steering Committee, National Seafood HACCP Alliance
Chairman, Alternative Training Committee of National Seafood HACCP Alliance
Coordinator, New York Seafood HACCP Training Team
Manager, National Seafood HACCP Alliance Internet Training Course
Manager, National Good Manufacturing Practices Internet Training course
New York State Association for Food Protection
NY Conference of Central Atlantic States Association of Food and Drug Officials
Co-Investigator for USDA Cooperative State Research, Education and Extension
Service National Food Safety Initiative Project to Develop Outreach Education for
Health Care Providers on the Benefits and Risks of Seafood Consumption
Co-Investigator for USDA Cooperative State Research, Education and Extension
Service National Food Safety Initiative Project to Conduct an Integrated Needs
Assessment and National Training Program to Enhance Seafood and Aquaculture
Product Safety

Larissa Graham, Stony Brook:

Long Island Sound Study Habitat Restoration Initiative Work Group - Member
Long Island Sound Study Stewardship Initiative Work Group - Member
Long Island Sound Study Communications Work Group - Member
Long Island Sound Study Nonpoint Source Work Group –Member
New York State Marine Educators Association - Member of Executive Board; Chair of
Website Committee
New York State Outdoor Education Association – Member of the Conference Planning
Committee

Nordica Holochuck, Kingston:

Hudson River Estuary Management Advisory Committee (HREMAC) (ex-officio),
HREMAC Hudson River Estuary Education Committee
HREMAC Hudson Estuary River Access Committee Project Advisory Committee
Sustainable Shorelines Project, Hudson River National Estuarine Research Reserve
Climate Change Network Member, Sea Grant North Atlantic Regional Team
Steering Committee Education Committee (Chair) New York State Marine Education
Association

Eileen Keenan, Stony Brook:

Long Island Water Quality Coordinating Committee
Peconic Estuary Program Stormwater Workgroup, Co-Chair
Peconic Inter-Municipal Initiative Committee
Long Island Annual Green Infrastructure Conference Committee
Long Island Sound Study Nonpoint Source Workgroup

Mary Kethman, Stony Brook:

Member Stony Brook University's Quality Control Board
NYSG Thesis Completion Award Committee
Member, Sea Grant Fiscal Officers Network

David MacNeill, Oswego:

National Sea Grant Office Healthy Coastal Ecosystem Focus Team Member
Great Lakes Fishery Commission, Lake Ontario Committee Advisor
Great Lakes Fishery Commission, Lower Great Lakes Committee Advisor
Great Lakes Fishery Commission, LEPMAG Advisor to Lake Erie Committee
SUNY ESF Syracuse, Adjunct Faculty
Cornell Cooperative Extension Climate Change Program Work Team Member
Oswego County Department of Tourism, advisor

Mary Penney, Oswego:

The Eastern Lake Ontario Dune Coalition – NYSG Representative and Education Committee Chair
Sea Grant Sustainable Coastal Community Development (SCCD) Network - Executive Committee Officer
Great Lakes Sea Grant Network Climate Change Team – NYSG Representative
St Lawrence-Lake Ontario (SLELO) Partnership for Regional Invasive Species Management (PRISM) – NYSG representative and Education Committee Member

Lane Smith, Stony Brook:

NYSG Thesis Completion Award Committee
Research Coordinators for Nationwide Sea Grant Network

Jay Tanski, Stony Brook:

North East Shore and Beach Preservation Association (Board)
SSER Dredged Material Management Advisory Committee
American Society of Civil Engineers National Coastal Zone Management Committee
ASCE CZM Living Shorelines Subcommittee
Atlantic Coast of New York Erosion Monitoring Program Study Team (State)
Environmental Technical Management Group (Corps of Engineers)
Coastal Technical Management Group (Corps of Engineers)
Non-Structural Technical Management Group (Corps of Engineers)
New England Marina Outreach Work Group
Hudson River Soft Shoreline Steering Committee
Town of Brookhaven Mount Sinai Harbor Taskforce
Army Corps of Engineers Regional Sediment Management Project Delivery Team

Army Corps of Engineers Regional Sediment Management Stakeholders Workgroup
Army Corps of Engineers Dredging Windows Project Team (Leader)

David White, Oswego

Empire State Marine Trade Association (Ex-Officio)

Great Lakes Leaders Great Lakes Research Consortium, Associate Director

Great Lakes Sea Grant Network Program Leaders

Great Lakes Seaway Trail

National Scenic Byway Foundation

NYS Underwater Blueway Trail Steering Committee

Oswego County Tourism Advisory Council

The Eastern Lake Ontario Dune Coalition

II.D. Staff Honors and Awards

NYSG staff members are received the following awards and honors for February 1, 2012- January 31, 2013.

Helen Domske, Recipient of the Great Lakes Sea Grant Network Outstanding Outreach Award for work on the “Undo the Chemical Brew” campaign.

Ken Gall, Recipient of the Mid-Atlantic Sea Grant Network’s Excellence in Outreach Award for his work on the seafoodhealthfacts.org website and regional nominee for the National Superior Outreach Program Award

Larissa Graham, Recipient of New York Marine Education Association’s Kinghan Service Award

Nordica Holochuck, Recipient of the New York Marine Educators Association’s Science Council of NYC (SCONYC) Jerry Resnick Presidential Memorial Award.

David MacNeill, Recipient of the Great Lakes Sea Grant Network Superior Outreach Award for his work on conducting a trawl workshop.

II.E. Program Advisory Council Changes

Terms of membership are three years, with reappointment usually limited to a second term. Program Advisory Council membership will number about 20-25 to maintain its function as an effective working group. See **Appendix 25** for complete membership as of April 2013.

Existing Member Reappointments

N/A

New Member Appointments
Richard Balla (appointed April 2013)

Member Term Completed
N/A

Member Resignations
Mario DelVicario

II.F. Board of Governors Changes

Members of the Board are appointed for a term of four years. If they resign or regularly fail to attend meetings, the Sea Grant director may request replacement. As needed, the Board Chair shall request written designation of reappointments or replacements from the Chancellor or President, as appropriate, or from both in the case of *ex officio* New York State agency members. See **page V** for complete membership as of April 2013.

Existing Member Reappointments
Dr. Daniel Decker, Dr. Helene Dillard, Dr. Frank DiSalvo, Dr. Michael Hoffmann, Dr. William Tully, Mr. Michael White

New Member Appointments Dr. Max Pfeffer (See **Appendix 26** for c.v.)

Member Term Completed
Dr. Ronald Seeber

Member Resignations
N/A

III. FINANCIAL SUPPORT

(Budget efforts for the period 2/1/2012 to 1/31/2013)

Work to maintain and increase NYSG's budget included activities at the federal and state level during this time period. Details about NYSG's state and federal support are presented in the *Fiscal Tables* section of this briefing book. A list of projects, workshops, and other expenditures for which Program Development dollars were used also appears there.

A. State Support

Core State

Sea Grant received a state core allocation for the period 7/1/12 to 6/30/13 in the amount of \$411,800. This allocation is the same as the previous fiscal year.

In February 2013, NYSG learned that the New York State Budget included an estimated 2013-2014 allocation of level funding (\$411,800) for NYSG. NYSG expects that this total will be unchanged in the budget approved by the legislature on March 30. On February 25, 2015, the NYSG Management Team (James Ammerman, Kathy Bunting-Howarth, and Cornelia Schlenk) gave a presentation to the SUNY R&D Catalyst Committee to demonstrate the need for New York State funding as a SUNY-Wide Institute. This presentation was very well received by the Committee. (See Catalyst Committee Presentation in Action/Discussion Item #1.)

Additional State

No additional state funds were received by NYSG for the fiscal year 2012-13.

NYSG Extension received various grants from state sources, as well, which are described in the Extension Highlights section and listed on Table 9 in the Fiscal Tables section.

Activities to Maintain/Increase State Support

The Director and Associate Director travelled to Albany in the spring of 2012 to meet with SUNY officials (Provost, Budget Director, Legislative Relations Director, and others), State agency personnel (DEC, DOS, ESD, and others), local Board members, and selected legislators and their staffs. NYSG is continuing to broaden its base of support within the legislature in preparation for future improvements in the State and SUNY budget. Additional periodic contacts with New York State legislators were made at events or meetings in their home districts.

While not directly related to State financial support, the Director presented invited testimony at two New York Legislative hearings in January of 2013 related to impacts and rebuilding after Hurricane Sandy. The first was the Senate Committee on Investigations and Government Operations (Senator Marcellino, Chair), and the second was the Assembly Committee on Environmental Conservation (Assemblyman Sweeney, Chair). NYSG's coastal processes specialist, Jay Tanski, also participated in the hearings.

B. Federal Support

Core Federal

To date 50% of NYSG's omnibus award (\$1,223,600) for 2013 was received on 1/7/13 with a February 1 effective date. The balance is expected to be received once a Federal budget is passed. NYSG's total core federal award for 2013 is expected to be \$2,239,000 as the omnibus base, plus \$160,000 for merit and bonus. This total will likely be reduced by a few percent due to the sequester, as noted in the letter from Dr. Leon Cammen of the National Sea Grant Office, but remains unclear (Action/Discussion Item #1). In addition, a \$50,000 allocation is expected for another year of SGE's continuing Coastal

Communities Development project. These funds (total \$2,449,000) are intended to support activities for 2013, as follows:

Research	\$732,104	Administration**	\$393,231
Extension (core)	\$791,076	Communications	\$132,132
Education research scholars	\$248,657	Core Program Development	\$ 71,454
Extension (Coastal Communities)	\$ 50,000	Great Lakes Commission/SG Fellow	\$ 1,800
NE Regional Social Science Projects	\$ 28,546		

** Reprogrammed funds will be used to partially support administrative activities.

Additional Federal

NYSG received funds from the USEPA in the amount of \$212,500 in October 2012 to support a third research call for proposals from the EPA Long Island Sound Study “a. *Research to Accomplish the Long Island Sound Study’s Goals*; b. *Support for Long Island Sound Science and Technical Advisory Committee (2011 NYSG share)* project. Additional funds of \$253,000 were received in September 2011 making a total of \$465,500 available for this third round of Long Island Sound research projects.

NYSG received funds of \$20,000 from the National Sea Grant Office for Communications project C/O-3 “Revision of *Fundamentals of a Sea Grant Extension Program* guide.”

NYSG received funds of \$60,000 in response to its call for climate initiative proposals. This allowed for the funding of \$60,000 for project A/EEP-40 “*Preparing Coastal Constituents and Communities for Climate Change*.”

With an effective date of February 1, 2013, NYSG received funds for Knauss Fellow, Daniel J. Sousa (\$52,500). Funding for a second Knauss Fellow, Zachary Schulman, is pending execution of an interagency agreement between the National Sea Grant Office and the US Coast Guard. This award will also be in the amount of \$52,500.

Activities to Maintain/Increase Federal Support

The NYSG Director and Associate Director met with the staffs of about ten New York US House members and the two Senate members in Washington in February of 2012 to discuss NYSG accomplishments and impacts and future federal budget support. Additional periodic contacts with members of the New York State legislative delegation were made at events or meetings in their home districts.

C. Miscellaneous Sources

The Stony Brook University Provost continued to support NYSG by annually covering the impact, over the period since FY 1999-2000, of mandated state salary increases for

three UUP employees and the Director. The 2012-13 Provost support for NYSG is \$124,685.

Various additional grants were received by Sea Grant Extension from miscellaneous sources, as detailed in the Extension Highlights section.

TABLE 1

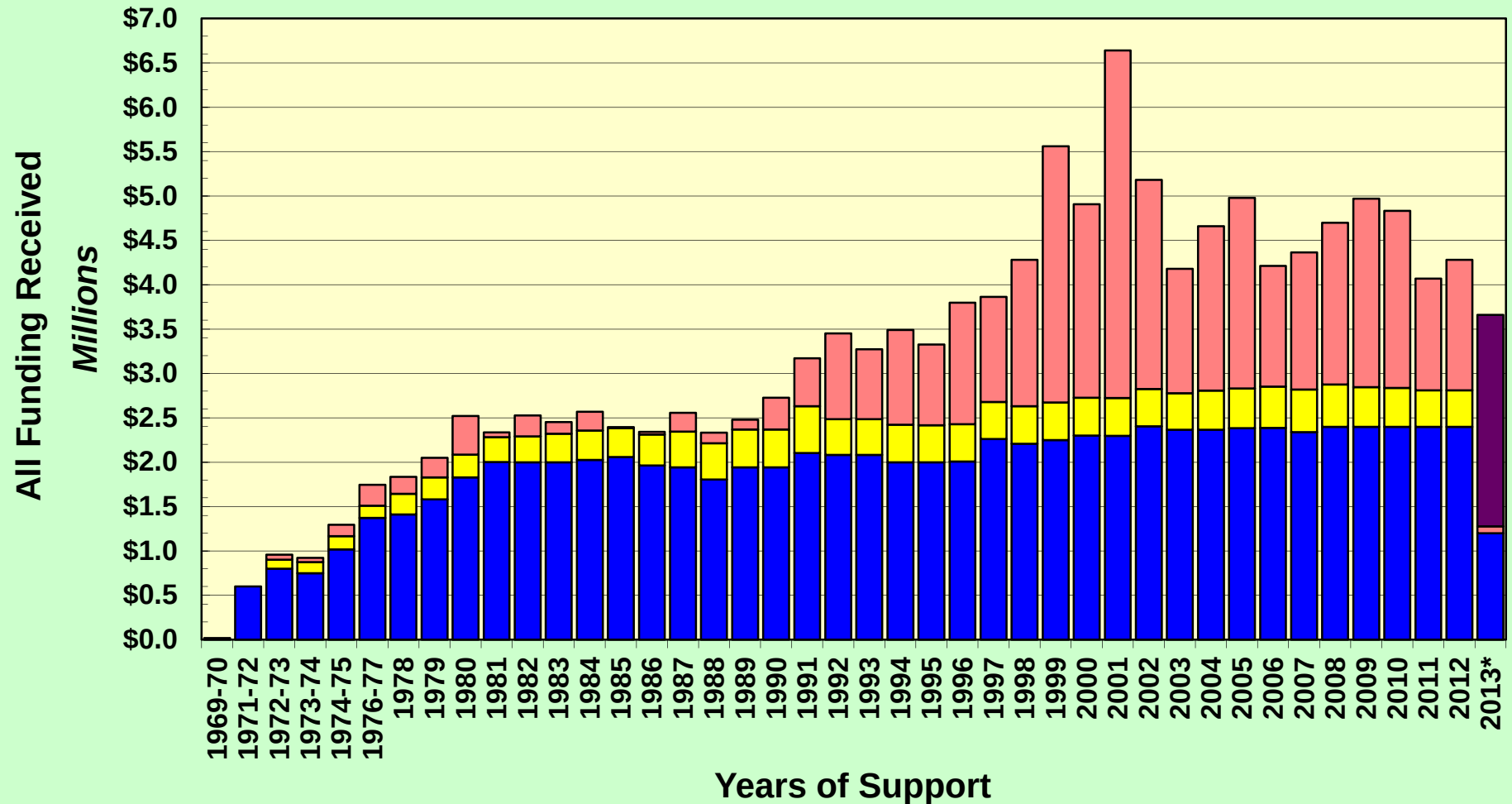
Funding of New York Sea Grant

YEAR	Federal Core Award	State Core Appropriation	TOTAL Core Funding	Additional Federal, State and Other Funds	TOTAL NYSG Funding
1969-70	\$18,700		\$18,700		\$18,700
1971-72	\$600,000		\$600,000		\$600,000
1972-73	\$800,000	\$100,000	\$900,000	\$57,560	\$957,560
1973-74	\$750,000	\$125,000	\$875,000	\$48,100	\$923,100
1974-75	\$1,016,300	\$150,000	\$1,166,300	\$126,900	\$1,293,200
1976-77	\$1,373,500	\$134,500	\$1,508,000	\$236,700	\$1,744,700
1978	\$1,410,000	\$234,800	\$1,644,800	\$188,670	\$1,833,470
1979	\$1,580,000	\$248,000	\$1,828,000	\$222,500	\$2,050,500
1980	\$1,830,000	\$255,000	\$2,085,000	\$436,046	\$2,521,046
1981	\$2,001,000	\$280,000	\$2,281,000	\$55,805	\$2,336,805
1982	\$2,000,000	\$290,000	\$2,290,000	\$236,000	\$2,526,000
1983	\$2,000,000	\$320,900	\$2,320,900	\$129,700	\$2,450,600
1984	\$2,025,100	\$330,900	\$2,356,000	\$211,900	\$2,567,900
1985	\$2,058,000	\$325,900	\$2,383,900	\$10,000	\$2,393,900
1986	\$1,962,200	\$348,300	\$2,310,500	\$30,000	\$2,340,500
1987	\$1,942,000	\$403,300	\$2,345,300	\$210,595	\$2,555,895
1988	\$1,806,060	\$407,000	\$2,213,060	\$118,886	\$2,331,946
1989	\$1,942,000	\$426,400	\$2,368,400	\$109,000	\$2,477,400
1990	\$1,942,000	\$427,400	\$2,369,400	\$356,123	\$2,725,523
1991	\$2,103,833	\$527,000	\$2,630,833	\$540,263	\$3,171,096
1992	\$2,083,000	\$401,500	\$2,484,500	\$967,578	\$3,452,078
1993	\$2,083,000	\$402,500	\$2,485,500	\$785,546	\$3,271,046
1994	\$2,000,000	\$423,200	\$2,423,200	\$1,065,520	\$3,488,720
1995	\$2,000,000	\$415,000	\$2,415,000	\$910,493	\$3,325,493
1996	\$2,006,041	\$421,400	\$2,427,441	\$1,371,309	\$3,798,750
1997	\$2,260,000	\$420,000	\$2,680,000	\$1,182,959	\$3,862,959
1998	\$2,208,000	\$423,600	\$2,631,600	\$1,649,216	\$4,280,816
1999	\$2,250,000	\$423,500	\$2,673,500	\$2,885,616	\$5,559,116
2000	\$2,300,479	\$425,000	\$2,725,479	\$2,180,738	\$4,906,217
2001	\$2,298,000	\$425,000	\$2,723,000	\$3,916,803	\$6,639,803
2002	\$2,405,000	\$420,900	\$2,825,900	\$2,356,925	\$5,182,825
2003	\$2,364,000	\$412,500	\$2,776,500	\$1,402,851	\$4,179,351
2004	\$2,364,000	\$443,400	\$2,807,400	\$1,851,922	\$4,659,322
2005	\$2,384,700	\$447,000	\$2,831,700	\$2,146,061	\$4,977,761
2006	\$2,385,000	\$467,000	\$2,852,000	\$1,359,061	\$4,211,061
2007	\$2,337,481	\$480,600	\$2,818,081	\$1,546,357	\$4,364,438
2008	\$2,399,000	\$477,700	\$2,876,700	\$1,821,378	\$4,698,078
2009	\$2,399,000	\$447,600	\$2,846,600	\$2,124,370	\$4,970,970
2010	\$2,399,000	\$437,800	\$2,836,800	\$1,996,825	\$4,833,625
2011	\$2,399,000	\$411,800	\$2,810,800	\$1,258,812	\$4,069,612
2012	\$2,399,000	\$411,800	\$2,810,800	\$1,468,562	\$4,279,362
2013*	\$1,198,600	\$0	\$1,198,600	\$77,500	\$1,276,100

* 2013 Funding is year to date as of 3/31/13. Expected additional funds total \$2,385,400 and include: core state support of \$411,800; balance of 2013 Omnibus award \$1,223,600 and grants directly to Extension of approximately \$750,000.

National Sea Grant core and additional funding opportunities, making NYSG's total financial impact considerably larger each year. See Table 2 for a description of last year's proposed sources of these matching funds.

New York Sea Grant Funding Since Inception



■ Federal Core Award

■ Additional Federal, State and Other Funds

■ State Core Appropriation

■ Anticipated Funds (See * in Table 1)

* 2013 Funding is year to date as of 3/31/13. Expected additional funds total \$2,385,400 and include: core state support of \$411,800; \$1,223,600 balance of 2013 federal award and grants directly to Extension of approximately \$750,000.

TABLE 2

Sources of 2012 Proposed Matching Funds ***(as proposed in Omnibus submission)***

UNIVERSITY MATCH

Stony Brook University	\$717,745
Cornell University	\$319,636
SUNY ESF	\$74,065
	\$1,111,446

NON-UNIVERSITY MATCH

State of New York	\$204,346
Cornell Cooperative Extension, Suffolk County	\$47,948
Cary Institute of Ecosystem Studies	\$53,309
	\$305,603
	\$1,417,049

Note: A portion of the funds listed above are derived from NYSG's core state appropriation (see Table 1)

TABLE 3
Actual Distribution to Program Activities
2012 Funds

	A		B		C		D	
	CORE FEDERAL AWARD		CORE STATE		ADDITIONAL FUNDING		TOTAL FUNDS	
Balance Forward	\$1,093,594		\$10,291		\$551,556		\$1,655,441	
Close-out this year	\$5,938		\$0		\$0		\$5,938	
2012	\$2,399,000		12/13 \$411,800		2012 \$1,468,562		\$4,279,362	
TOTAL	\$3,498,532		\$422,091		\$2,020,118		\$5,940,741	
RESEARCH	\$1,184,255	33.85%	\$0	0.00%	\$215,876	10.69%	\$1,400,131	23.57%
EDUCATION								
Scholars	\$302,377		\$0		\$82,680		\$385,057	
Knauss Fellowship	\$0		\$0		\$49,000		\$49,000	
NMFS/SG Fellowship	\$0		\$0		0		\$0	
GL Commission Fellow	\$1,800		\$0		\$0		\$1,800	
LIS TAC Fellow	\$0		\$0		\$0		\$0	
HRNERR Fellow	\$0		\$0		\$0		\$0	
Education Total	<u>\$304,177</u>	8.69%	<u>\$0</u>	0.00%	<u>\$131,680</u>	6.52%	<u>\$435,857</u>	7.34%
EXTENSION	\$1,026,076	29.33%	\$145,894	34.56%	\$1,071,453	53.04%	\$2,243,423	37.76%
COMMUNICATIONS	\$131,781	3.77%	\$91,408	21.66%	\$70,808	3.51%	\$293,997	4.95%
PROGRAM MANAGEMENT	\$385,949	11.03%	\$172,500	40.87%	\$93,047	4.61%	\$651,496	10.97%
PROGRAM DEVELOPMENT	<u>\$33,407</u>	0.95%	<u>\$0</u>	0.00%	<u>-\$28,246</u>	-1.40%	<u>\$5,161</u>	0.09%
TOTAL ALLOCATED	\$3,065,645	87.63%	\$409,802	97.09%	\$1,554,618	76.96%	\$5,030,065	84.67%
PENDING COMMITTED	\$223,845	6.40%	\$0	0.00%	\$465,500	23.04%	\$689,345	11.60%
UNALLOCATED	\$209,032	5.97%	\$12,289	2.91%	\$0	0.00%	\$221,321	3.73%
TOTAL FUNDS	\$3,498,522	100.00%	\$422,091	100.00%	\$2,020,118	100.00%	\$5,940,731	100.00%
Next Year Beginning Balance	\$432,877		\$12,289		\$465,500		\$910,666	

TABLE 4
Distribution to Program Activities to Date
2013 Funds

	A		B		C		D	
	CORE FEDERAL AWARD		CORE STATE		ADDITIONAL FUNDING		TOTAL FUNDS	
Balance Forward	\$432,877		\$12,289		\$465,500		\$910,666	
Close-out this year	\$0		\$0		\$0		\$0	
2013	\$1,200,400		13/14	\$0	2013	\$77,500	\$1,277,900	
TOTAL	\$1,633,277		\$12,289		\$543,000		\$2,188,566	
RESEARCH	\$323,580	19.81%	\$0	0.00%	\$198,890	36.63%	\$522,470	23.87%
EDUCATION								
Scholars	\$227,657		\$0		\$0		\$227,657	
Knauss Fellowship	\$0		\$0		\$52,500		\$52,500	
NMFS/SG Fellowship	\$0		\$0		0		\$0	
GL Commission Fellow	\$1,800		\$0		\$0		\$1,800	
LIS TAC Fellow	\$0		\$0		\$0		\$0	
HRNERR Fellow	\$0		\$0		\$0		\$0	
Education Total	<u>\$229,457</u>	14.05%	<u>\$0</u>	0.00%	<u>\$52,500</u>	9.67%	<u>\$281,957</u>	12.88%
EXTENSION	\$395,538	24.22%	\$10,000	81.37%	\$25,000	4.60%	\$430,538	19.67%
COMMUNICATIONS	\$66,066	4.04%	\$0	0.00%	\$0	0.00%	\$66,066	3.02%
PROGRAM MANAGEMENT	\$98,309	6.02%	\$0	0.00%	\$53,226	9.80%	\$151,535	6.92%
PROGRAM DEVELOPMENT	<u>\$33,870</u>	2.07%	<u>\$0</u>	0.00%	<u>\$0</u>	0.00%	<u>\$33,870</u>	1.55%
TOTAL ALLOCATED	\$1,146,820	70.22%	\$10,000	81.37%	\$329,616	60.70%	\$1,486,436	67.92%
PENDING COMMITTED	\$273,902	16.77%	\$2,289	18.63%	\$213,384	39.30%	\$489,575	22.37%
UNALLOCATED	\$212,555	13.01%	\$0	0.00%	\$0	0.00%	\$212,555	9.71%
TOTAL FUNDS	\$1,633,277	100.00%	\$12,289	100.00%	\$543,000	100.00%	\$2,188,566	100.00%
Next Year Beginning Balance	\$486,457		\$2,289		\$213,384		\$702,130	

TABLE 5

Core Funding of the NYSG Extension Program

State Award Date	Federal Award Date	State Core	Federal Core*	**Other (non-base)	Total Core	33% Extension	Paid from Federal	Paid from State	Paid from Other	Total Paid	Difference in actual \$ provided	Value of MI funds for Extension (as adjusted)	Total Support, adjusted for MI value ⁽¹⁾
1996-1997	1997	\$421,400	\$2,260,000		\$2,681,400	\$884,862	\$590,462	\$228,931	\$65,469	\$884,862	\$0		n/a
1997-1998	1998	\$420,000	\$2,208,000		\$2,628,000	\$867,240	\$338,083	\$229,157	\$0	\$567,240	-\$300,000		n/a
1998-1999	1999	\$423,600	\$2,208,000	\$500,000	\$3,131,600	\$1,033,428	\$667,546	\$165,882	\$500,000	\$1,333,428	\$300,000		n/a
1999-2000	2000	\$423,500	\$2,300,479	\$500,000	\$3,223,979	\$1,047,255	\$327,255	\$170,000	\$500,000	\$997,255	-\$50,000	\$169,217	\$1,166,472
2000-2001	2001	\$425,000	\$2,298,000	\$500,000	\$3,223,000	\$1,063,590	\$337,568	\$140,250	\$480,000	\$957,818	-\$105,772	\$122,588	\$1,080,406 ⁽²⁾
2001-2002	2002	\$425,000	\$2,403,200	\$36,000	\$2,864,200	\$945,186	\$774,046	\$160,000	\$36,000	\$970,046	\$24,860	\$9,237	\$979,283
2002-2003	2003	\$420,900	\$2,362,200	\$241,375	\$3,024,475	\$998,077	\$559,816	\$147,466	\$241,375	\$948,657	-\$49,420	\$69,850	\$1,018,507
2003-2004	2004	\$412,500	\$2,362,200	\$179,000	\$2,953,700	\$974,721	\$608,567	\$151,495	\$179,000	\$939,062	-\$35,659	\$53,399	\$992,461
2004-2005	2005	\$443,400	\$2,382,900	\$180,000	\$3,006,300	\$992,079	\$602,937	\$163,600	\$180,000	\$946,537	-\$45,542	\$57,484	\$1,004,021 ⁽³⁾
2005-2006	2006	\$447,000	\$2,385,000	\$175,000	\$3,007,000	\$992,310	\$625,070	\$158,381	\$175,000	\$958,451	-\$33,859	\$59,970	\$1,018,421
2006-2007	2007	\$467,000	\$2,409,000	\$190,000	\$3,066,000	\$1,011,780	\$585,593	\$192,718	\$190,000	\$968,311	-\$43,469	\$63,365	\$1,031,676 ^{***}
2007-2008	2008	\$480,600	\$2,409,000	\$310,000	\$3,199,600	\$1,055,868	\$447,421	\$225,663	\$310,000	\$983,084	-\$72,784	\$106,382	\$1,089,465 ^{***}
2008-2009	2009	\$477,700	\$2,397,200	\$258,000	\$3,132,900	\$1,033,857	\$521,808	\$196,155	\$258,000	\$975,963	-\$57,894	\$85,419	\$1,061,383
2009-2010	2010	\$447,600	\$2,397,200	\$188,000	\$3,032,800	\$1,000,824	\$587,180	\$184,104	\$188,000	\$959,284	-\$41,540	\$61,518	\$1,020,801
2010-2011	2011	\$437,800	\$2,397,200	\$0	\$2,835,000	\$935,550	\$759,376	\$176,174	\$0	\$935,550	\$0	\$0	\$935,550
2011-12	2012	\$411,800	\$2,397,200	\$0	\$2,809,000	\$926,970	\$791,076	\$145,894	\$235,000	\$1,171,970	\$245,000	\$0	\$936,970
2012-13	2013****	\$411,800	\$1,198,600	\$0	\$1,610,400	\$531,432	\$395,538	\$145,894	\$0	\$541,432	\$10,000	\$0	\$541,432

* Federal Core adjusted for funds deducted from award prior to receipt (e.g., Great Lakes Commission Fellowship & Coastal Communities Development 100% to Extension)

** these funds are not considered "base funding", however were used in determining Extension's 33%

***The amount shown uses the amount requested for calculating Extension funding. In 2007 \$2,337,481 was received and in 2008 \$2,399,000 was received.

**** Only 50% of the 2013 Federal Omnibus award has been received to date.

(1): In recognition of the value of state funds when used for salaries by Extension (approx. \$1.7 value for every state \$1), the maximum amount of state-source funds are provided to Extension each year. A formula is applied to these extra state funds to determine their equivalent value, an exchange of state and federal funds is agreed upon, and the savings is shared between the Institute and Extension.

(2): \$15,840 additional federal due to Extension for 2001 was added to 2002 federal award.

(3): \$6,831 additional federal due to Extension for 2005 (merit increase from NSGO) was added to 2006 federal award.

TABLE 6

Actual Distribution of Funds by Location 2012 Funds

	ALL ACTIVITIES 2012		RESEARCH and EDUCATION ONLY* 2012	
	FUNDS	% OF TOTAL	FUNDS	% OF TOTAL
SUNY				
Stony Brook University	\$2,008,547	39.93%	\$1,029,637	56.01%
SUNY ESF	\$110,602	2.20%	\$110,602	6.02%
University of Buffalo	\$47,409	0.94%	\$47,409	2.58%
TOTAL SUNY	\$2,166,558	43.07%	\$1,187,648	64.61%
Cornell University	\$2,613,984	51.97%	\$370,561	20.16%
Fordham University	\$14,906	0.30%	\$14,906	0.81%
Cary Institute for Ecosystem Studies	\$82,901	1.65%	\$82,901	4.51%
CCE Suffolk County	\$149,926	2.98%	\$149,926	8.16%
NOAA GLERL(direct Funded by NSGO)	\$1,800	0.04%	\$1,800	0.10%
Clark University			\$7,601	0.41%
University of NH			\$7,601	0.41%
Woods Hole Oceanographic Inst			\$7,602	0.41%
UMASS Boston			\$7,602	0.41%
TOTAL NON-SUNY	\$2,863,517	56.93%	\$650,500	35.39%
GRAND TOTAL	\$5,030,075	100.00%	\$1,838,148	100.00%

* Includes Sea Grant Scholars affiliated with research projects, and other educational fellowships

TABLE 7

Sea Grant Scholar and Fellow Awards Distribution by Location

	2012 FUNDS	Number supported	2013 FUNDS	Number supported
SCHOLARS				
Stony Brook University (SBU)	\$302,063	12	\$133,500	5
Cornell University	\$45,425	2	\$67,957	2
University of Buffalo	\$26,000	1	\$26,200	1
TOTAL SCHOLARS	\$373,488	15	\$227,657	8
FELLOWSHIPS				
Columbia University				
Daniel Sousa 2013 Knauss Fellow			\$52,500	1
Pace University Law School				
Zachary N. Schulman 2013 Knauss Fellow	\$49,000	1	\$52,500	1
NOAA GLERL (direct funded by NSGO)				
Great Lakes Commission Fellow	\$1,800	1	\$1,800	1
TOTAL FELLOWS	\$50,800	2	\$106,800	3

TABLE 8**Research and Education Funds distributed to campuses, including scholars and fellows:**

Campus	2006		2007		2008		2009		2010		2011		2012	
	Dollars	% of Total	Dollars	% of Total	Dollars	% of Total	Dollars	% of Total	Dollars	% of Total	Dollars	% of Total	Dollars	% of Total
Stony Brook University	\$752,780	56.65%	\$384,548	42.40%	\$516,092	46.94%	\$888,468	58.77%	\$927,020	63.55%	\$667,043	78.09%	\$1,029,637	56.01%
SUNY at Buffalo and SUC Buffalo		0.00%	\$103,168	11.38%	\$105,893	9.63%	\$43,500	2.88%	\$41,356	2.83%	\$0	0.00%	\$47,409	2.58%
SUNY ESF	\$224,503	16.90%	\$74,534	8.22%	\$93,766	8.53%	\$90,130	5.96%	\$56,568	3.88%	\$0	0.00%	\$110,602	6.02%
SUNY Purchase	\$69,593	5.24%												
CUNY College of Staten Island	\$88,660	6.67%	\$0	0.00%										
CUNY Hunter			\$17,140	1.89%	\$18,661	1.70%								
Columbia University		0.00%		0.00%			\$43,500	2.88%		0.00%		0.00%		
Cornell University	\$147,350	11.09%	\$217,061	23.94%	\$247,000	22.47%	\$288,644	19.09%	\$277,192	19.00%	\$100,134	11.72%	\$370,561	20.16%
Clarkson University							\$53,655	3.55%	\$54,492	3.74%	\$0	0.00%		
Long Island University		0.00%		0.00%										
Health Research Inc.	\$0	0.00%	\$0	0.00%	\$6,759	0.61%								
Old Dominion University														
National Research Council of Canada														
NYU School of Medicine			\$108,600	11.98%	\$109,400	9.95%	\$102,197	6.76%	\$100,397	6.88%	\$85,250	9.98%		
NOAA GLERL (direct funded by NSGO)	\$1,800	0.14%	\$1,800	0.20%	\$1,800	0.16%	\$1,800	0.12%	\$1,800	0.12%	\$1,800	0.21%	\$1,800	0.10%
Fordham University													\$14,906	0.81%
Cary Inst for Ecosystem Studies													\$82,901	4.51%
CCE Suffolk County													\$149,926	8.16%
Hydroqual, Inc.	\$44,100	3.32%	\$0	0.00%										
Clark Univeristy													\$7,601	0.41%
University of New Hampshire													\$7,601	0.41%
Woods Hole Oceanographic Inst													\$7,602	0.41%
University of Mass, Boston													\$7,602	0.41%
	\$1,328,786	100.00%	\$906,851	100.00%	\$1,099,371	100.00%	\$1,511,894	100.00%	\$1,458,825	100.00%	\$854,227	100.00%	\$1,838,148	100.00%

TABLE 9
EXTENSION PROGRAM FUNDS
Received 2012

From the National Sea Grant College Program

Received 2012

1. "Coastal Communities Development Program." 2011-2012. \$50,000. Principal: David White.
2. "Preparing Coastal Constituents and Communities for Climate Change." \$60,000. Principal: Katherine Bunting-Howarth.

From Miscellaneous Sources

Received 2012

1. Cornell Cooperative Extension. "Spanish Language Version of Seafood HACCP Internet Training Course." 2012-2013. \$24,623. Principal: Ken Gall
2. Finger Lakes – Lake Ontario Watershed Protection Alliance. "Lake Ontario Visioning Workshops." \$5,000. 2012. Principal: Mary Penney
3. Great Lakes Seaway Trail. "Organizational Capacity Study: \$3,500. 2012. Principal: David White
4. Great Lakes Seaway Trail. "Education, Interpretation and Planning Development." \$5,000. 2012. Principal: David White
5. Illinois-Indiana Sea Grant. "Bringing Great Lakes Science to the Classroom via the Lake Guardian and other Dynamic Professional Development Experiences to Strengthen the Educator/Scientist Community of Practice: an Initiative of EPA-GLNPO and the Great Lakes Sea Grant Network. \$55,000. 2010-2015. Principal: Helen Domske
6. Illinois-Indiana Sea Grant. "Increasing Citizen Involvement and Improving Great Lakes Literacy through Training, Mentoring, Community-Building and Place-Based Stewardship." 2012-2015. \$99,999. Principal: Helen Domske
7. Illinois-Indiana Sea Grant. "GLSGN OIT Initiative – Extending the Risk Assessment Project." 2012-2013. \$18,820. Principal: Helen Domske
8. New England Interstate Water Pollution Control Commission. "NYSG Long Island MS4 Phase II Planning Program: \$111,936. 2011-2013. Principal: Eileen Keenan

9. New England Interstate Water Pollution Control Commission. "New York-New Jersey Harbor Estuary Education and Outreach." \$800. 2012 Principal: Nordica Holochuck
10. New York State Department of Environmental Conservation. "Development of New York State Invasive Species Clearinghouse (NYSISC) at the National Aquatic Species Clearinghouse (NANSC)." 2012. \$5,919. Principal: Charles R. O'Neill
11. New York State Department of Environmental Conservation. "Cornell Cooperative Extension Invasive Species Program." \$12,500. 2012-2013. Principal: Chuck O'Neill
12. New York State Seafood Council. "2011-12 Collaborative Seafood Marketing." 2011-2012. \$8,783. Principal: Ken Gall
13. NYS Water Resources Institute. "Hudson River Project." \$31,725. 2012-2013. Principal: Nordica Holochuck
14. Ohio State University. "2011 Great Lakes Charter Captains Survey." 2012-2013. \$10,621. Principal: David MacNeill
15. Oswego County Soil and Water Conservation District. "Eastern Lake Ontario Coastal Watershed AIS Outreach Stewards." 2012-2014. \$79,981. Principal: Mary Penney
16. SUNY Research Foundation, Stony Brook. "Establishing the Sources of Phosphorus Promoting Toxic Cyanobacteria Blooms in the U.S. Great Lakes with Gene Expression Assays – Outreach Component. \$28,501. 9/1/11-8/31/12. Principal: David MacNeill
17. SUNY Research Foundation, University of Buffalo. "Extension Services." 2012. \$1,250. Principal: Helen Domske
18. University of Illinois. "Great Lakes "F-EX (Field Experiences) for Watershed Educators: Providing Meaningful Teacher Experiences to Promote NOAA's Great Lakes Education Discoveries for Students." 2012-2013. \$43,750. Principal: Helen Domske
19. University of Minnesota. "Extending a Regional Public Outreach Campaign on AIS." 2012-2014. \$54,056. Principal: Helen Domske
20. US Environmental Protection Agency. "Long Island Sound Study New York Public Outreach Program." 2012-2013. \$137,794. Principal: Amy Boyajian
21. US Environmental Protection Agency. "Using Behavior Change Tools for Lawn Care Practices." 2012-2013. \$35,000. Principal: Amy Boyajian

TABLE 10
PROGRAM DEVELOPMENT FUNDS COMMITTED

February 1, 2012 to January 31, 2013

(**note:** even though listed under one component of NYSG, most activities were pertinent to some combination of research, extension, education, and communications interests)

<u>Research</u>	<u>Date Paid</u>	
\$3,150	2/21/12	Sponsorship of IAGLR 55 th Conference on Great Lakes Research, Cornwall, ON 5/13-17/2012
\$1,260	2/2/12	Sponsorship of 2012 Lobster Science Symposium at University of Maine, Fall 2012.
\$630	8/30/12	Sponsorship of Northeast Aquaculture Conference & Exposition, Milford Aquaculture Seminar, International Conference on Shellfish Restoration, Groton, CT 12/12-15/12
\$630	9/12/12	Support for NY Marine Sciences Consortium Fifth Annual Research Symposium, Wang Center, Stony Brook University, 9/22/12
\$9,981	3/1/12	Addendum to research project PI Diane M. Kuehn, SUNY ESF, R/FHD-13, " <i>GIS Analysis of resident angler fishing characteristics and demographics.</i> "
\$14,906	5/1/12	Out-Of-Cycle research project, PI Mark L. Botton, Fordham University, R/CMB-39, " <i>Effects of a beach nourishment project on horseshoe crab (<i>Limulus polyphemus</i>) spawning activity, egg deposition, and juvenile habitat use.</i> "
\$18,844	11/19/12	Out-Of-Cycle research project, PI Charles Flagg, Stony Brook University, R/CCP-19, " <i>Observations for evaluating the breach at Old Inlet caused by super-storm Sandy</i> "

<u>Education, Extension & Communications.</u>	<u>Date Paid</u>	
Extension \$1,413	8/21/12	Seafood Throwdown held during 2 nd Annual Celebrate Grown on Long Island in Yaphank, NY 8/17/12.
\$945	4/11/12	Sponsorship for Long Island Green Infrastructure Conference & Expo held on 6/21/12 at Brookhaven National Laboratory
\$1,260	5/21/12	Sponsorship of NEMO U8 first time national event held in Great Lakes, Duluth, MN 10/1-3/12.
\$1,260	1/8/13	Illustrated Field Guide to the Ciscoes of the Laurentian Great Lakes and Poster
Education \$1,260	12/10/12	NYSG Support of SoMAS 2013 Bay Scallop Bowl held at Stony Brook University, 2/16/13.

Action Discussion Item #1

New York Sea Grant Budget Report (please refer to the Fiscal Tables and the following three items related to Federal and State Funding):

- A. Federal Budget Letter from National Sea Grant Director Dr. Leon Cammen
- B. NYSG Presentation to SUNY R&D Catalyst Committee concerning State Funding
- C. Example of Faculty Position in Extension and Research which is collaborative between the University of Florida and Florida Sea Grant

Thursday, Mar 28, 2013

To the Sea Grant Directors:

Now that the FY2013 budget has finally been signed, we should be able to give you a spend plan shortly. Although we have been working on several possible scenarios, we are still waiting for the budget to work its way through the Department and the Agency before we can be certain about the final numbers. We are told that may take several weeks. Knowing that decisions have to be made in the near term and that stakeholders are trying to decide whether or not to proceed with proposals, we thought we would share our general thinking at this stage of the process.

Even though the final budget is not yet available, it is clear that the Sea Grant appropriation is going to be substantially less than it was a year ago and this is going to impact our planned activities. As we have been developing contingency plans, we have kept two principles in mind: 1) to maintain a stable base of funding for the state Programs where possible; and 2) to favor ongoing projects and activities over new starts.

It is already clear we will not be able to support the small grants that enable Sea Grant Programs to work with NOAA Regional Teams this year, so we are cancelling that competition. We hope to resume those very successful efforts next year. As for the other two ongoing national competitions, aquaculture and climate change adaptation, we feel it is important to acknowledge the expectations of our stakeholders. Therefore, we are going to proceed with those competitions but at a reduced level, and we expect to be able to support some aquaculture and climate adaptation projects this year and potentially a few more from the same pool of proposals next year. Fewer projects will be supported than were envisioned, but the programs will be kept alive. Even after making these reductions, core funding for the Sea Grant Programs will have to be decreased, probably by a few percent.

As soon as we have the final numbers, we will send you a detailed spend plan that will include additional cuts to several of the smaller national and regional activities as well as the national office. And at that time we will be in a better position to discuss the implications for FY2014. Meanwhile, if you have any questions, I will answer them as best I can.

Regards,

Leon

Leon M. Cammen
Director, NOAA Sea Grant
1315 East-West Highway
Silver Spring, MD 20910
Phone: [301-734-1088](tel:301-734-1088)
Fax: [301-713-1031](tel:301-713-1031)
Email: leon.cammen@noaa.gov



New York Sea Grant

***RESEARCH, EXTENSION
AND EDUCATION***

R&D Catalyst Committee

25 February 2013

Overview

- **What is New York Sea Grant?**
- New York Sea Grant's Financial Information
- Diverse, High-quality Research
- Extension Adds Value
- Impacts
- The Future

What is New York Sea Grant?

- Statewide network of integrated research, extension and education
- Promotes coastal economic vitality, environmental sustainability and citizen understanding of NY's marine and Great Lakes resources
- Cooperative program of SUNY, Cornell and National Oceanographic and Atmospheric Administration
- Based on Economics, Environment and Education

Mission

Our Mission

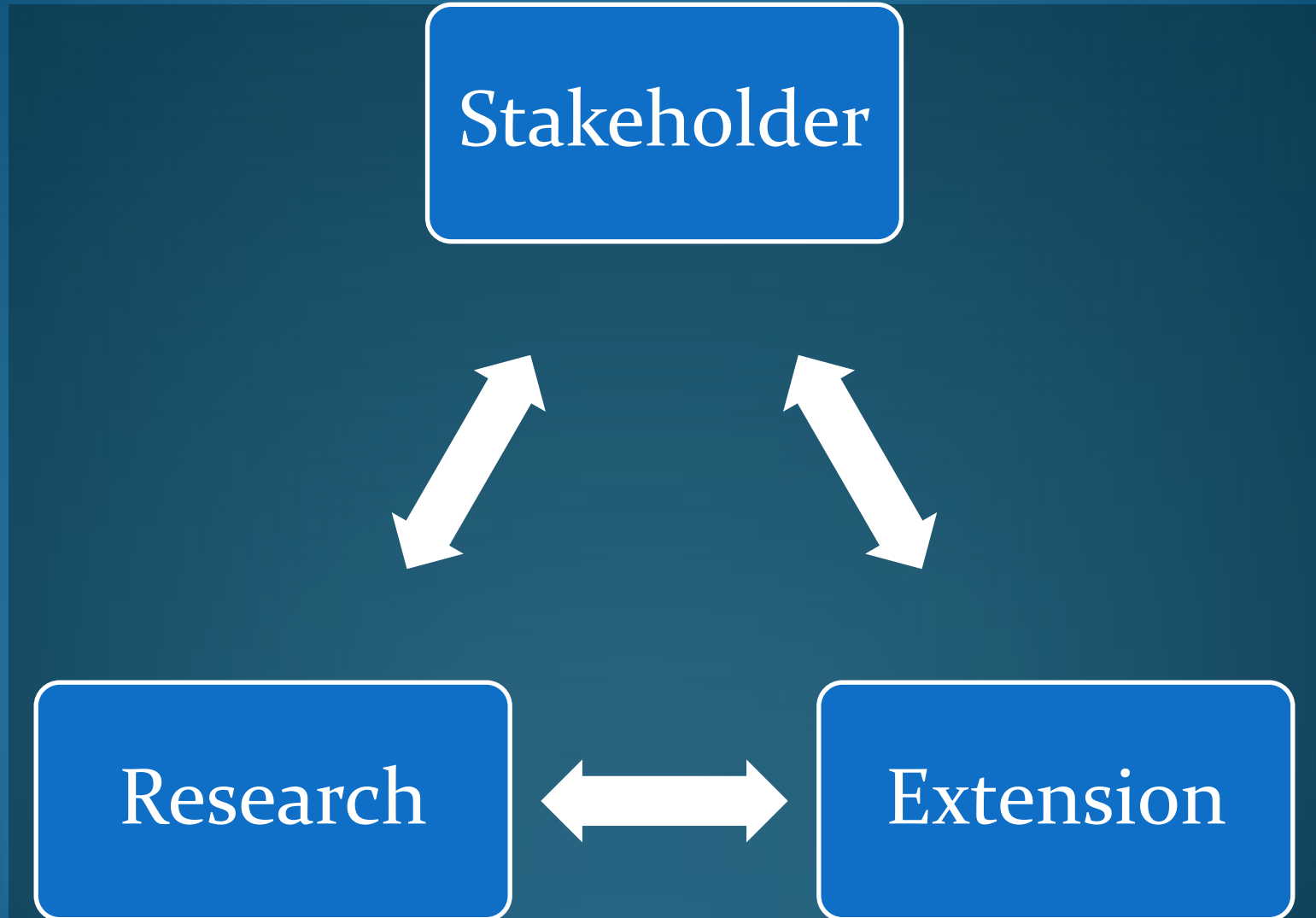
“Bringing science to the shore” through high quality research, extension and education— the three-legged stool.



Our Values

Excellence, Integrity and Responsiveness

Our Philosophy



National Network

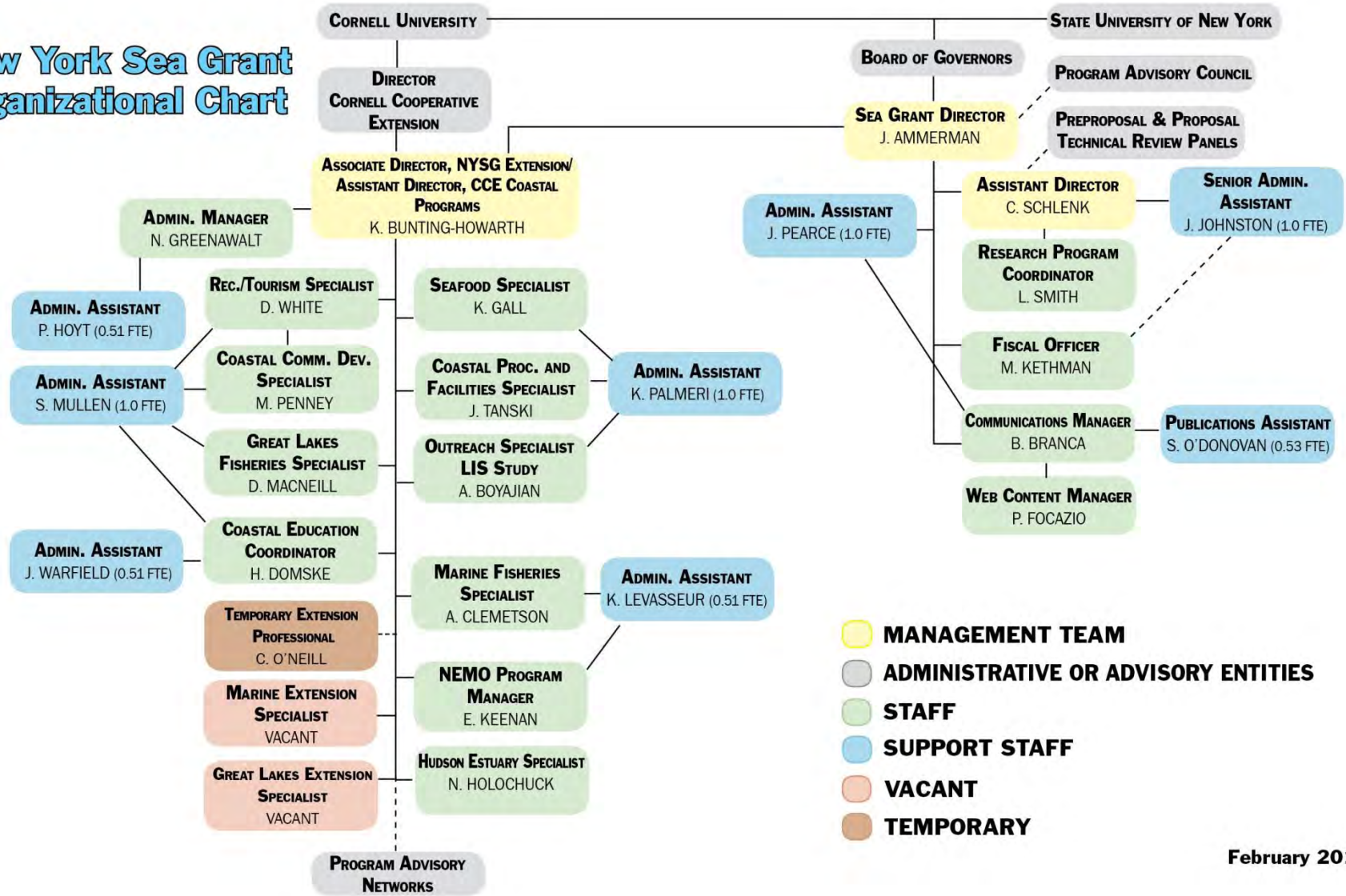
32 other Sea Grant
programs



New York Sea Grant: Staff Locations



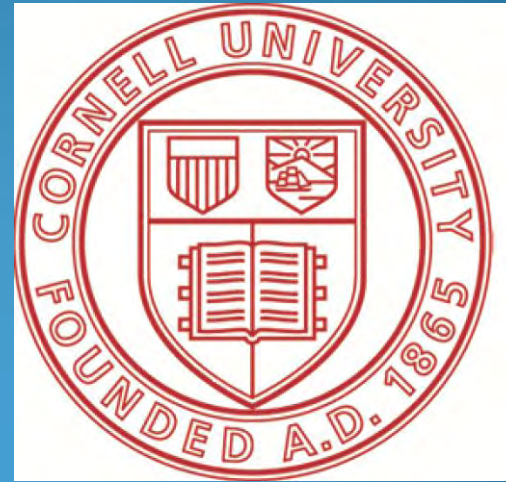
New York Sea Grant Organizational Chart



February 2013

Governance

- Board of Governors—14-member governing body of administrators, faculty, and lay members from SUNY and Cornell as well as state agency representatives



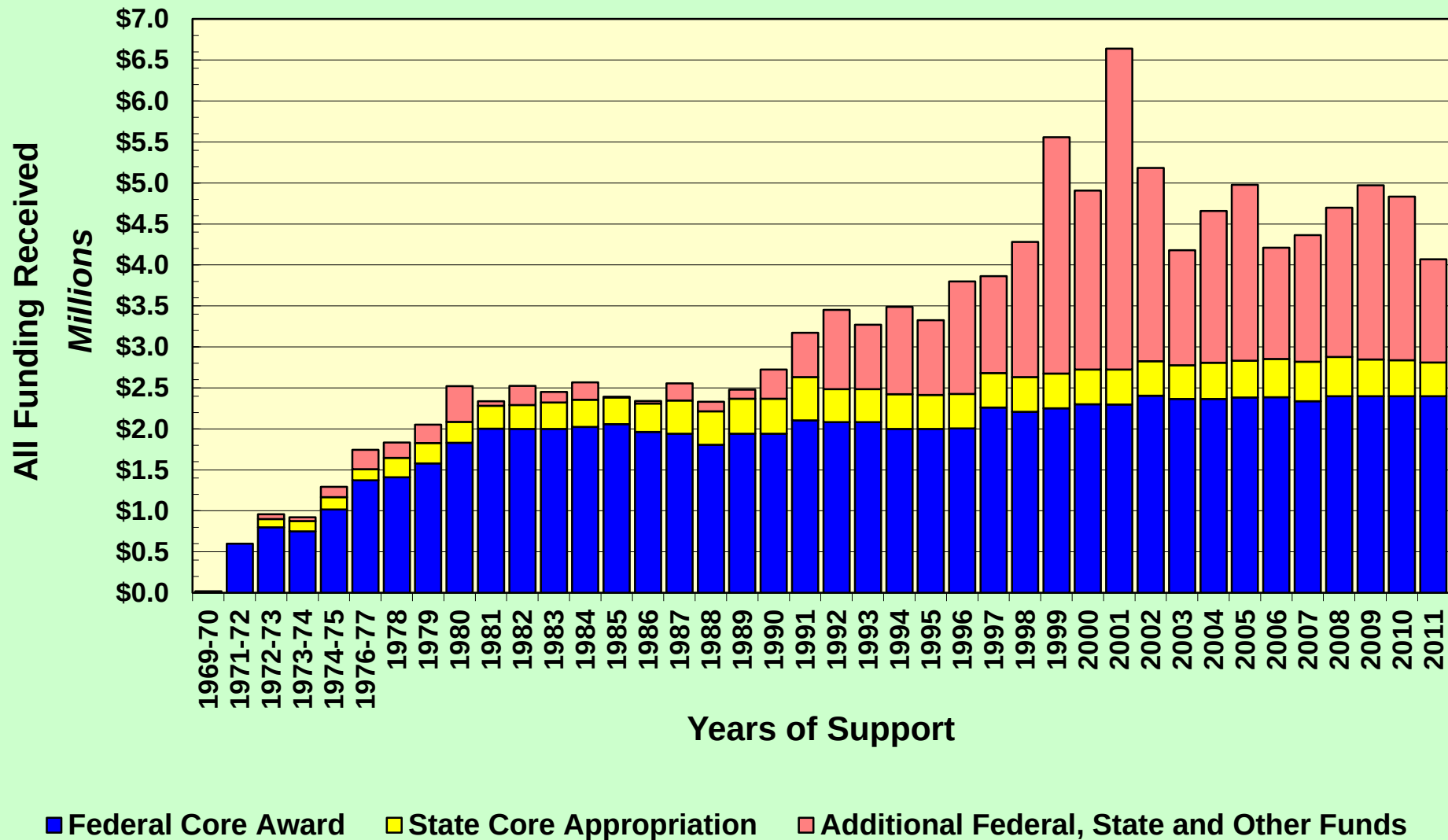
Advisory Groups

- Program Advisory Committee—20 stakeholders from science, industry, government, management
- Technical Panel—*Ad hoc* groups of scientists who evaluate research project proposals
- Program Advisory Networks—Informal advisors to individual extension specialists

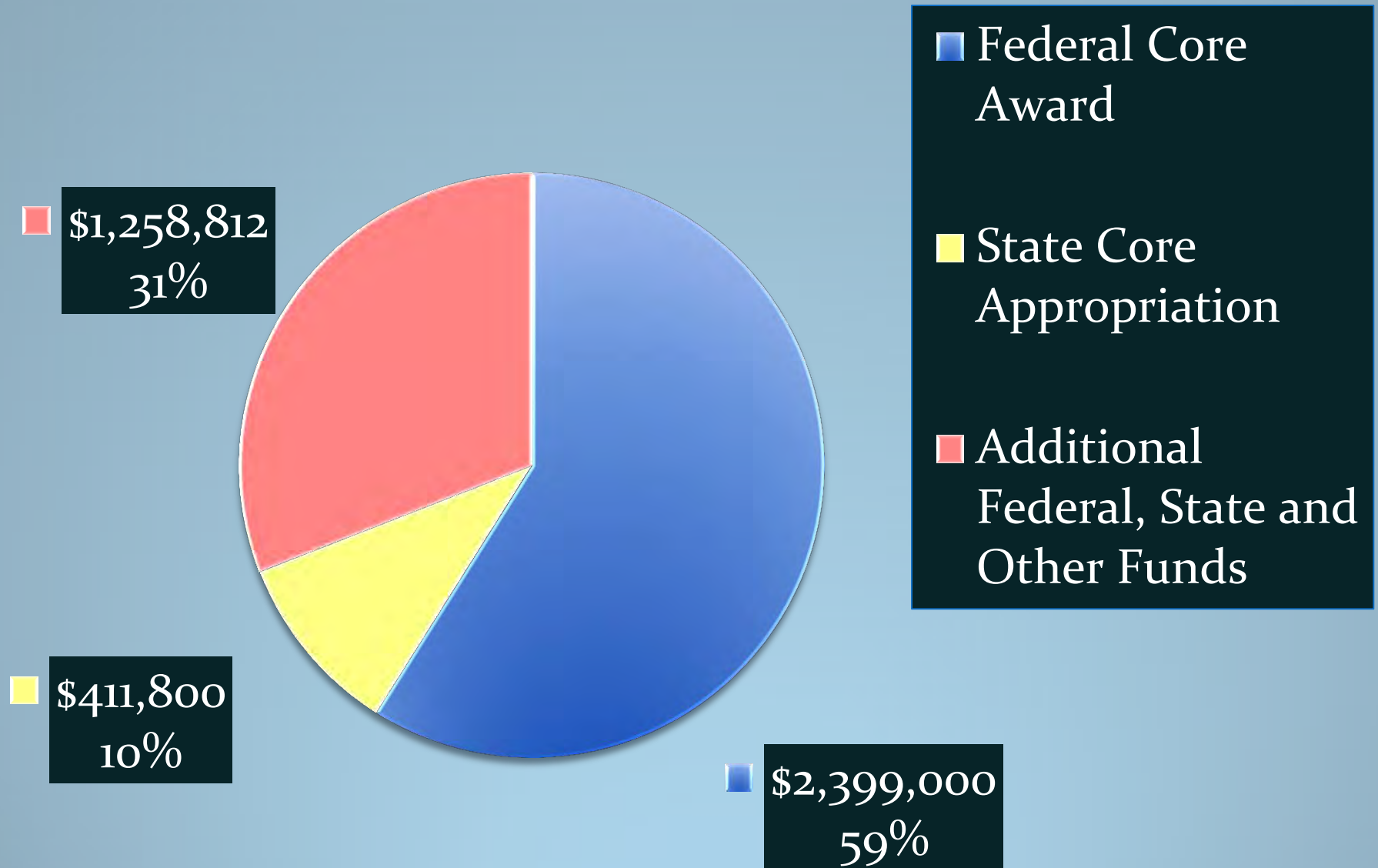
Overview

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NYSG Funding Since Inception



Funding Sources - 2011 Total \$4,069,612



What State Match Does

For every \$1 state dollar, we leverage another \$9

2010 - 2011

Core state appropriations of Brought in an additional

\$411,800

\$3,657,819

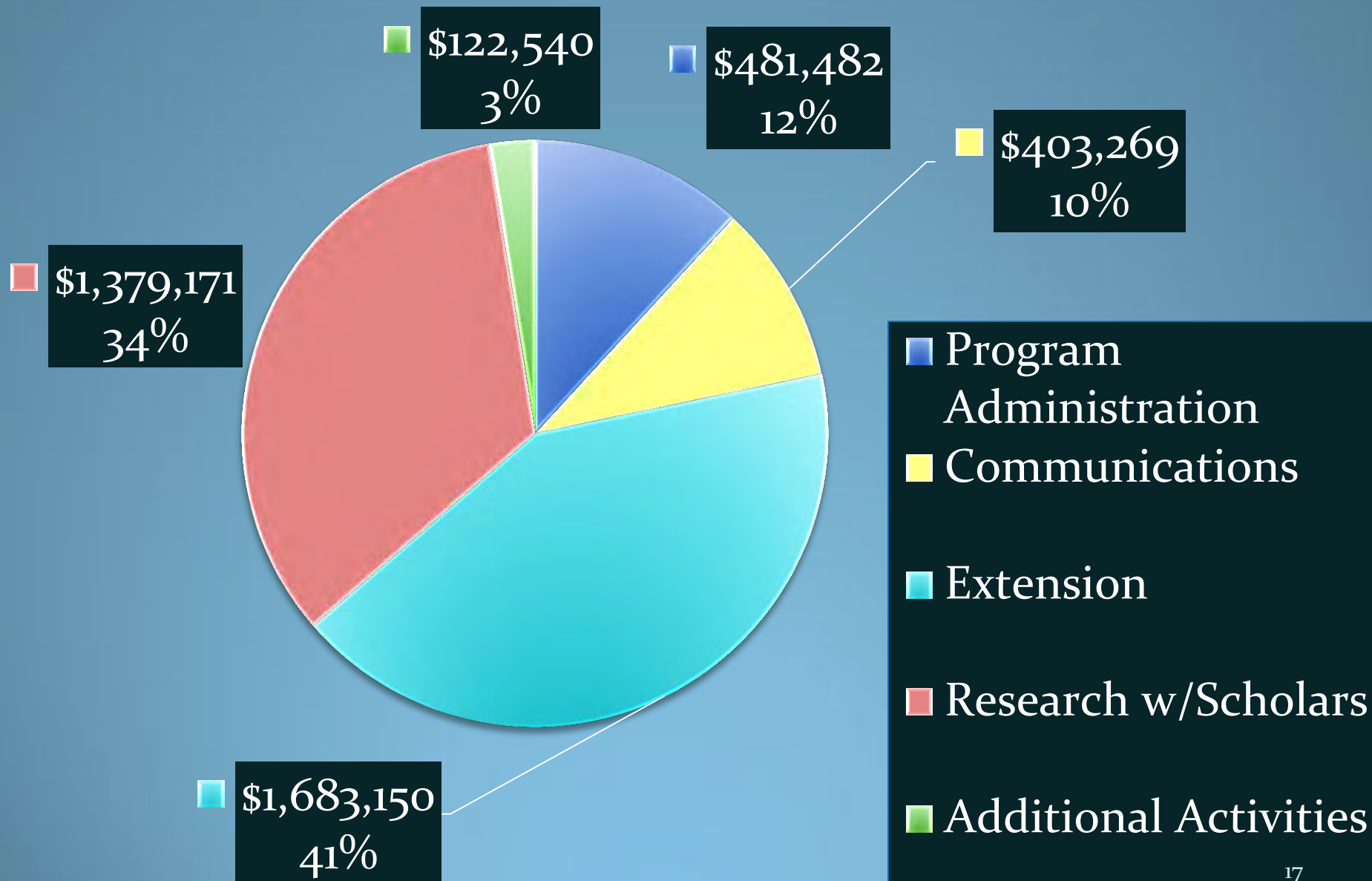
Federal \$\$ Require Match

- 2:1
- \$2,399,000 federal requires
\$1,199,500 non-federal

Value of SUNY \$ to NYSG

- \$411,800 from SUNY provides \$918,421 in cost share for Federal funds
 - \$411,800 salaries + fringe \$215,174 + indirect \$291,446 = \$918,420
- Balance of required cost share is provided by research projects

Total Funding Allocation by Program Area – 2011 Total \$4,069,612



NYSG Partners with these SUNY Locations



Overview

- What is New York Sea Grant?
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Research Funded by NYSG

- Research Proposal Solicitation
 - Based on Strategic Plan
 - Statewide distribution
 - High level of PI interest (>4 times available \$)
- Competitive Project Selection
 - NSF caliber review process

“Over several decades of doing this...this was one of the best run and smoothest panel reviews I have participated in.” — Dr. J.C. Ziemann, Professor, U.VA

High Level of Research Productivity

- 102 peer reviewed publications over the past 5 years
 - ~2 peer reviewed publications per project
 - 53 different journals
 - 61 cited 1-10 times, 5 cited >20 times
- 225 presentations at state/local, nat'l (43%), int'l venues (13%)
- Ability to get additional funding from NOAA, USEPA, NSF, others
- Results with real world impact

Overview

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Sea Grant Extension

- Apply knowledge and understanding gained through research
- Dedicated group with advanced education/training/expertise and schooled to facilitate information transfer
- Works directly with people in coastal communities, such as
 - Federal and State agencies
 - Local governments
 - Coastal industries and businesses
 - Teachers
 - Coastal landowners

Sea Grant Extension

- Making connections in 2011
 - Over 28,000 students reached
 - 109 NYSG workshops reaching over 4400 stakeholders
 - 92 other NYSG presentations reaching 8000 stakeholders
 - 138 marinas and other water dependent businesses educated to implement best practices for economic and environmental sustainability
 - Over 105 municipalities information about stormwater management and watershed approaches
 - Over 2000 recreational anglers, fisheries managers and aquaculturists regarding fish diseases

Overview

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Impacts

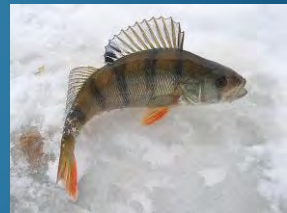
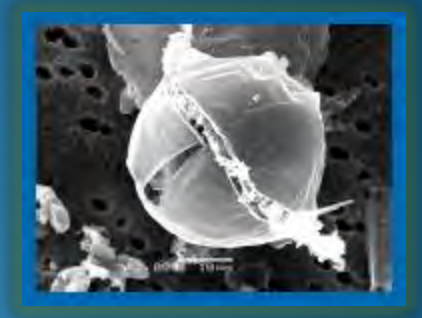
In 2010, Cornell's Dr. Paul Bowser & NYSG's Dave MacNeill won the first-ever national Sea Grant Association Research to Application Award for research and outreach on the fish disease Viral Hemorrhagic Septicemia (VHS).

“A research award from New York Sea Grant was one of the first funding resources available to us in support of our work on the emergence of Viral Hemorrhagic Septicemia in the Great Lakes Basin. That Sea Grant funding allowed us to build a foundation upon which we were able to secure an additional \$2.8M in extramural research funds from a variety of sources over the next 6 years.”



Impacts

- Growth model developed by researchers at ESF and UB for harmful algae in popular Sodus Bay (Lake Ontario) will be extended directly to managers to help identify source of nutrients that negatively impact water quality.
- Dr. Gobler (SBU) research on red tide, *Alexandrium fundyense*, cause of human health risk and economic hardship via shellfish bed closures, is extended throughout the NE. From \$8K NYSG award, secures \$308K from EPA via NYSG and \$600K from NOAA MERHAB to examine LI blooms. Early detection is helping to save lives.
- Invasive species currently have \$100M impacts. With Buffalo State, NYSG helps identify potential next generation of invasive species.



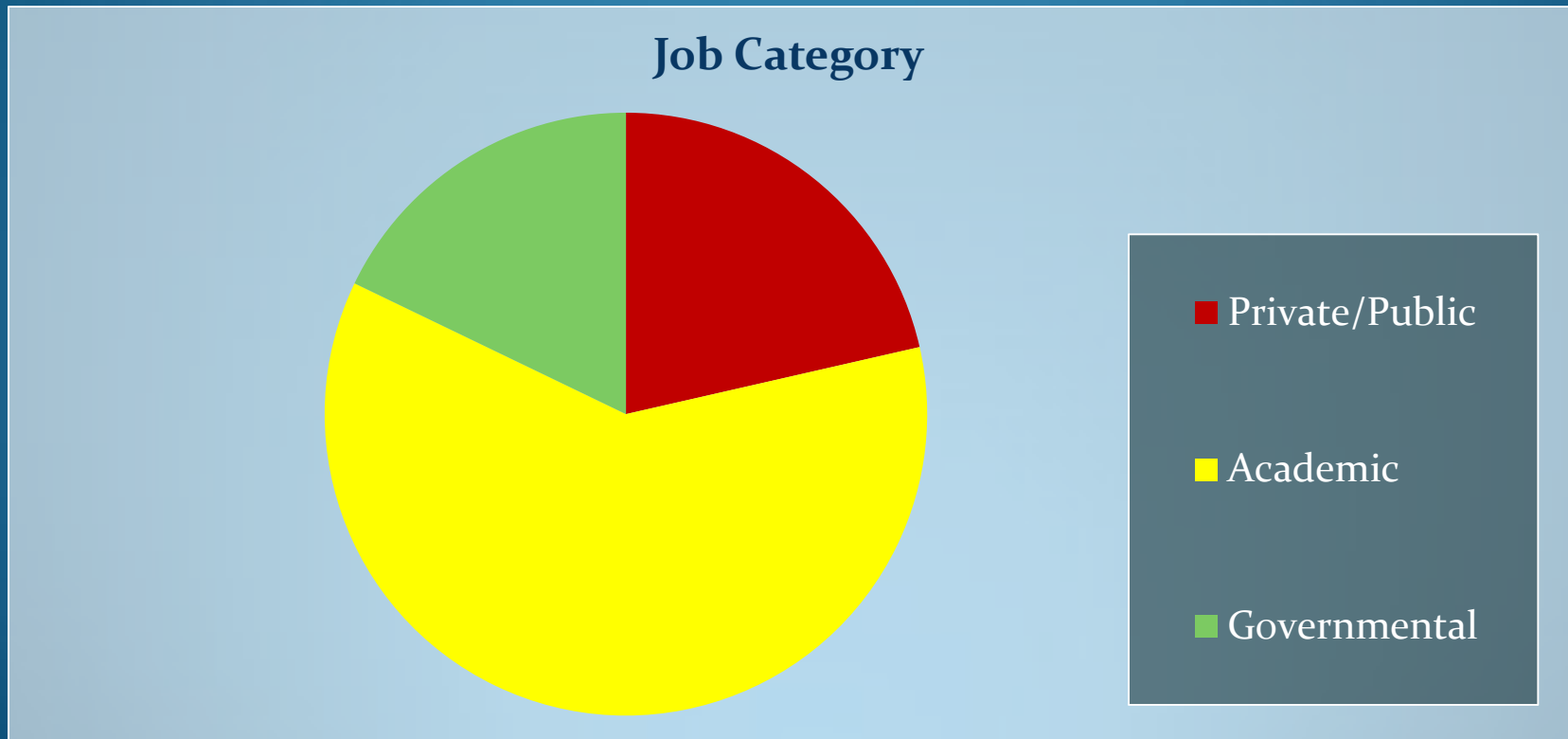
Impacts

- Cornell research on controlling *Listeria* in ready-to-eat seafood processing plants helps NY businesses.
- Hazard Analysis Critical Control Points (HACCP) training of 1000+ workers aids seafood business development.
- NYSG aids US Army Corps of Engineers by convening dredging windows workshop. ACoE uses results with a \$25M dredging project.
- Genetic research that helps identify populations of commercially important species, such as winter flounder, is extended to fisheries management.



Training for Graduate Students

- Various fellowships have supported >700 students total
- MS and PhD levels
- 39 research-related NYSG fellows in last 5 years
 - 28 now have related jobs



Stakeholder Comments

- "Being a NYSG Scholar made me acutely aware of the importance of **obtaining research results that were of use to stakeholders**. It was this process - engaging in science that would ultimately benefit the citizens of NY - that inspired me to pursue a career in science." — *Dr. Christopher Gobler, SBU*
- "NYSG has repeatedly supported my initial or exploratory research on new topics that has ultimately **led to larger national and international projects** supported by federal agencies." — *Dr. Christopher Gobler, SBU*
- "Sea Grant is **unique in the funding world** because it demands research that is likely to produce practical results of importance to their constituency." — *Dr. Isaac Wirgin, NYU*

Stakeholder Comments

“New York Sea Grant’s insight and perspective on tourism in the Northeast offered us models, helped assuage our fears, and inspired us to **create something new that is bigger and better** than our single selves.” — *Oswego Maritime Board member*



“The bottom trawl workshop led by NYSG provided us with our **only formal training on trawl design, construction** and trawling theory. For the first time, direct visualization of how our bottom trawls operate underwater was possible.”

— *NYSDEC Section Head, Great Lakes Fisheries*

Stakeholder Comments

“(NYSG’s) involvement in our **reiteration of sustainable building and water treatment practices** is extremely important to Long Islands’ residents as well as our ecosystems and water quality.”

— *Director, Nassau County Soil and Water Conservation District*



“The efforts of Sea Grant are very **valuable to the communities on the shores of Long Island and its Eastern End.**”

— *East Hampton Town Trustee*

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- **The Future**

Response to Hurricane Sandy

Testimony given before NYS Senate and Assembly

Outreach to coastal businesses via surveys to determine economic impacts

New rapid response research projects will determine:

- How the Fire Island breach is impacting the physical characteristics of Great South Bay
- How estuary ecosystem will process additional nitrogen from failure of LI's Bay Park Sewage Treatment Plant

Respond to Future Funding Opportunities

Future Program Goals

Further Enable Science-based Decision-making

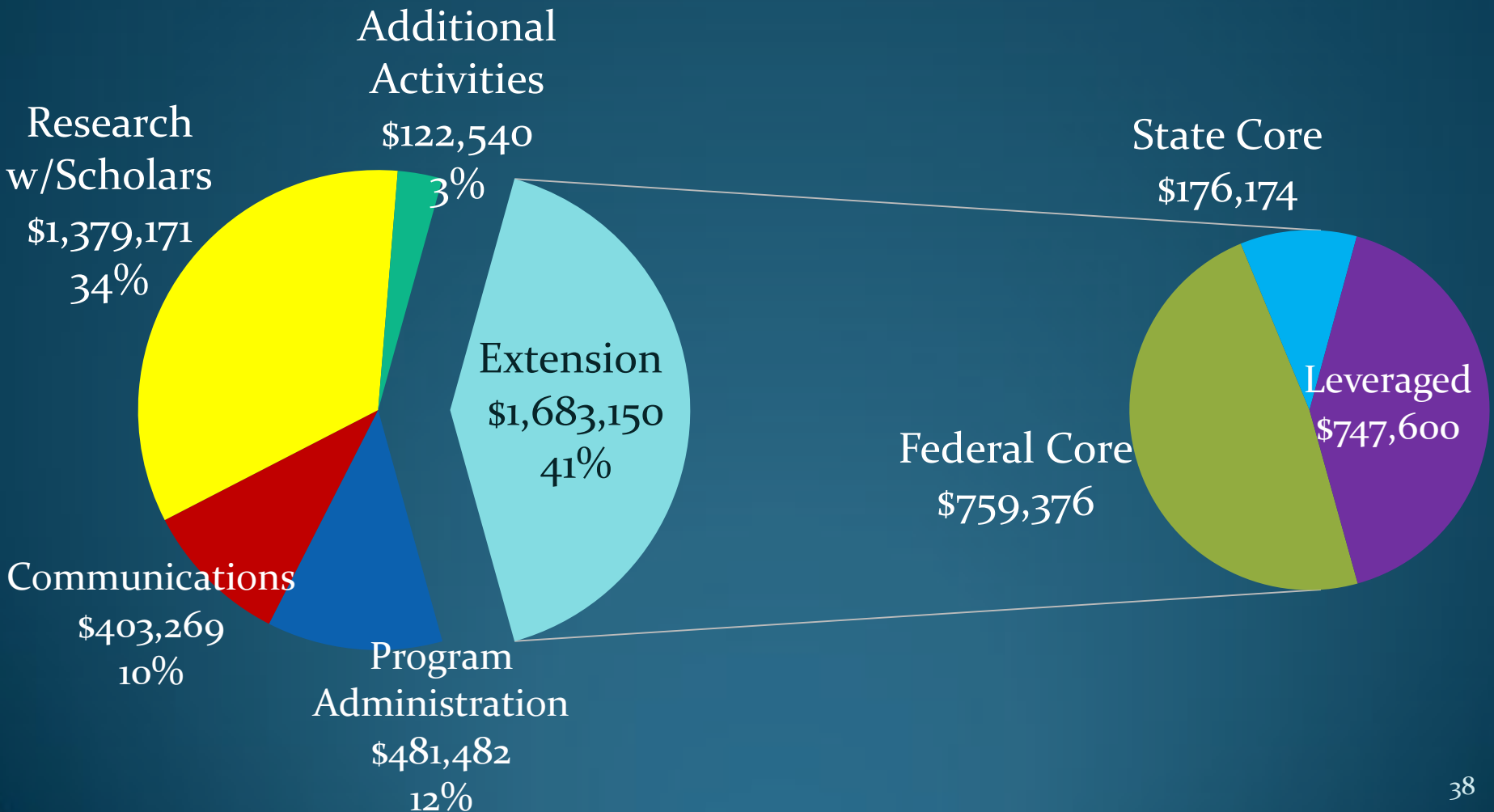
- Integrated Assessment
- Increase Technology Transfer
- Enhance use of NY researcher talents for NY stakeholder benefit

Future Goals with Additional Support

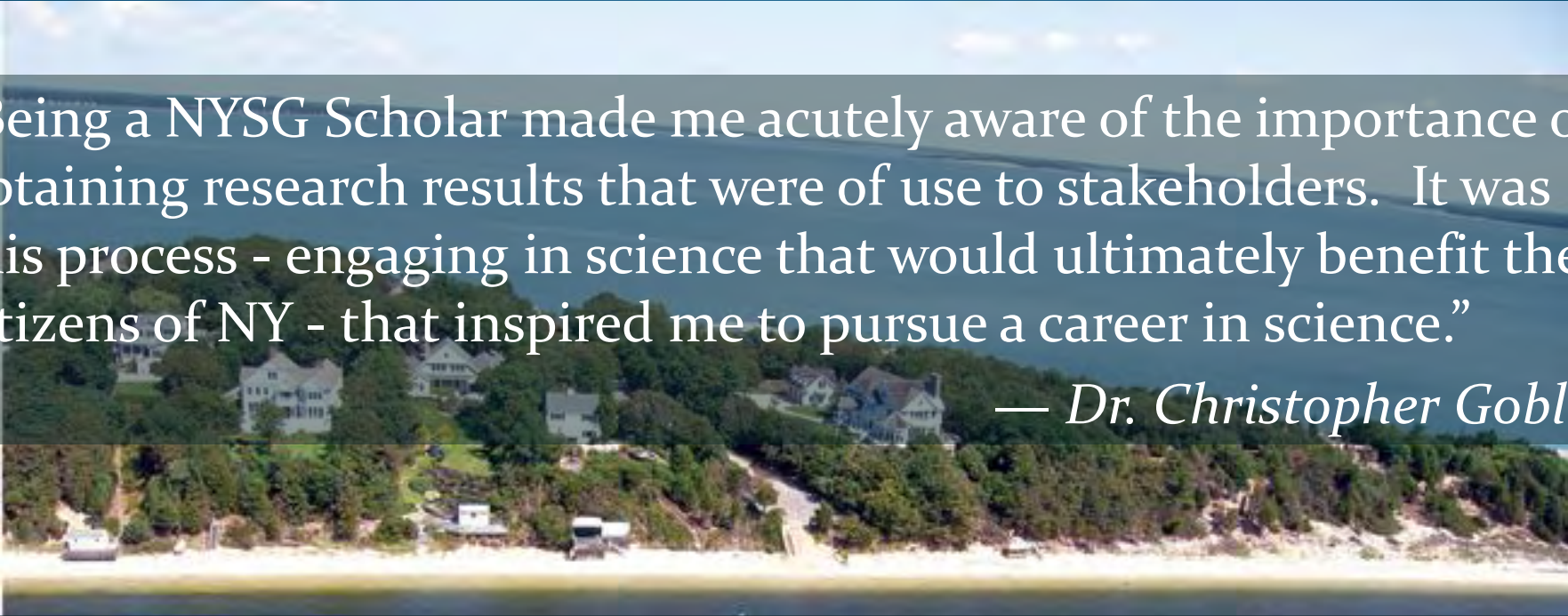
- Increase synthesis efforts
- Increase capacity to address water quality issues on Long Island
- Increase capacity to address climate change, coastal processes and hazard resiliency statewide

Thank You
and
Questions

Available Funds by Program Elements 2011-total \$4,069,612



From Scholar...

An aerial photograph of a coastal town. The town is built on a hillside covered in green trees and shrubs. Several houses with light-colored roofs are visible. At the bottom of the hill, there is a sandy beach and a few small boats in the water. The sky is blue with some light clouds.

"Being a NYSG Scholar made me acutely aware of the importance of obtaining research results that were of use to stakeholders. It was this process - engaging in science that would ultimately benefit the citizens of NY - that inspired me to pursue a career in science."

— *Dr. Christopher Gobler*

... to Researcher with Impact

"NYSG has repeatedly supported my initial or exploratory research on new topics that has ultimately led to larger national and international projects supported by federal agencies."

Innovative techniques in identification of fish populations

- Dr. Ike Wirgin (NYU) awarded NYSG funds to identify breeding populations of several fish species
- Human activities have reduced sturgeon populations
- Use of innovative microsatellite techniques to identify distinct population segments or DPS of each species
- Based on this work, four of five DPS of Atlantic sturgeon were listed as endangered as of February 2012
- Wirgin's funded research also helps identify populations of commercial important winter flounder



Sea Grant:

“Unique in the Funding World”

- “Support from NYSG on several projects, particularly Atlantic sturgeon and sea lamprey, allowed us to provide important new data that has been used by federal, state, and international agencies to manage these two species.”
- “In another NYSG supported study, we demonstrated that sea lamprey were native to Lake Ontario and Lake Champlain thus giving pause to managers highly bent on their absolute eradication there. Sea Grant is unique in the funding world because it demands research that is likely to produce practical results of importance to their constituency.”
— *Dr. Isaac Wirgin*

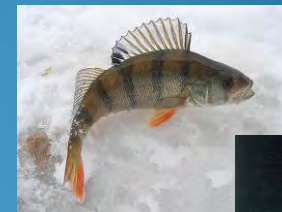
Research Model

Direct to Coastal Managers

- Popular Sodus Bay in Lake Ontario suffered a major toxic cyanobacterial bloom in 2010, resulting in extensive economic impacts to the region's marinas and tourism
- Drs. G. Boyer (ESF) and J. Atkinson (U Buffalo) funded to develop and validate a coupled biological and physical growth model to measure algal dynamics in the Bay
- The model helps managers identify relative impacts and contribution of different nutrient sources to algal growth

Examples of Extension Successes

- Controlling *Listeria* in Ready-to-Eat Seafood Processing Plants
 - Extending Cornell Research to NY businesses
- Economic impacts from HACCP training (Hazard Analysis Critical Control Points)
 - 1,282 completed training in 2012
 - 151 for a new business start-up
 - 313 for business expansion
- Aid US Army Corps of Engineers through convening dredging windows workshop
 - Incorporate Stony Brook research
 - Addressing \$25 million project
- Identifying the potential next generation of Invasive Species
 - Partnered with Buffalo State
 - \$100 million dollar impacts annually





Institute of Food and Agricultural Sciences
Food Science and Human Nutrition Department

PO Box 110370
Gainesville, FL 32611
352-392-1991
352-392-9467 fax
<http://fshn.ifas.ufl.edu/index.shtml>

POSITION ANNOUNCEMENT # 0001-2889
Requisition # 0902031

Title: Assistant Professor
Seafood Specialist for Extension Services and Research

Location: Food Science and Human Nutrition Department (FSHN)
University of Florida
Institute of Food and Agricultural Sciences (IFAS)
Gainesville, Florida

Salary: Commensurate with Qualifications and Experience

Review Date: For full consideration, candidates should apply and submit additional materials by February 15, 2013. The position will remain open until a viable applicant pool is determined.

Duties and Responsibilities

This is a 12-month, tenure-accruing position that will be 70% extension (Florida Cooperative Extension Service) and 30% research (Florida Agricultural Experiment Station) available in the Food Science and Human Nutrition Department, Institute of Food and Agricultural Sciences, at the University of Florida. This assignment may change in accordance with the needs of the unit. Duties will include extension services and research addressing technical aspects of seafood and aquaculture product safety, quality and nutrition in both domestic and international commerce, as well as stakeholder interests in commerce and regulation from production and processing through food service and retail sectors. The intent is to maintain the productivity and reputation of the established seafood technology program currently shared by the FSHN Department and the Florida Sea Grant College Program working cooperatively across departments, universities and related programs locally, nationally, and internationally. The common link is seafood commerce and consumption in Florida. Tenure will accrue in FSHN.

The successful candidate will participate actively in undergraduate and graduate education by chairing and serving on graduate committees, supervising thesis, dissertation and undergraduate research, and publishing research results with students. Faculty are encouraged to participate in professional

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development activities related to teaching and advising and may teach courses and seminars. The faculty member will actively seek contract and grant funding to support his/her program. The faculty member will engage in Extension activities in his or her program area. In accordance with the IFAS land-grant mission, all faculty are expected to be supportive of and engaged in all three mission areas—Research, Teaching and Extension—regardless of the assignment split specified in the position description.

Qualifications

An earned doctorate (foreign equivalent acceptable) in **Food Science and Technology with a focus on seafood** or a closely related discipline is required. Postdoctoral experience is desirable. Candidates should have demonstrated skills in verbal and written communication, interpersonal relationships, and procurement of extramural funding. Candidates must be supportive of the mission of the Land-Grant system. Candidates must also have a commitment to IFAS core values of excellence, diversity, global involvement, and accountability.

Background Information:

The Food Science and Human Nutrition Department, a large, interdisciplinary unit within IFAS, is comprised of three distinct undergraduate programs: Food Science, Nutritional Sciences, and Dietetics. The Food Science program is an approved curriculum with the Institute of Food Technologists. Undergraduate student enrollment is approximately 700, including 100 Food Science students. The graduate program enrolls approximately 100 M.S. and Ph.D. students. Graduate level programs are competitive and provide the opportunity for graduate student mentorship. Please consult the departmental webpage for additional information (<http://fshn.ifas.ufl.edu/index.shtml>). The department's 31 faculty conduct research, teaching and extension programs in a broad range of areas, including food safety and microbiology, phytochemical characterization, aquatic foods, fruit and juice processing, engineering modeling, micro- and macronutrient metabolism, pre- and probiotics, nutritional immunology, obesity and many other areas. The department has a strong interdisciplinary nature and there is great opportunity for unique collaborations, such as those established through the Center for Nutritional Sciences (<http://nutritionalsciences.centers.ufl.edu>). Within walking distance are superb opportunities to participate in translational research with the Clinical and Translational Science Institute and collaborate with faculty from the Colleges of Medicine, Health and Human Performance, Public Health, Pharmacy, Liberal Arts and Sciences, Engineering, and Agricultural and Life Sciences. The University's Interdisciplinary Center for Biotechnology Research provides research support laboratories for proteomics, genomics, bioinformatics, and cellomics.

The Florida Sea Grant (FSG) College Program is one of 32 Sea Grant Programs nationwide that together form the National Sea Grant College Program, as authorized by Federal legislation under the Department of Commerce, National Oceanic and Atmospheric Administration. Florida Sea Grant operates through a statewide university-based research, education and extension partnership of state and federal agencies, businesses and citizens. The mission of FSG is to support integrated research, education, communications and extension to enhance the practical use and conservation of coastal and marine resources in Florida to create a sustainable economy and environment. This is achieved by coordinating a multi-faceted yet integrated program that addresses critical local, state and national issues related to the oceans and coasts in four focus areas: seafood production and safety; sustainable and hazard-resilient coastal communities; healthy coastal and marine ecosystems; and climate change

impacts and adaptations. Please consult the FSG webpage for additional information (<http://www.flseagrant.org/>).

The University of Florida (<http://www.ufl.edu>) is a Land-Grant and Sea-Grant institution, encompassing virtually all academic and professional disciplines, with an enrollment of more than 50,000 students. UF is a member of The Association of American Universities. The Institute of Food and Agricultural Sciences (<http://ifas.ufl.edu>) includes the College of Agricultural and Life Sciences (<http://cals.ufl.edu>), the Florida Agricultural Experiment Station (<http://research.ifas.ufl.edu>), the Florida Cooperative Extension Service (<http://extension.ifas.ufl.edu>), the College of Veterinary Medicine (<http://www.vetmed.ufl.edu>), the Florida Sea Grant program (<http://www.flseagrant.org/>), and encompasses 15 academic departments and the School of Forest Resources and Conservation, 9 interdisciplinary centers, 13 research and educational centers throughout the state, and Cooperative Extension units in each of Florida's 67 counties and the Seminole Tribe. The School of Natural Resources and Environment is an interdisciplinary unit housed in IFAS and managed by several colleges on campus. IFAS employs over 3400 people, which includes approximately 950 faculty and 2450 support personnel located in Gainesville and throughout the state. IFAS, one of the nation's largest agricultural and natural resources research and education organizations, is administered by a Senior Vice President and four deans: the Dean of the College of Agricultural and Life Sciences, the Dean for Extension and Director of the Florida Cooperative Extension Service, the Dean for Research and Director of the Florida Agricultural Experiment Station, and the Dean for the College of Veterinary Medicine. UF/IFAS also engages in cooperative work with Florida A&M University in Tallahassee.

Employment Conditions

This position is available July 1, 2013, and will be filled as soon thereafter as an acceptable applicant is available. Compensation is commensurate with the education, experience, and qualifications of the selected applicant.

Nominations

Nominations are welcome. Nominations need to include the complete name and address of the nominee. This information should be sent to:

Please refer to Requisition # **0902031**
Bobbi Langkamp-Henken
Chair, Search and Screen Committee
University of Florida
Food Science and Human Nutrition Department
PO Box 110370
Gainesville, FL 32611-0370

Telephone: 352-392-1991, extension 205
Facsimile: 352.392.9467
Electronic Mail: henken@ufl.edu

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Application Information

- Individuals wishing to apply should go online to <http://jobs.ufl.edu/postings/34825> and submit:
 - Application
 - Cover letter that states applicant's interest in the position and qualifications relative to the credentials listed above
 - Resume
- Official transcripts showing receipt of the doctoral degree and three letters of recommendation should be made available upon request.

Please refer to Requisition # 0902031
Bobbi Langkamp-Henken
Chair, Search and Screen Committee
University of Florida
(Food Science and Human Nutrition Department
PO Box 110370
Gainesville, FL 32611-0370

Telephone: 352.392.1991, extension 205
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The University of Florida is an Equal Opportunity Institution dedicated to building a broadly diverse and inclusive faculty and staff. The selection process will be conducted in accord with the provisions of Florida's 'Government in the Sunshine' and Public Records Laws. Search committee meetings and interviews will be open to the public, and applications, resumes, and many other documents related to the search will be available for public inspection. Persons with disabilities have the right to request and receive reasonable accommodation.

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Administration

\$9,859	NYSG Visioning Meeting held at Cornell University, Ithaca, NY 3/22/12.
\$4,807	NYSG Statewide Staff Meeting (10/23-24/12) held at Norrie Point Environmental Center, Staatsburg, NY
\$13,000	Overhead on first \$25,000 of 2 (@ \$6500) new subcontracts to CCE, Suffolk County and The Cary Institute (non-SUNY projects) with a February 1, 2012 start date.

Future Commitments *(will be reported in future BOG blue books in years they are paid)*

\$8,000	Program Advisory Council Meeting April 5, 2013 held at JFK Hilton. Preproposal Review Meeting for 2014-15 Research Call.
\$10,000	Technical Review Panel meeting for review of full proposals for 2014-15 research call submitted to NYSG to be held August 2013
\$1,500	Board of Governors Meeting, Buffalo, NY, 4/30/2013
\$1,260	Support for Biogeochemistry of the Great Lakes System Workshop, 3/11-13/13 to be held at Wayne State University, Detroit, MI
\$630	Support for National Working Waterfronts & Waterways Symposium to be held 3/25-28/13 Tacoma, WA
\$2,205	Travel support for Dr. Malcolm Bowman to London UK & Netherlands to investigate storm surge protection systems January 2013.
\$2,520	Sponsorship of the 2013 LI Sound Research Conference and Proceedings publication costs to be held at Danford's Hotel 4/9/13, Port Jefferson, NY
\$1,260	Sponsorship of IAGLR 56 th Conference on Great Lakes Research, Purdue University, West Lafayette, IN 6/2-6/13
\$7,560	Support for Great Lakes Futures Project Students
\$31,161	Out-Of-Cycle research Project, PI Chester B. Zarnoch, Baruch College, CUNY, R/CTP-48, <i>"Ecosystem response to enhanced nutrient loadings following Hurricane Sandy in the Long Island South Shore Estuary: increased nitrogen removal or availability?"</i>

Approved by NYSG Management Team, but not invoiced:

\$2,772	Travel support for Dr. Daniel Molloy, University of Albany, to travel to the International Conference on Aquatic Invasive Species 4/21-25/13 in Niagara Falls, ON to present a lecture at the conference on zebra and quagga mussels.
\$945	Sponsorship of 2 nd LI Green Infrastructure Conference & Expo to be held 6/12/13.
\$10,000	Peconic Aquaculture Leasing Monitoring (PALM) Workshop

Action Discussion Item #2

Other Funding Sources:

- A. Letter from CUNY Vice Chancellor for Research Dr. Small concerning agreement for Jamaica Bay Science and Resiliency Center
- B. Final CUNY Jamaica Bay Science and Resiliency Center Proposal

March 18, 2013

Re: NYC Department of Parks and Recreation and National Parks of New York Harbor RFEI for
a Jamaica Bay Science & Resilience Center

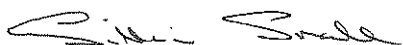
Dear Consortium Members:

We are pleased to report that the Commissioners of the NYC Department of Parks and Recreation and National Parks of New York Harbor have contacted CUNY to discuss a contract related to the RFEI proposal submitted by our proposed consortium.

The process of being named a selected proposer through to conclusion of a contract can be long and protracted. In addition, an announcement of award cannot be made by the Commissioners until a contract is concluded. Thus, we have been asked to keep this information confidential and not discuss it with colleagues outside of the proposed consortium until we are otherwise informed by the Commissioners. Thus, I am asking that at this time you only discuss this matter with your colleagues who are directly involved and your senior administrators. Likewise, please ask them to keep these discussions confidential.

We will be scheduling a call with the proposed consortium members to discuss this further.

Sincerely,



Gillian M. Small
Vice Chancellor for Research



Ecosystem Science for Community Resilience in the 21st Century

CUNY Proposal for a Jamaica Bay Science & Resilience Center

A Response to the
City of New York and National Park Service
Request for Expressions of Interest

Submitted by
The City University of New York in partnership with
Columbia University, Cornell University/ New York Sea
Grant, NASA Goddard Institute for Space Studies, Rutgers
University, Stony Brook University, Stevens Institute of
Technology, and Wildlife Conservation Society



One touch of nature makes the whole world kin
- W Shakespeare

*...A town is saved, not more by the righteous men in it
than by the woods and swamps that surround it.*
- H D Thoreau

Urbanization increasingly dominates the human experience. The world's population is now more than 50% urban, and most of the population growth in the next decades will be in cities. The number of people living in urban areas is expected to rise from 3.5 billion today to 6.3 billion in 2050. Cities have become a focal point for predicting how society will create wealth and opportunity in the future. The question of urban sustainability is central to global sustainability efforts generally, and scientific inquiry specifically (e.g., special sections in *Science* [8 February 2008] and *Nature* [20 October 2010]). All of our sustainability efforts will require a more sophisticated and systematic understanding of cities and how they contribute to humanity's well-being in an increasingly complex world.

Regional ecosystem services provide a critical link between human well-being and the realities of urbanization. Regional ecosystem services also represent a significant opportunity for fostering urban sustainability and the resilience that grounds it. These services would be enhanced by a continually evolving vision and plan for developing and implementing practical solutions that will ensure that local ecosystems can not only continue to protect the biodiversity of the region, but also can continue to serve a range of human needs such as environmental quality protection, disaster risk reduction, climate change adaptation, and enjoyment of amenities and recreational sites.

Our scientific, educational, and engineering initiatives must serve to advance our understanding of the complex relationship between natural and social systems, so this new knowledge can be translated into meaningful public policy and private action. To achieve these goals, we need to define locations throughout the globe, such as Jamaica Bay, where ideas and concepts

can be tested and evaluated to become the seedbeds of the wider movement to harmonize nature and society and to create a sustainable and resilient world.

The devastation and disruption caused by Hurricane Sandy is a remarkably fresh reminder of the importance of increasing coastal resilience in urban areas. We believe that this CUNY-led partnership affords the best opportunity to meet the exciting and daunting challenges such as those outlined in the Jamaica Bay Science and Resilience Center Request for Expressions of Interest.

Mission

The mission of our proposed Jamaica Bay Science and Resilience Center (JBSRC) is to promote the acquisition and dissemination of knowledge about the ways in which natural and human systems may interact to shape and enhance ecosystem and community resilience. The Center will be a regionally, nationally, and internationally recognized source for research and education on resilience analysis and practice in a highly urbanized watershed. The Center will help to better manage Jamaica Bay and will serve as a model for other sites located in cities around the globe. The Center's model for resilience analysis and practice will strengthen the connections between the natural-human system, ecosystem services and amenities, and the communities within the Bay, its watershed, and beyond (see Figures 1-3 below). Jamaica Bay and its surrounding communities will experience natural and unnatural stresses in the coming decades. In the face of these challenges, the JBSRC will make possible the sound management of the Bay through the promotion of ecosystem resilience.

Program Vision

The JBSRC will accomplish its mission by integrating cutting-edge efforts from across the natural and social sciences including climate sciences, engineering, and sustainability and resilience studies, to create a comprehensive research, monitoring, education and outreach program. Long-term global sustainability requires urban municipalities to increase community resilience to diverse shocks and stresses such as climate change and intense urbanization, while also facilitating the efficient use of resources and upholding social equity. The Center's vision hinges on the belief that the restoration and maintenance of urban ecosystem services is essential to meeting these challenges. The Center will establish local, national, and international partnerships to explore the scientific principles that govern urban ecosystem resilience, and to transfer such knowledge to the natural and social systems of cities. The Center will also develop urban sustainability education programs (for K-16 and for the general public) that incorporate findings and recommendations made by local and global urban ecosystem and community resilience research programs.

Resilience is the capacity of a system to recover and re-establish itself after a sudden shock or as a result of gradual pressure. In this context, a resilient system will be able to maintain its function, structure, and feedback mechanisms despite ongoing specific (those particular to a site) or general (those impacting all sites, e.g., climate change) stresses. Resilience metrics and indicators increasingly are being used as meaningful measures of a system, its function, and its position with respect to system-level thresholds or tipping points. The Center will utilize state-of-the-art resilience analysis and practice (RAP) approaches to define conditions for enhanced operation, management, and policy for the Bay and the surrounding communities.

The Center activities will be built around several central tenets of resilience analysis and practice: (1) consideration of multiple temporal and spatial scales including upstream and downstream users, costs and future demands; (2) inclusion of the perspectives of all public (including government) and private interest groups; (3) recognition of scientific uncertainty and the need for action to be flexible and adaptive in the face of new knowledge; (4) identification of system thresholds as benchmarks and signposts for action; and (5) understanding that resilience does not mean an

absence of change. The conditions for and the connections between these five tenets will be elucidated through the work of the Center which will include research, monitoring, and education activities. (Figures 1-3 illustrate the structure and overall mission of the Center.)

The research program for the center will address three central science and resilience questions:

- How have natural and anthropogenic drivers changed the resilience of the Jamaica Bay ecosystem since the Bay's creation to the present?
- How can the ecological and physical properties (both natural and unnatural) of a site be utilized to promote resilience?
- How can understanding of a resilient system be used to identify how human and ecological system factors are coupled, and how can this coupling be used to increase sustainability through the increase of ecosystem services?

Primary Research Goals

The Center's research activities will be organized under three guiding themes: (1) understanding the temporal nature and robustness of Jamaica Bay's resilience, (2) developing models for studying the fundamental nature of resilient systems, and (3) determining how best to manage ecosystems to ensure resilience and sustainability.

(1) Temporal Nature of Jamaica Bay's Resilience

Jamaica Bay has experienced profound changes over its geologically brief lifespan (~15,000 yrs). Urban development has truncated the freshwater creeks dramatically, and today, most freshwater enters by way of sewage treatment plants. The ecologically significant salt marsh islands are eroding at an astonishing and accelerating pace. Coincident with these alterations have been profound ecological changes, such as the loss of rich oyster reefs and seagrass beds. These qualitative observations suggest an aquatic system that has had its ambient level of resilience overwhelmed by system changes to effect an ecological "regime shift." If so, then the Bay's present-day existence in a new, human-dominated ecological regime has major consequences both for its degree of resilience to further shifts—either forward or backward—and for ongoing habitat restorations.

**Jamaica Bay Science and Resilience Center (JBSRC) at the
City University of New York:
Resilience Analysis and Practice (RAP)**

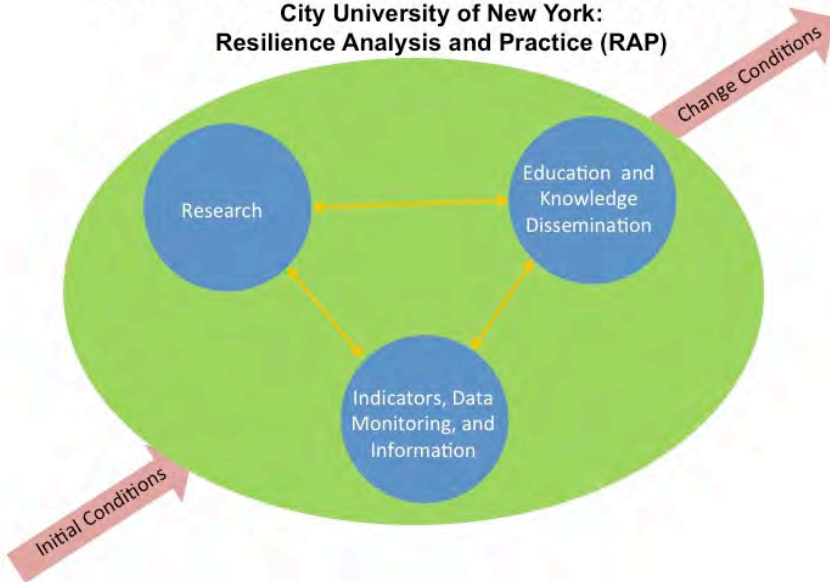


Figure 1. Basic Structure of the the JBSRC Resilience Analysis and Practice Process.

An interdependent set of research, data and information monitoring, and education and knowledge dissemination functions will be applied to a variety of science and resilience questions and problems. The application of these functions will foster a shift from initial conditions to new change conditions for each question or problem. Understanding the role and character of thresholds of change and system tipping points will be a central science objective.

Figure 2. Application of the JBSRC Resilience Analysis and Practice Framework. The RAP framework will be applied to a range of connected spatial and topical application settings. Science and management innovations can be defined within each setting or via system-level resilience linkages between the settings.

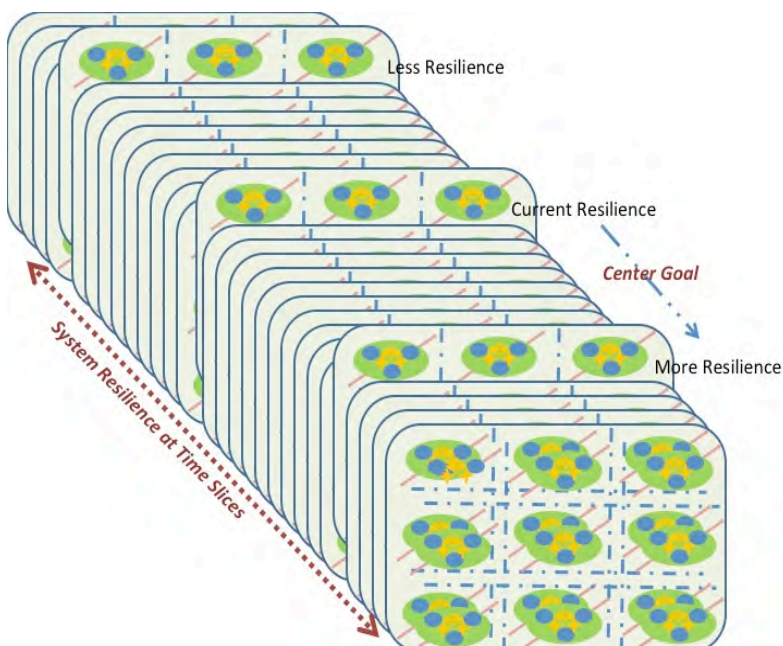
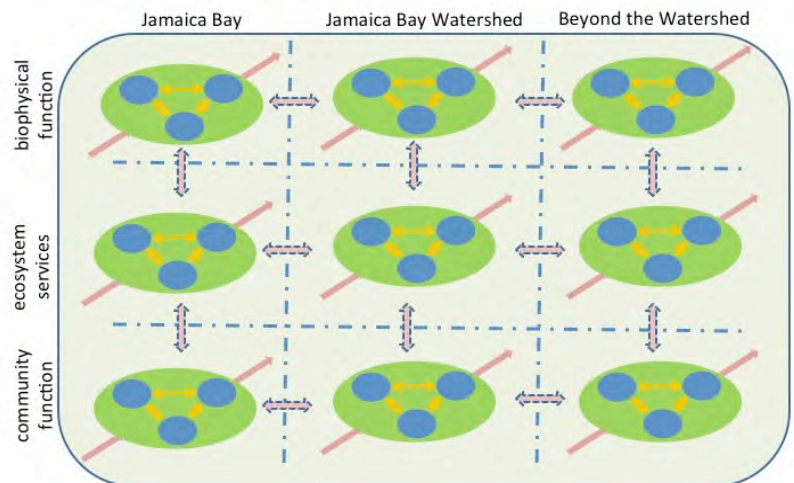


Figure 3. JBSRC Mission Goal and Resilience Analysis and Practice.

The application of the RAP framework across the spatial and topical settings will focus on deriving science-based results on resilience conditions and dynamics, especially those that reveal opportunities for promoting resilience of ecologically and socially beneficial states. In time, the application of the Center results will increase the resilience of the Jamaica Bay ecosystem and community.

We believe it is crucial to view the prehistoric, colonial, and modern evolution of Jamaica Bay through the lens of ecological resilience theory, examining known historical stresses retroactively in light of system response. This goal will be linked to the development of a deep and thorough understanding of the current ecosystem functionality of the Bay. These two research efforts will then be combined with additional knowledge collected on stressors to make possible reliable predictions about the future responses of the Bay.

(2) Studying Fundamental Nature of Resilient Systems

Jamaica Bay and its watershed provide an invaluable, internationally significant research opportunity to study and analyze the function and structure of coupled human-natural urban ecosystems. Critical advantages for the promotion of cutting-edge research will be leveraged by JBSRC. These advantages include: (1) rich and detailed data on the condition of the Bay and its environs (although more is needed); (2) established scholarly expertise on Jamaica Bay conditions, dynamics, and usages, demonstrated by CUNY researchers and Center partners; (3) a highly engaged set of decision-makers and stakeholders within the region; and (4) a series of ongoing policy initiatives for which the impacts can be evaluated and studied, perhaps within an informative adaptive management framework.

Together, these factors will allow Center-affiliated researchers to test hypotheses on the Bay's changing ecological structure and function, the dynamic character of the coupling between human and natural systems, and the types of resilience practice protocols that are most effective. New York City's PlaNYC efforts and its related activities present an excellent science and policy environment for examining questions regarding ecosystem services and urban sustainability. The City's Green Plan and the promotion of increased water infiltration and enhanced hydrologic

function allow for the re-imagining of Jamaica Bay and its watershed as a system with increasing natural function. Understanding how a transition can occur from a resilience perspective, and the ways in which the resilience practice protocols can be translated to other urban ecosystems, will be a singularly important contribution of the Center.

(3) Resilience Practice and Sustainability Management

The Center will lead efforts to convert fundamental research of ecosystem resilience into management actions that transform and enhance the resilience of Jamaica Bay and other urbanized estuaries. The Center will lead efforts to pioneer management strategies that are holistic and integrate the complexity of the coupled natural-human system. The Center will lead in the design of ecosystem restoration and transformation projects that enhance the resilience of the Bay, as well as develop robust metrics and

benchmarks for achieving and maintaining the desired resiliency. For example, one of our partners, Stevens Institute, conducts model experiments to study the consequences of various management practices on sea level in Jamaica Bay (Fig. 4).

Research Strategies to Assist Resilience Studies

(1) A Preliminary Focus on Fundamental Ecology

Jamaica Bay has had surprisingly little comprehensive or coordinated research performed on its fundamental ecology. The Bay has been the focus of many restoration projects by governmental agencies. These projects often gather information during planning phases, and may monitor the results after implementation, but the projects are rarely developed within a hypothesis-driven framework and are published in the gray literature, if at all. The Bay also has a modest amount of natural history information, available chiefly at only one site, the National Park Service Library. Only one somewhat comprehensive fundamental ecology study has been

JBSRC Advantages

- rich and detailed data on the condition of the Bay and its environs
- established scholarly expertise on Jamaica Bay conditions, dynamics, and usages, demonstrated by CUNY researchers and Center partners
- a highly engaged set of decision-makers and stakeholders within the region
- a series of ongoing policy initiatives for which the impacts can be evaluated and studied, perhaps within an informative adaptive management framework

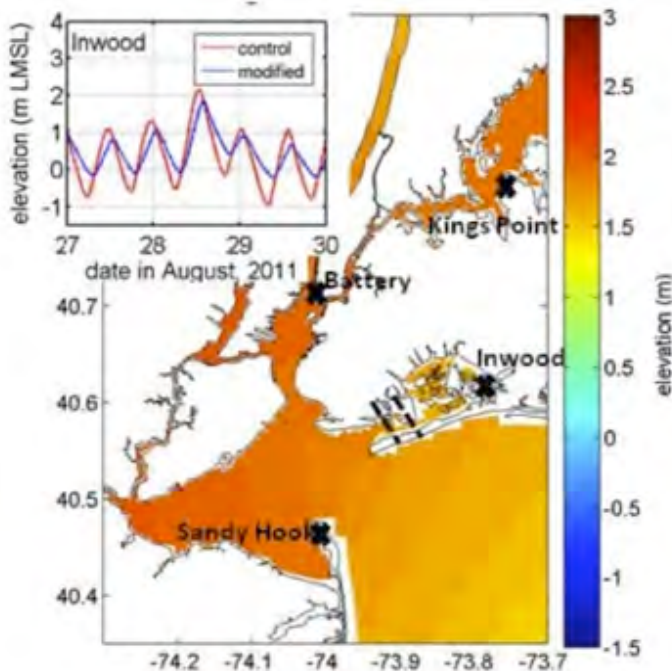


Figure 4: Stevens Inst. hydrodynamic model experiments are being used to study how channel depths and marshes affect flood elevations in Jamaica Bay. Shown here are results for the shallowing of the Jamaica Bay entrance channel from 7 m depth to a uniform 2 m depth. Dashed lines delineate the shallowed region. Large panel shows water elevations during Tropical Storm Irene. Inset panel shows water elevation time series, with normal bathymetry (control) and the shallowed bathymetry (modified).

carried out on the Jamaica Bay (the JABBERT Study by Columbia University and several partners) and few results from this study entered the primary literature because it ran for only one year. However, knowledge of this kind is absolutely key to understanding the Bay as a dynamic system.

The long-term studies of the Hudson performed by the Cary Institute of Ecosystem Studies provide an excellent model of a systematic attempt to understand the basic ecology of a regional system. Researchers there developed models and hypotheses and then systematically characterized the river-wide food web from nutrients through phytoplankton, zooplankton, invertebrates, and fishes. Their hypotheses were continually re-examined in light of new information. These studies were multi-year in most instances, to assess annual variation, with some studies verging on monitoring in an attempt to perceive longer-term signals in response to system drivers. Because of the work by the Cary Institute (and Stony Brook University, Cornell, and others), our understanding of how the Hudson “works”

as an ecosystem went from rudimentary to among the most sophisticated in the world, and our understanding has deepened as the ecology of the Hudson evolves in response to its many stresses. A parallel effort in Jamaica Bay is a high priority that will offer a wealth of benefits, from providing a context for studying resilience in theoretical terms to informing current efforts at habitat restoration.

(2) The Pulse of the Bay

Estuaries, the meeting places between inland freshwaters and the sea, are highly dynamic habitats. This dynamism is reflected at all possible temporal scales, from hourly, weekly, and seasonally, all the way through decades and centuries. To achieve a deep understanding of the workings of the Bay, it is essential to capture its variability on many measurable levels. Such information will help steer management decisions and influence research frameworks; it should also be as widely and easily available as possible. The variability can be captured using both: (2A) instrumentation for monitoring and forecasting, and (2B) other physical, chemical, and biological monitoring.

(a) Instrumentation for Monitoring and Forecasting

Many estuaries, including the nearby Hudson have become highly instrumented with various real-time and other remote sensing equipment that measure a number of ecologically relevant variables (e.g., pH, dissolved oxygen, salinity, etc). The Hudson River Environmental Conditions Observing System (HRECOS) obtains data every quarter hour from the Albany region to New York Harbor. Current and historical data are easily available to scientists and the public on their website.

Fortunately, the HRECOS system was in place during the two floods in 2011 as the result of hurricanes. HRECOS sensors tracked flows and sedimentation in the River to an astonishing level of detail and precision, showing, chronologically, how the hurricane effects rippled through the environment of the Hudson. Jamaica Bay will benefit from a similar site-specific sensitivity to Bay-wide phenomena, such as tidal surges, major storms, algae blooms, etc. By gaining knowledge at precise temporal and geographic levels, important site-specific differences in resilience can be parsed. The HRECOS partnership is also linked to the Urban Ocean Observatory at the

Center for Maritime Systems at the Stevens Institute of Technology. This sophisticated monitoring and modeling system makes web-available forecasts of variables such as tides, water levels, and current speeds, including for Jamaica Bay, however, the Jamaica Bay component will be greatly strengthened by the introduction of dedicated instrumentation into the Bay.

Additional equipment should be installed, for instance, VEMCO acoustic telemetry receivers to detect movements of anadromous fish, such as sturgeon and striped bass that use or may use the Bay. Presently, about 1500 such receivers have been placed along the Atlantic coast (but not in Jamaica Bay) by the Atlantic Coast Telemetry Program, and they have provided a wealth of new information on the life histories of these important fish populations.

(b) Other Physical, Chemical, and Biological Monitoring.

Shipboard monitoring of Jamaica Bay is conducted by NYCDEP as part of their Harbor-Wide Water Quality Survey. Water quality monitoring is also conducted by the NPS. The NYSDEC monitors fishes as part of their annual striped bass juveniles survey. New York State Cooperative Extension has sites in Jamaica Bay as part of its New York Horseshoe Crab Monitoring Network. The New York City Audubon Society manages bird counts carried out by both staff and volunteers. These and other ongoing surveys should be examined for data gaps to determine whether they should be expanded or augmented.

(3) Promotion of Adaptive Management

“Adaptive management” is often misconstrued as simply adapting management to change. However, researchers employ the phrase to describe attempts to perturb a system in one or more ways via management options in order to provoke system responses that will inform better management decisions. A corollary is management that includes a research component that promotes comparison among management options by trying more than one approach to a problem. Although the JBSRC will have no management authority, it can work with regulators to adopt useful adaptive management strategies.

(4) Ongoing Evaluation of Restoration Strategies

A wide range of ecosystem restorations are on-going

in the Bay. Restoration science now recognizes that there are a number of valid avenues for achieving habitat restoration. One is to aim for the original condition. “Rewilding” is returning a habitat to a state in which nature itself dominates. “Renaturing” can be thought of as imposing a partnership between natural functions and human uses. Many restorations confront difficult questions regarding establishing benchmarks and setting goals to achieve them. The Center will evaluate the numerous Jamaica Bay restoration projects in light of these questions, but also in light of resilience theory and the broader question of current and past ecological regime states. To maximize their benefits, restorations also require monitoring.

(5) Cooperation and Comparisons with Resilience Programs in Other Estuaries Worldwide

Resilience Theory has become a research topic in numerous settings worldwide. For this reason it is important that the JBSRC maintain close working relationships with selected national and international partner organizations that are performing relevant research in order to share findings and to make potentially informative comparisons. Cornell University has a Memorandum of Understanding with Stockholm University to build collaborations between the Stockholm Resilience Centre and the Cornell Civic Ecology Lab; partners on this proposal will be able to draw on this collaboration to apply resilience conceptual frameworks to science and education efforts at the JBSRC. The Stockholm Resilience Centre is an internationally recognized, transdisciplinary, research center that advances the understanding of complex social-ecological systems to improve ecosystem management practices and long-term sustainability. Other potential partners include the Center for Sustainable Urban Systems within the Institute of the Environment at UCLA (Dr. S. Pincetl), the Global Institute for Sustainability at Arizona State University (Dr. C. Boone), and CSIRO Sustainable Ecosystems in Australia (Dr. B. Walker).

(6) Information Management

New research findings resulting from the Center’s activities will be published in journal articles, book chapters, and other academic venues. However, this information will also be disseminated through a public affairs office (PAO), via the press, internally-generated newsletters, a website, and audience presentations. The JBSRC PAO will in turn be responsive to public and press queries.

Much information on the Bay already exists in the NPS library and in agency files. The Jamaica Bay Research and Management Information Network (JBRMIN) is an ongoing effort by the Center for International Earth Science Information Network (CIESIN) of Columbia University's Earth Institute, to collect, manage, and make available information on Jamaica Bay. To date, JBRMIN contains a rapidly expanding collection that includes an electronic bibliography with more than 1200

citations, maps, records of public events, and data from the two CUNY-led Bioblitzes. The JBSRC will benefit from continued alignment with CIESIN in this effort.

(7) Resilience Workshops and Assessment

Contemporary resilience theory is not widely understood by resource managers. JBSRC will conduct workshops for managers to expose them to resilience theory to enable them to participate productively in resilience assessments for the Bay. Multiple workshops will be essential to understanding the history and conditions of the Bay within a resilience science framework. Well-vetted resilience assessment protocols now exist to accomplish this critical task.

Student Participation through Fellowships and Internships

Student involvement through fellowships and internships is critical to building expertise on Jamaica Bay. A fellowship program will (1) introduce students to the Bay, potentially fostering long-term interest and commitment to it, (2) train students in estuarine research, (3) serve as a pilot for larger projects, and (4) result in a wealth of new information at a relatively low cost, every year. We envision an annual program modeled after the Tibor T. Polgar Fellowships Program of the Hudson River Foundation in partnership with NYSDEC. The Polgar Program funds eight undergraduate and graduate students for summer projects. Their results are presented at an annual symposium and in a published report. Many projects from this highly successful program are later published in

the primary literature. Similar internships (paid or unpaid) will be based at the Center but most will be sought at governmental agencies and NGO's that have projects on the Bay.

Education and Knowledge Dissemination for Resilience in Social-Ecological Systems

The JBSRC will view education and knowledge dissemination as processes that affect resilience and

contribute to changes in the urban ecosystem. To this end, the JBSRC will engage in four initiatives. The JBSRC will (1) develop new formal (e.g., curricular) and informal (e.g., public exhibits) educational tools that incorporate state-of-the-art theory in ecosystem

function and resilience, (2) promote and facilitate the growth of place-based and service learning opportunities, (3) foster research on the role education and knowledge dissemination play in supporting urban sustainability and ecosystem resilience, and (4) extend the research.

(1) Development of New Education Tools

Collectively, the JBSRC partners educate a large percentage of residents in the Jamaica Bay watershed through existing formal and informal education programs. These programs are intended for K-12 students as well as graduate and undergraduate students, and many also target the general public. The JBSRC will build on the partners' programs by developing new educational tools that focus on understanding urban ecosystem resilience. Locally, this initiative will target NYC public schools, public programming at the NY Aquarium, programs at local colleges and universities and additional informal education venues.

(2) Place-based and Service Learning

Partner programs such as the Global Learning and Observation for the Benefit of the Environment (GLOBE) at Queens College and the Park in Every Classroom (PEC) at Gateway National Recreation Area are effective in immersing local students in their local urban ecosystems while also meeting specific education

JBSRC Education Initiatives

- develop new formal (e.g., curricular) and informal (e.g., public exhibits) educational tools that incorporate state-of-the-art theory in ecosystem function and resilience
- promote and facilitate the growth of place-based and service learning opportunities
- foster research on the role education and knowledge dissemination play in supporting urban sustainability and ecosystem resilience
- extend the research

goals. The JBSRC will build on these programs by actively developing research-based education opportunities for students and coordinating citizen-science projects in Jamaica Bay and the surrounding watershed.

(3) Research on Education for Resilience

Understanding the role of education and outreach on system resilience will require novel and long-term research initiatives and assessment tools. The JBSRC will engage researchers and specialists in assessing the effectiveness of education initiatives in meeting education goals. The outcomes will include a general framework for defining the education function of Figure 1 and measuring the impact of education and outreach on ecosystem resilience using Jamaica Bay as a model system.

(4) Informing and Extending the Research

Extending the Center's research findings to Jamaica Bay decision-makers, such as agencies, residents, businesses, and community groups will be key to the success of the Center. The Center's leadership will also draw upon local knowledge and information when formulating its research agenda. This is a necessary and effective way of gaining community trust in the science being developed by the Center. In addition to these functions, extension professionals perform applied research with community partners, thus producing an integrated form of knowledge development and transfer into the local community that will be imperative for achieving resiliency on multiple levels. The JBSRC will harness the expertise in extension brought by the Cornell Cooperative Extension and New York Sea Grant Extension to integrate the research of the Center with the community. And in turn, the extension professionals will inform the research community with the knowledge gaps and information needs of the local community groups.

Engagement with Non-Governmental and Advocacy Organizations

Integral to the mission of the JBSRC is collaboration of non-profit and other local organizations working alongside the partnership's leading institutions. They bring a unique and necessary knowledge of the system, which Center researchers will consider when designing research priorities.

Collectively, these non-profit organizations have expertise and decades of experience in research, monitoring, management, advocacy, education, public engagement and outreach, and reach hundreds of volunteers, and thousands of residents, students and respective organization members. They are committed to addressing the science and resilience needs of Jamaica Bay area residents and communities, and the broader urban ecosystem, and have demonstrated their capacity through existing partnership projects with academic and government agencies and on their own. They range from large research organizations such as the American Museum of Natural History and NY Hall of Science, umbrella organizations such as the Metropolitan Waterfront Alliance, and community and member-based organizations such as NYC Audubon, American Littoral Society, Jamaica Bay Guardian, NY Harbor School, and Rockaway Waterfront Alliance. Along with these, there are numerous civic, environmental, education and faith-based organizations that contribute to protection and management objectives. The JBSRC will work with these organizations to meet mutual goals toward sustainability and vibrancy of Jamaica Bay and surrounding areas.

Philosophy of Engagement

As an urban estuary with numerous environmental concerns, Jamaica Bay is studied, monitored, regulated, protected, and restored by a remarkable number of governmental agencies, academic institutions, and non-governmental organizations. These entities often work together but also are at times in disagreement about issues concerning the Bay. Clearly, the JBSRC will need to listen to the concerns of all stakeholders and assist them directly when possible. However, in order to best serve the broader Jamaica Bay community, the Center will be a fully independent, non-advocacy institution and will remain neutral in conflicts. By striving to provide the best science possible on Jamaica Bay to all interested parties, the societal benefit of JBSRC will be maximized, while preserving its functional integrity. The Center will also actively assist in developing solutions to problems by serving as a convenor of the relevant parties.

Partnership and Governance Structure

The proposed partnership is designed to ensure representation for all member organizations and allow for the efficient and responsive operation of the Center. The Center Director will consult with a JBSRC Coun-

cil, which will be composed of representatives from each partner organization. The City University of New York (CUNY), Columbia University, Cornell University/New York Sea Grant, NASA Goddard Institute for Space Studies, Rutgers University, Stony Brook University, Stevens Institute, and the Wildlife Conservation Society will all have seats on the Council. In addition, The New York City Department of Parks & Recreation and the National Parks Service will hold ex officio positions on the Council.

The primary function of the JBSRC Council is to advise the JBSRC Director and a designee representing CUNY leadership. The Council will be able to vote on a number of issues including: (1) the allocation of external general operating funds; (2) the addition of new partners; (3) the removal of partners; and (4) general research and development plans. The JBSRC Director will be a CUNY employee and will be appointed by CUNY in consultation with the JBSRC Council. The Director will report to the CUNY administration regarding financial considerations, and to the Council regarding programmatic decisions and direction of the JBSRC. (An interim director will be appointed by CUNY until a permanent Director can be identified and hired.) CUNY will also contribute administrative personnel to staff the Directorate. In addition, there will be an External Advisory Committee comprised of representatives from the NYC government, the National Park Service, and interested educational and cultural institutions.

The JBSRC Director will appoint a Business Manager and a Program Coordinator for the Center. As the Center becomes more fully established Associate Directors will be hired to oversee the following necessary operational areas: (1) Research, (2) Extension, Education & Outreach, (3) Facilities and Operations, (4) Data Management & Information, and (5) Development. Each of the Associate Directors will be an appointment of the major university partners on the JBSRC Council (Columbia University, Cornell University/NY Sea Grant, Rutgers University, Stony Brook University, Stevens Institute of Technology, and the Wildlife Conservation Society). Administrative and research positions will be open to all member organizations on the JBSRC Council.

Funding

All of the partner academic institutions have committed to providing the faculty researchers and staffing necessary for the oversight and operation of the JBSRC. The CUNY administration and the participating CUNY colleges have committed to hiring a Director, providing a full-time faculty line, and to providing financial resources for essential staffing. The major university partners (Columbia University, Cornell University/NY Sea Grant, Rutgers University, Stony Brook University, Stevens Institute of Technology, and the Wildlife Conservation Society) will provide funding for the Associate Directors appointments. Two of the partner institutions (Stony Brook University and Columbia University Earth Institute) have committed to providing two faculty lines. Brooklyn College will provide office space for the Center's initial start-up phase. Cornell Cooperative Extension has offered to allocate a portion of an Extension Associate's time to working with Center partners on the creation of a coordinated extension, outreach and education plan. Cornell will also approach the Atkinson Center for a Sustainable Future to obtain funds to support this same extension effort. NY Sea Grant's (NYSG) first-year contributions to the Jamaica Bay Center will include 2 months of senior staff time to assist with coordination, management and outreach. NYSG will also provide up to \$20,000 to support the development of the research and extension agenda and priorities, and to support specific research or NYSG extension projects, which could lead to additional outside funding.

In addition to these commitments, the partner organizations will work to define other sources of funding beyond the partner commitments and the funds potentially available from the current Jamaica Bay Institute. Federal funding agencies, such as NOAA and EPA, will likely look favorably upon the kind of collaborative and coordinated research activities that are being conducted by the JBSRC. The Center will also be in a good position to submit a viable proposal for an NSF-sponsored center for Long-Term Ecological Research. We believe the Center, with the vision that we have proposed, will also be attractive to private grant-making foundations that want to improve life in coastal cities in the U. S. and around the world. The JBSRC Council will be consulted on the expenditure of grant funding.

Five-Year Timeline

The first item to be accomplished will be to appoint the Interim Director. The Interim Director will (1) establish the Center's Office, (2) commence a national search for a Director, (3) initiate a capital campaign to establish an endowment, (4) coordinate funding from the existing partners and establish support for the permanent Center Directorate, (5) establish the "brand" for the Center, and (6) establish other immediate research goals in consultation with the JBSRC Council. We expect that by Year 2 a permanent Director will be in place and the Center's Directorate and Council will be operative. During this year, the Director will initiate planning for the Center's building, probably at Floyd Bennett Field. Also during Year 2, the Director will engage in architectural planning, in consultation with the Center's Council, hire a Development Officer, and hire his/her Associate Directors. The Development Office will initiate a fund-raising campaign to establish an endowment for the Center and secure funds for the new building by Year 5 of the project (see below). The External Advisory Committee will be formed within the first 2 years to ensure local community support of the Center and its activities. In Year 2, workshops and/or conferences will be held to generate a detailed, hypothesis-driven, research agenda for the Center, and a coordinated plan for extending that research to decision-makers, businesses, and the public. By the end of Year 2, we will have designed a newly instrumented monitoring network and observing plan for the Bay and its watershed, for implementation in Year 3. Year 4 will see the full research program implemented. The 5-year goal is to have a functioning, self-sustaining, research, extension, and education center.

Center Facilities

We propose to base the Center facilities in a new building on Jamaica Bay at Floyd Bennett Field, with Riis Landing as a secondary potential site. The building will be designed to be a "green building." Center partners will have access to the JBSRC facilities for hosting Center-related events. Other material facilities such as large scale testing, experimentation and data gathering equipment, including vessels, will be identified and made available either from partners or via outside funding sources. We see the Center itself as being the corner-stone for further development near Jamaica Bay, and indeed, as providing the scientific support for managing development for resilience and sustainability.

Partner Profiles

All potential partners for the consortium are well-established, fiscally stable organizations. Below is a brief description of potential partners and their relevant science and education assets and linkages.

City University of New York (<http://www.cuny.edu/>). Relevant Research and Capabilities: Baruch College has a project to study the ecosystem services anticipated with bivalve restoration in Jamaica Bay. Brooklyn College's Aquatic Research and Environmental Assessment Center (AREAC) and the Environmental Science Analytical Center (ESAC) are engaged in water quality research, ecosystem response to climate change, and analyses of urban soils. City College houses the Cooperative Remote Sensing Science and Technology Center (CREST), and includes The Environmental CrossRoads Initiative, The Coastal Urban Environmental Research Group and The Center for Water Resources and Environmental Research. The College of Staten Island has faculty studying marshes, the movement of metals in aquatic food webs and shorebird ecology, and houses CUNY's supercomputer (Cray XE6m) facility. Hunter College faculty are currently studying storm surges and climate impacts to the City's water supply. Kingsborough Community College has faculty studying the biota of Jamaica Bay, and also has a marine facility and education program. Queens College is involved in the Riverkeeper's "Swimmable Hudson" project, and has other faculty involved in aquatic biology, hydrology, the management of NY Harbor, and, notably, the environmental history of Jamaica Bay. York College has faculty studying trace metal distributions in Jamaica Bay's watershed, and how climate change and pollutants affect the adaptation of fish. In the social sciences, the CUNY Institute for Sustainable Cities (CISC) seeks to study and promote sustainability practices throughout NYC. CISC's Urban Sustainability Extension Service (USES) and The CityAtlas are the Institute's initiatives to bring CUNY and Community partners together to develop neighborhood-scale sustainability initiatives. Existing Linkages: In numerous grants, CUNY, through its Senior and Community Colleges has maintained strong ties to the National Park Service, NYC Department of Environmental Protection, NYC Office of Long Term Planning and Sustainability, NYSEDA, plus grants from the National Science Foundation and the Department of Energy.

Columbia University Earth Institute (<http://earth.columbia.edu>) includes Lamont-Doherty Earth Observatory [LDEO; <http://www.ldeo.columbia.edu>], Center for International Earth Science Information Network [CIESINS; <http://ciesin.columbia.edu>], and Center for Environmental Research and Conservation [CERC; www.cerc.columbia.edu], among others. Relevant Research: Researchers at LDEO concerned about the reduction of marsh area began a physical, chemical, geological, and biological study in 2000, with many components that have continued into recent years (see: “Integrated Reconnaissance of the Physical and Biogeochemical Characteristics of Jamaica Bay” (<http://www.ldeo.columbia.edu/res/div/ocp/-projects/jamaica-bay.shtml>)). Paleoecological perspective was explored with sediment cores from marshes. Microbial Ecology of the Hudson River Estuary project conducts water quality sampling of the Hudson River estuary, with partners from CUNY Queens College and Riverkeeper. The Center for Rivers and Estuaries studies various aspects of rivers and estuaries world. CIESIN has the Jamaica Bay Research and Management Information Network a growing community-driven knowledge base of past, present, and future activities in Jamaica Bay. Existing Linkages: The Earth Institute Outreach office raises awareness and educates the citizenry about Jamaica Bay and the impact of human activities on its long-term sustainability. The office works on improving coordination among existing groups involved in Jamaica Bay-related education activities.

Cornell University/Cooperative Extension.

Relevant research: The Department of Ecology & Evolutionary Biology has worked on environmental stressors to coastal marine ecosystems for more than 30 years. The Department of Natural Resources uses population genetics to inform aquatic animal management and restoration, in coastal estuaries, including Jamaica Bay. Ongoing efforts include the Jamaica Bay Eelgrass Restoration Project, underway in three locations in the Bay. Cornell University’s Human Dimensions Research Unit utilizes applied social science research to inform community engagement in Jamaica Bay. Additionally, Cornell Cooperative Extension developed a community engagement toolkit designed for urban natural resources professionals and educators. Cornell’s Civic Ecology Lab has done extensive work linking resilience and education at the K-16 level. Cornell also houses the Northeast Regional Climate Center (NRCC), one of six federal centers that dis-

seminate climate data, data products and decision tools to regional stakeholders. Cornell Institute for Resource Information Sciences provides training for youth-led community mapping with a curriculum exploring landscape change over time. Existing Linkages: Partners include the Hudson River Foundation, that collaborated with Cornell and other institutions and agencies on “Target Ecosystem Characteristics” (2007) for the Hudson/Raritan Estuary. The restoration genomics project cooperates on the Oyster Restoration Research Project with 19 diverse agency and NGO partners including NY/NJ Baykeepers and citizens involved in oyster gardening programs. Others partners include the U.S. Forest Service, National Science Foundation, Ittleson Foundation and Hudson River Estuary Program, and Suffolk County’s Eelgrass Program. As part of its Extension Program, CCE NY Extension Disaster Education Network (EDEN) links Extension educators and emergency managers from across New York, to share resources to enhance resilience and reduce the impact of disasters. Locally Cornell Extension has linkages to the NYC Housing Authority, the USDA and EPA, NYS Dept of Health, faith-based networks and institutions, and community groups among others. Cornell partners with many NGOs, for example, Metropolitan Waterfront Alliance, NYC Audubon, Rockaway Waterfront Alliance, American Littoral Society, and Jamaica Bay Guardian.

NASA Goddard Institute for Space Studies (<http://www.giss.nasa.gov>). Relevant Research: GISS is part of NASA’s Goddard Space Flight Center, a world-leader in remote sensing observations, critical for climate analysis and for assessment of climate impacts on coastal areas, including ecosystems such as Jamaica Bay. The Consortium for Climate Risk in the Urban Northeast (CCRUN), funded under NOAA’s Regional Integrated Sciences and Assessments (RISA) program, serves stakeholder needs in assessing and managing risks from climate variability and change. It is the only RISA team with a principal focus on climate change adaptation in urban settings. CCRUN is designed to address the complex challenges associated with densely populated, highly interconnected urban areas, such as intense coastal development, urban heat island effects, air quality, settlement along inland waterways, overlapping institutional jurisdictions, integrated infrastructure systems, and fragile socio-economic communities. Existing Linkages: In addition to NOAA, GISS works with the Stevens Institute to integrate sea level

rise and precipitation projections into storm surge modeling of Jamaica Bay and the broader region.

New York Sea Grant (<http://www.seagrantsunysb.edu/>) New York Sea Grant (NYSG) is a statewide network of integrated coastal research, education, and extension that brings a number of important resources to the JBSRC. NYSG annually supports about \$1M of important coastal research at New York Universities statewide, including nearly \$500k for research involving Jamaica Bay in the last decade, and over \$1.2M total in the New York City Metropolitan area during that time. (When matching funds are included these amounts approach \$700k and \$2M.) As a SUNY-Wide Institute and a component of Cornell Cooperative Extension, New York Sea Grant is well-connected with New York State Agencies (DEC, DOS, ESDC, and Agriculture & Markets), Federal Agencies (NOAA, EPA, USACE, USGS, NPS, and USFWS), the National and State Estuary Programs around Long Island and New York City (Long Island Sound Study, Peconic Estuary Program, NY-NJ Harbor Estuary Program, and the South Shore Estuary Program), as well as many other New York stakeholders. Finally, its extension program on Long Island and in the New York City Metropolitan area includes six staff members experienced in outreach and education in a variety of coastal issues important to Jamaica Bay (coastal processes and hazards, fisheries, storm water, and K-12 STEM education). NY Sea Grant was a major sponsor of two past research conferences on Jamaica Bay: Jamaica Bay's Disappearing Marshes; March 3, 2004 at the New York Aquarium; in collaboration with the Aquarium and the Gateway National Recreation Area of the NPS (proceedings document compiled, edited, and designed by NYSG); and, State of the Bay: Past, Present, and Future—Revisited; October 20-21, 2011 at Brooklyn College; in collaboration with Brooklyn College (and AREAC), NYSG, the NPS, and the NYCDEC.

Rutgers University (<http://marine.rutgers.edu>). Over the past 5 years, Rutgers Institute of Marine and Coastal Sciences (IMCS) has received over 300 grants totaling in excess of \$64 million from a wide variety of state, federal and private sources (e.g., the National Science Foundation, the National Oceanic and Atmospheric Association, the National Park Service, NJ Department of Environmental Protection, the U.S. Fish and Wildlife Service, the Gordon and Betty Moore

Foundation). These and other entities are certainly potential sources that Rutgers is willing to pursue in support of the proposed partnership structure. In the late 1980s the NY/NJ Port Authority provided \$13 million for the construction of our IMCS building on Rutgers New Brunswick campus, an entity focused on marine and coastal research, educational and outreach initiatives. IMCS operates several research facilities and programs in New Jersey, including Jacques Cousteau National Estuarine Research Reserve, The Center for Urban Restoration Ecology (CURE), and the Rutgers Climate and Environmental Change Initiative. Rutgers has been active in salt marsh biology, restoration efforts, shellfish ecology (NY SeaGrant), wetland restoration (in Jamaica Bay, with the Army Corps of Engineers), and shoreline stabilization. Rutgers faculty helped to prepare the master plan for the new Brooklyn Bridge Park. Existing linkages include American Littoral Society, the Nature Conservancy, the Dupont Clear Into the Future Program, the Partnership for the Delaware Estuary, the Hudson River Foundation, South Jersey Port Corporation, Sustainable New Jersey, and the Brooklyn Botanic Garden.

School of Marine and Atmospheric Sciences (SoMAS), Stony Brook University (<http://www.somas.stonybrook.edu/>). Relevant Research: Current activities of direct relevance to Jamaica Bay include studies on marine pollution and sewage treatment options, tidal wetland loss and the development of TMDL's for the Forge River and Hempstead Bays. In recent years, SoMAS has developed targeted programs propelling the environmental recovery and restoration of stressed coastal systems in the region, e.g., the Shinnecock Bay Restoration Program and the Great South Bay Ecosystem Study, as well as the susceptibility of New York City and the surrounding urban area to storm damage (Storm Surge Research Group). SoMAS possesses extensive scientific and technical facilities, equipment and instrumentation necessary to conduct field and laboratory research, as well as robust capabilities for information and data acquisition, storage and management, including access to the 100-teraflop IBM Blue Gene supercomputer. Existing Linkages: SoMAS has worked closely with international, federal, state and local governmental agencies on issues of common interest and concern. It is a member of the Marine Disease Pathology and Research Consortium, along with NY Sea Grant and Cornell University, to understand disease in wild and cultured populations of marine

animals in New York's waters. SoMAS is the administrative center for the New York Marine Sciences Consortium. The Director of SoMAS's Living Marine Resources Institute (LIMRI) serves as chairman of the NYS DEC's Marine Resources Advisory Council. The Director of the Waste Reduction and Management Institute (WRMI) chairs the Suffolk County Council on Environmental Quality and the Technical Advisory Committee of the EPA Long Island Sound Study. The School also has linkages with an assortment of non-governmental partners. SoMAS developed and conducted environmental education programs with the Ward Melville Heritage Organization, a local community development organization in the Stony Brook area. The Associate Director of SoMAS chairs The Nature Conservancy's Bluepoints Bottomlands Council, charged with developing a management plan to restore hard clam populations and seagrass meadows on the Conservancy's underwater lands in Great South Bay.

Stevens Institute of Technology (<http://stevens.edu>)
Relevant Research: Stevens researchers are already leaders in urban hydrology, urban waterfront design, and quantification of benefits as well as physical stresses on urban shorelines. Stevens has a history of providing ocean observations and forecasts for the region's waterways, most visibly through our NYHOPS (<http://stevens.edu/maritimeforecast>), but also as a major partner in HRECOS (<http://www.hrecos.org/>) and more broadly MARACOOS (of IOOS; <http://maracoos.org/>). Stevens also is part of a large NOAA-RISA funded consortium studying climate related risks to NYC Current projects include "Sustainable shorelines along the Hudson River Estuary," collaboration with NYS-DEC, funded by NOAA-NERRS, "The Hudson River Flood Hazard Decision Support System – Accurate Modeling of Flood Zones for Combined Sea Level Rise, Storm Surge, and Rain" funded by NSERDA, "Inundation Hazard Assessment for New York City from Hurricane Storm Surge, Rainfall, and Climate Change" funded by NASA/GISS, and "Building resilience to storm surges and sea level rise: A comparative study of coastal zones in New York City and Boston" funded by NOAA-COCA. Existing Linkages: In addition to the above projects, Stevens has links with NYC Parks and Recreation and the Army Corps of Engineers.

Wildlife Conservation Society (<http://www.wcs.org/>); and the New York Aquarium (<http://www.nyaquarium.com/>) Relevant Research: WCS scientists are undertaking historical studies of New York City's natural communities through the Mannahatta and Welikia projects (www.welikia.org), and helping New Yorkers visualize their ecological future in Mannahatta2049. WCS's New York Seascape program, based at the New York Aquarium in Coney Island, is designed to restore healthy populations of threatened marine species and their habitats in the New York Bight. The Aquarium provides an unprecedented platform to educate more than 4 million visitors per year about the health and conservation needs of Jamaica Bay. Existing Linkages: The Aquarium has connections with Coastal America as an acclaimed Coastal Ecosystem Learning Center. WCS is working with NYC Parks Department Natural Resources Group, NYS Department of Environmental Conservation, National Park Service, CUNY-Queens College, New York University, Stony Brook University, Columbia University, and Stevens Institute of Technology, and is part of the NY Oceans and Great Lakes Coalition. WCS is a partner, and serves an advisory role to New York City's new Natural Areas Conservancy and their citywide ecological assessment.

Concluding Statement

The proposed Jamaica Bay Science and Resilience Center (JBSRC) will contribute significantly to our understanding of urban estuaries in the context of resilience theory and application on a regional to international scale. A core group of regional academic research and educational institutions with expertise in urban estuaries, the Jamaica Bay, and resilience science have put considerable thought and planning into providing a thematic and logistically sound vision in response to the RFEI. The proposed JBSRC brings together the strengths and resources of world-class academic institutions working in the New York City metropolitan area—the City University of New York, Columbia University, Cornell University, Rutgers University, and Stony Brook University. The Center also combines the strengths of New York Sea Grant, a program established by the State University of New York and Cornell that supports coastal research, education and extension throughout New York, and the Wildlife Conservation Society, which brings superior conservation, landscape ecology, and outreach capabilities. Each institution has conducted important research on the New York Harbor and specifically on Jamaica Bay, and brings complementary expertise, technologies and resources to this partnership. Together, the efforts of this group and its numerous research, agency and community partners will make the JBSRC a first-class consortium and research facility that will both build on past work and coordinate future research and outreach activities. The Center will become a natural gathering place for urban ecosystem and sustainability researchers from around the globe.

Action Discussion Item #3

PRP Report and Other Reporting Issues:

- A. NYSG 2012 Performance Review Panel (PRP) Report
- B. NYSG Management Team Letter to Staff about PRP Report
- C. NYSG Director's Letter to National Sea Grant Office About PRP Report

NEW YORK SEA GRANT
2012 Performance Review Panel
Comments by Focus Area



Performance Review Panel Evaluation Summary

In October 2012, the first Performance Review Panel (PRP) evaluation was held in Silver Spring, MD to assess each Sea Grant program's progress towards achieving its strategic plan and its impact relative to federal investment between 2008 and 2011. Five panels of focus area experts met to review program performance in Healthy Coastal Ecosystems, Hazard Resilient Coastal Communities, Sustainable Coastal Development, Safe and Sustainable Seafood Supply, and the Marine/Coastal Literacy cross-cutting area. The Sea Grant Program is approximately halfway through the first four-year cycle, making this a transitional PRP. In the future, PRPs will occur about two years after the completion of the programs' four-year plans.

As the first time all Sea Grant programs were evaluated concurrently by the same group of individuals, this transitional PRP represents a major step for the National Sea Grant College Program and is a key evaluation component of the Planning, Implementation and Evaluation (PIE) process.

New York Sea Grant's ratings for each focus area are:

Focus Area	Progress towards Plan	Overall Program Impact	Focus Area Rating	Estimated Level of Effort (%)
HCE	1.0	1.1	1.1	42%
HRCC	2.0	2.4	2.2	12%
LIT				
SCD	1.5	0.0	0.8	23%
SSSS	2.8	2.0	2.4	23%

Based on the Focus Area ratings weighted by the level of effort, New York Sea Grant's Overall Program Performance Rating is a **1.4**.

Overall Program Performance Rating

Each PRP working group rated two areas – Progress towards Plan and Overall Program Impact – and averaged the ratings to generate a Focus Area Rating. The Focus Area ratings were

combined using a weighted average – the proportion of funding resources allocated to each of the national focus areas – to produce the Overall Program Performance Rating.

Panelists were asked to use a baseline rating of 2 for both progress towards the plan and overall impact, which could change based on the materials presented. The ratings criteria for each section were as follows:

Progress Towards Program Plan

Highest Performance (4) – exceeds expectations by an exceptional margin in most areas/aspects

Exceeds Expectations (3) – by a substantial margin in some areas/aspects

Successful (2)

Below Expectations (1)

Unsuccessful (0)

Overall Program Impact

Highest Performance (4) – particularly outstanding scientific or societal contributions on the local, regional or national level relative to their level of Sea Grant federal investment

Successful (2) – an acceptable, but not unusual, level of performance relative to their level of Sea Grant federal investment

Below Expectations (0) – a level of performance substantially less what would be expected relative to their level of Sea Grant federal investment

Next Steps

The National Sea Grant Office (NSGO) Annual Review that follows this PRP evaluation will be expanded to include a performance assessment based upon the PRP ratings. If a program believes the PRP has made a factual error in reviewing the program materials, the Sea Grant Program Director has the opportunity to submit a memorandum to the Program Officer by February 20, 2013 for consideration during the NSGO Annual Review. This NSGO Annual Review finalizes Program ratings and will be used to allocate merit funds. A final evaluation package, which includes the Site Visit Report, the PRP reports and the outcome of the NSGO Annual Review, will be sent to the Sea Grant Program.

Future Evaluation

To ensure the Sea Grant programs were adequately evaluated and improve this process in the future, at the end of the PRP review we asked the Panelists for their comments and recommendations on the process. We are also planning to solicit feedback from the Sea Grant Association and National Sea Grant Advisory Board. We will use those comments and recommendations to streamline and improve the PRP process for 2015.

Conclusion

If you have any questions about this process or about your ratings, please contact your Program Officer.

Healthy Coastal Ecosystems

Progress Towards Plan - Is the Program making significant progress towards their previously approved Program Goals, Program Performance Measures, and/or Program Objectives in this focus area?

Rating: 1.0

Explanation for the rating:

Based upon a review and discussion of the PRP materials, the panelists determined that New York Sea Grant is not meeting expectations with regard to performance towards their healthy coastal ecosystem goals.

Progress towards plan was difficult to determine from the provided material, which in many cases did not provide sufficient information to judge the extent to which reported activities addressed the NY SG plan's goals.

For example, the NY SG's first goal in the Ecosystems focus area was "Improved Coastal Water Quality". Several impact statements, especially those dealing with education efforts, clearly show at least that constituents are being educated and motivated to behave in ways conducive to improving water quality.

The outreach campaign related to the safe disposal of pharmaceuticals was also clearly relevant to this goal. The campaign was reported as being "effectively launched", though it wasn't clear here what was meant by effective (did it include the impact of the campaign on water quality?), or how that effectiveness was measured.

But most other impact statements in this section did not make it as clear how the described activity was contributing towards improved quality of New York waters--either the link to water quality was not well explained, or the location of the activity was outside of the waters targeted in New York's plan.

Overall, the number of reported research impacts seemed small for the size of NY SG's ecosystem effort, and less than the number of education or outreach impacts.

A few research impacts were impressive, such as number 15695, "*Freshwater Adaptation and Early Invasion of Viral Hemorrhagic Septicemia Virus into the Great Lakes Basin*", where a screening tool for VHS was developed that resulted in NY Dept. of Environmental Quality being able to cut the time of fish population surveys for VHS by over 90%.

More research activities were described as "accomplishments" rather than "impacts", often meaning that the work was ongoing or that the full impact of the work had not been felt yet.

In a majority of these accomplishment statements, it wasn't clear how the research would be used to make an impact towards meeting a Strategic Plan goal, or in some cases even what the anticipated outcome or strategic purpose of the research was. This was seen, for example, in the statements about geochemical budgeting of dissolved gases in LIS hypoxia (well described, but how will this contribute?). All phytoplankton, eutrophication, zooplankton studies seem to be underway with no 2-year assessment of their success. HAB work is explained, but the expected outcome or relevance to management decisions is not described.

And many of the entries in the "impacts and accomplishments" section were simply too sketchy, at only a few lines long, to be informative for purposes of this evaluation.

All research-related projects are lumped into two performance measures and are difficult to evaluate considering the breadth of programs on Long Island Sound and the Great Lakes. One research measure has been met but the other has not due to a retirement. Education and outreach performance measures have been met or exceeded, but often they are nebulous and hard to document.

The level of performance described in the report is below expectations. This may be a reflection of insufficient attention to the review materials rather than lack of accomplishments towards meeting their strategic plan goals, but the materials are all the panelists have to base their evaluation on.

**Overall Program Impact - Considering the level of Sea Grant federal investment, is the Program making a significant contribution to science and technology in this focus area?
Considering the level of Sea Grant federal investment, is the Program making a significant contribution to society beyond the contribution to science and technology in this focus area?**

Rating: 1.1

Explanation for the rating:

New York Sea Grant is not meeting expectations with regard to overall impacts in the area of healthy coastal ecosystems relative to the size of federal investment.

NY Sea Grant research is addressing high priority issues related to healthy coastal ecosystems on the Great Lakes and in Long Island Sound. Many of the projects appear to be in early stages of implementation since only single paragraph descriptions are provided rather than the more informative format: relevance, response, results, and recap.

This made evaluation of contributions more difficult. Nonetheless, the number of complementary and potentially mutually reinforcing projects on LIS hypoxia and red and brown tide blooms offer potential to make significant contributions.

On the Great Lakes, research on Viral Hemorrhagic Septicemia (VHS) is highly relevant throughout the Great Lakes basin and in preventing and containing this fish disease in

aquaculture operations throughout the basin also. Invasive species research including the recent Great Lakes invader, *Hemimysis*, and control of coastal wetlands invader, *Phragmites*, has meritorious potential. Sub-lethal effects of PCBs on bird song and mating/nesting success are noteworthy as particularly innovative.

Often, though, it appeared either too early in the program cycle to determine the contributions of these research projects to science, engineering and society, or there was insufficient information in the report for evaluation of a project's impact.

Many impact statements described research results, but often there was no indication of how these results were translated to information used by the public or decision makers. Phrases in the impact statements like *"The results from this [sediment dynamics] project could help the management of nutrient levels and hypoxia in Long Island bays"* (no. 14592) offer tantalizing hints about the potential impacts of the research to the state of the science or to society, but give no clue as to whether those impacts were actually realized.

Perhaps there was a misunderstanding by NY SG on what was expected in impact reporting, but, while the program does have many research projects, the review materials did not convincingly demonstrate significant impacts from them.

Based on the information provided, panelists felt that although the potential existed for contributions to science by the program, the actual contributions to science reported by the program appear to be below a level commensurate with the federal financial investment.

New York is the only Sea Grant Program with coastal marine and freshwater responsibilities on Long Island Sound (LIS), Lake Ontario and eastern Lake Erie. Therefore, there have long been issues of balance in the program and challenges concerning being spread too thin. It also has a huge outreach and education challenge with a relatively long coastline on the Great Lakes, consisting of broad, rural stretches and substantial urban clusters, and the large and diverse urban/suburban population in New York City and Long Island Sound.

With that said, there has been substantial work conducted in education and outreach on important issues in both of their marine and freshwater regions. Examples include Long Island Sound mentor Teacher program, teacher workshops, and partnerships with marine educators. Specific outreach and education programs have addressed high-priority issues and target audiences, including preventing and containing diseases in aquaculture, ecosystem impacts of invasive species, effective stormwater management, clean and safe boating practices, and keeping pharmaceuticals and personal care products (PPCPs) out of the Great Lakes.

NY Sea Grant has been in the lead role for all of the education and outreach projects, and the area of impact for all of these programs is the regional service area. The number of people contacted with education and outreach activities has exceeded their performance measure target, but better descriptions of the impacts of these efforts would have been helpful. Perhaps it is too early in the cycle of implementing the 3-yr plan to expect results on social and

economic benefits of these activities, or once again is this just a function of lack of sufficient information in the report?

Some of the panelists had recent or historical experience with New York Sea Grant. They were aware of many positive impacts resulting from NY SG's work over the years, and thought it likely that similarly significant impacts were continuing to be felt. It was very frustrating for them not to be able to find more documentation in the review materials of these presumed impacts.

In conclusion, the NY SG program appears to be very active in all of the areas of research, education, and outreach that one might expect for a program of this size bordering on multiple water bodies with multiple issues. But the provided materials did not show the level of impact that would be expected from this activity level.

The main problem appears to be that the reporting, and perhaps the activities undertaken themselves, are insufficiently focused on outcomes. Some panelists would like to suggest to NY SG that the upcoming RFP process and the next strategic plan are opportunities for a more focused program with measurable goals, better documentation of those goals and alignment with the National Sea Grant Strategic Plan.

Hazard Resilient Coastal Communities

Progress Towards Plan - Is the Program making significant progress towards their previously approved Program Goals, Program Performance Measures, and/or Program Objectives in this focus area?

Rating: 2.0

Explanation for the rating:

Program objectives have been changed to performance measures with the approval of the National Sea Grant College Program Director. New York Sea Grant (NY SG) indicates it is on pace to complete most of the program performance measures, and two having already been accomplished. However, there is one performance measure that is delayed due to funding issues.

NY SG provided regional sediment management plans that were developed using a framework developed by NY SG and its partners. This is evident in NY SG's work in organizing regular meetings and workshops to address concerns associated with the use of offshore sand resource in erosion management projects. As a result of these workshops, agencies developed a proposal for a monitoring program that would allow a proposed multi-million dollar project to move forward. The USACE reprioritized regional sediment management objectives and the formation of a stakeholder workgroup to provide ongoing input to a \$5M project (Program Summary; pages 3-4).

NY SG also provided coastal communities with information on hazards via social media sites (6894), the East Coast Winter Storm Climatological and Forecasting Data Website (6642), and updated Atlantic Coast of New York Erosion Monitoring Program Website (15267).

It appears the other measures are on target to be met, especially the "5 models, methods, or scientific results that have been developed by NY SG research and extension to understand or respond to New York's coastal hazards" in the improvement of nearshore wave and rip current forecasts (6558); development of a 50-hr time horizon high resolution storm surge prediction model (6871); development of the East Coast Winter Storm Climatological and Forecasting Data Website (6642); update of the Atlantic Coast of New York Erosion Monitoring Program Website (15627); development of numerical model for the design of breakwater structures (6879); and development of a coupled hydrodynamic sediment transfer model (6876).

Significant accomplishments in support of the Program Goals and Performance Measures include successful training program on climate change literacy for extension agents and NWS staff that has empowered them to communicate the risks more effectively. Significant advances have been made at several levels in improving modeling of storm surge risks and for communication of those risks to constituents. Some of these models include:

- the ability to produce 50-hr time horizon high resolution coastal flooding and storm surge predictions that are being regularly visited by NWS forecasters as they coastal flooding watch alerts,
- creating a new web site that helps coastal emergency managers understand the potential impacts of a particular storm and improve their communication of the risks and planning of response, and
- development of a numerical model to assist in the assessment and design of breakwater structures.

Overall Program Impact - Considering the level of Sea Grant federal investment, is the Program making a significant contribution to science and technology in this focus area? Considering the level of Sea Grant federal investment, is the Program making a significant contribution to society beyond the contribution to science and technology in this focus area?

Rating: 2.4

Explanation for the rating:

The contributions to modeling of flooding and storm surge are clearly already having a major impact at the local and regional level. A number of agencies and groups are using the results of the models in forecasts and in planning for response. The improvements in the models should also be important for modeling these types of events in other areas of the country or internationally. There are no indications that this has happened yet, but; the developments have just been completed and are being assessed against actual events. An interesting addition to the risk communication effort is the creation of a web site that uses real-time environmental measurements to match conditions with those associated with a comparable historical storm so the emergency managers have a better idea of to expect. The site has already been used to secure \$1 million for storm damage restoration and mitigation projects.

The NY SG Program continues to make a significant contribution to science and technology in the development of models that address coastal hazards. For example, NY SG developed an operational forecasting system of nearshore wave conditions for Long Island, NY coastal waters, which was coupled with a storm surge model to improve water level predictions along the coast of Long Island (6558).

Additionally, a 50-hour time horizon high-resolution storm surge prediction model was developed to improve coastal flooding forecasts (6871). NY SG has also developed a computational model, based on physical processes and state-of-the-art numerical algorithms, to understand the influences of wave, soil and structure parameters on wave induced pore pressure under a submerged permeable breakwater (6879). Furthermore, NY SG developed a coupled hydrodynamic sediment transfer model, which allows for understanding sediment transfer and depositional patterns, and has the potential for addressing environmental issues that surround dredging in the Hudson River (6876).

NY SG has also made significant contributions to science and technology in the development of tools. Namely, the Atlantic Coast of New York Erosion Monitoring Program Website, which provides information on shoreline conditions for coastal hazard management along heavily developed areas, was expanded with 1250 aerial photographs to create and display five years of sequential historical photographic mosaics of the entire shoreline (15627). Additionally, NY SG developed the East Coast Winter Storm Climatological and Forecasting Data Website, which provides seasonal forecasts of storm activity, historical storm data, access to sites providing real-time environmental measurements, and a tool that automatically matches forecasted storms with similar historical events and provides information on the impacts of these events to help audiences better prepare for predicted storms (6642).

NY SG also partakes in and provides scientific support for various studies, including an evaluation of FEMA flood insurance rate maps (14825); model evaluations (14616); and a study on Paralytic Shellfish Poisoning (6881).

Through its breakwater modeling, the Program did contribute to both national and international advancement of understanding. It is unclear how much of this effort Sea Grant funded, therefore it is difficult to determine if contributions is commensurate with the size of federal investment.

Economic impacts are reflected in real or potential cost savings to communities rather than creating jobs or building businesses.

Other than the workshop held in conjunction with South Carolina, the benefits of the Program are local rather than regional.

International Impacts:

- Developed mathematical model for the design of breakwaters to fit the local needs.
 - Used in Europe and Asia
- Developed early warning systems for potential of tsunamis in conjunction with breakwaters.
- Potential for keeping coasts and coastal inhabitants safer in the event of a tsunami.

NY SG has done a thorough job in preparing educators to communicate climate change impacts appropriately via a two-day climate literacy training workshop. This activity is essential in ensuring climate change messages are articulated properly. The resulting outreach and adaptation strategies can potentially be applied to other areas.

The above-mentioned East Coast Winter Storm Climatological and Forecasting Data Website (6642) has been incorporated into Red Cross emergency response plans. Additionally, two

municipalities used information from the site to obtain \$1M for storm damage restoration and mitigation projects.

NY SG was also instrumental in assisting the Village of Port Jefferson to get reimbursed for work they had previously done on a beach to help restore a park. NY SG worked with the village to help them identify sources of funding to use for restoring their beach and to assemble technical information needed to apply for this assistance. NY SG also provided information to help them better understand the natural human- related processes affecting the area and options available for addressing the problems using historical data and aerial photographs (14826). This activity clearly had a positive economic impact on the Village of Port Jefferson.

NY SG played an integral role in influencing FEMA to re-evaluate the models used to develop flood insurance rate maps. NY SG compiled and synthesized information on the techniques and data used to generate the maps and worked with NY SG-funded researchers conducting numerical modeling studies in the area to assess the accuracy and uncertainty associated with the models used in developing the maps. Potentially, the information provided will affect the re-evaluation of FEMA flood maps in other regions.

The development and enhancement of models for flooding and storm surge are providing much better guidance on storm related flooding and effects. The importance of accurately predicting flooding and storm surge levels hours in advance and to estimate the timing of the flooding should not be underestimated.

Summary of societal impacts includes:

- Developed a series of storm surge models which offers real-time, publicly accessible, web-based coastal warning for forecasting location, timing, and severity of rip currents and coastal flooding.
 - Material used by NWS, NYC Dept. of Envir. Protection, and NYC Emergency Planners.
- Assisted Corps of Engineers in the implementing of a Regional Sediment Management plan by providing state and local stakeholder input.
 - Such plans are deemed necessary to protect the environment and reduce existing coastal risks and future challenges of climate change.
- Provide information on recent, current, and forecasted lake levels.
 - Provided to users electronically and assist coastal development decision makers.
- With South Carolina, organized and moderated workshop on communicating climate change issues to communities, engaging stakeholders, and communicating potential impacts.
 - Impact extended to several other coastal areas including Hawaii, Maryland, Alaska, South Carolina, and Louisiana.

Economic Impacts:

- Partnering with Corps of Engineers and Nat'l Park Service developed a statewide sediment management plan.
- Material used by two municipalities to obtain \$1M for storm mitigation and remediation projects.
- Two municipalities implemented a \$4.5M management alternative
- Distributed 9000 copies of a primer addressing major shoreline trends and technical issues associated with erosion and erosion management.
- Help marinas to understand environmental regulations through the development of a template.
 - o 57% of marinas used this template with an estimated savings of \$150,000.

Sustainable Coastal Development

Progress Towards Plan - Is the Program making significant progress towards their previously approved Program Goals, Program Performance Measures, and/or Program Objectives in this focus area?

Rating: 1.5

Explanation for the rating:

The score for progress against the Program's plan (goals, objectives, and measures) reflects the SCD panelists assessment that New York Sea Grant (NY SG) is adequately meeting expectations in some, but not all, areas.

The Program's strategic plan lays out its goals and strategies and the 2010 and 2011 PIER reports contain 10 performance measures. NY SG indicates that it has met or exceeded the target numbers for seven of the ten. For one of the remaining three, the Program appears to be making reasonable progress. For the two others, there are no data to indicate progress nor is there commentary to judge whether progress is being made.

Some of the program activities/accomplishments described in the Program's Progress towards Plan (2010-2011) report do not align well with the approved goals. For instance, there are no substantive activities related to the first goal, "Effective coastal spatial planning and utilization of coastal waters for commerce and conservation." Rather, the Program lists accomplishments related to ten Sea Grant graduate students, an evaluation of habitat classification schemes, and final reports from three Knauss Fellows. None appear to be connected to the goal and, in the view of the panelists, there was no evidence of tangible progress on this goal. Many of the other listed accomplishments do not support or track to the performance measures, giving the impression that NY SG is not sufficiently focused.

The SCD panelists expected a more substantive and organized description of progress to date given the relatively large, two-year, federal investment in the focus area.

**Overall Program Impact - Considering the level of Sea Grant federal investment, is the Program making a significant contribution to science and technology in this focus area?
Considering the level of Sea Grant federal investment, is the Program making a significant contribution to society beyond the contribution to science and technology in this focus area?**

Rating: 0.0

Explanation for the rating:

The score for NY SG's impact reflects the science and technology as well as societal benefits relative to the federal investment of nearly \$1,218,000 during 2010 – 2011. The panelists found

the program's impact to be below expectations overall, although there were some areas that were successful.

Although most of NY SG's SCD activities appear to be concentrated in outreach, the Program reported having provided some information and tools for use by decision-makers and local practitioners. Examples of accomplishments and impacts include:

- Developing procedures to calculate "resource sheds" in which the program linked hydrodynamic and particle tracking models to develop a tool to delineate these resource sheds.
- Developed an approach to evaluating natural resource information that regulatory agencies, such as the USACE and NYSDEC, can use to determine windows for dredging. This is providing better information and improving coordination among agencies.
- Developing a quantitative model to examine the relative contribution of various biological and socioeconomic factors to changes in fishing participation and to forecast changes in fishing participation over the next 3-5 years.
- Sponsoring a research project examining the nature and heritage tourism in New York's Hudson River Valley communities. Surveys showed how survey participants rated Hudson Valley communities and engaged in cultural, nature-based and water recreation activities. Survey results were used by at least one of the participating municipalities in their Village Master Planning process.

Based on the descriptions provided by NY SG in the PIER reports and the Program Summary, it is not evident that the SCD contributions in science, or the economic and social benefits, are commensurate with the Program's federal investment. Not only did the Program not provide many examples of its accomplishments in this focus area, but many of the efforts amounted to general information, public relations, or were internally focused. Either the Program did not articulate its outcomes well or it did not achieve them.

The panelists agree with the Program's self-assessment in its strategic plan. In the section titled "Internal Programmatic Goals," the Program states "...In the future, NY SG must consider sharpening its focus to increase impact..."

Safe and Sustainable Seafood Supply

Progress Towards Plan - Is the Program making significant progress towards their previously approved Program Goals, Program Performance Measures, and/or Program Objectives in this focus area?

Rating: 2.8

Explanation for the rating:

The NY SG program has two program goals in the SSSS focus area: (1) high quality, seafood products from profitable New York seafood businesses and (2) Sustainable coastal fisheries for New York commercial and recreational fishers. The program is making very good progress towards achieving their goals, exceeding expectations by a substantial margin in some areas and aspects.

The NY SG program is confronted with many challenges as it is spread across a large state and multiple regions, particularly the Great Lakes and Long Island Sound. They have developed strong partnerships and many collaborations to address these challenges. The impacts and accomplishment articulated progress towards these goals. Some examples of their work that successfully illustrates progress towards their goals include their work on paralytic shellfish poisoning that prevent illness, HACCP training that leads to quality seafood, and trawl design work that leads to better fisheries management. There was some concern on the demarcation between accomplishments and impacts for NY SG.

Almost all of the program measures are on target or have exceeded target levels. Reviewers would have liked more comments on how these are being achieved. Without this, it is difficult to independently verify that these were on target. In some cases, they have exceeded targets by a substantial amount, but only provide numbers without comments to explain them. This lack of comments made it difficult to justify a higher rating for this category.

Overall Program Impact - Considering the level of Sea Grant federal investment, is the Program making a significant contribution to science and technology in this focus area? Considering the level of Sea Grant federal investment, is the Program making a significant contribution to society beyond the contribution to science and technology in this focus area?

Rating: 2.0

Explanation for the rating:

In terms of overall impact, NY SG is successful. They have achieved an acceptable, but not unusual, level of performance relative to their level of Sea Grant federal investment.

The NY SG Program has made a strong contribution to science and technology, relative to their level of federal funding. However, based on the PRP materials, there was a concern by some

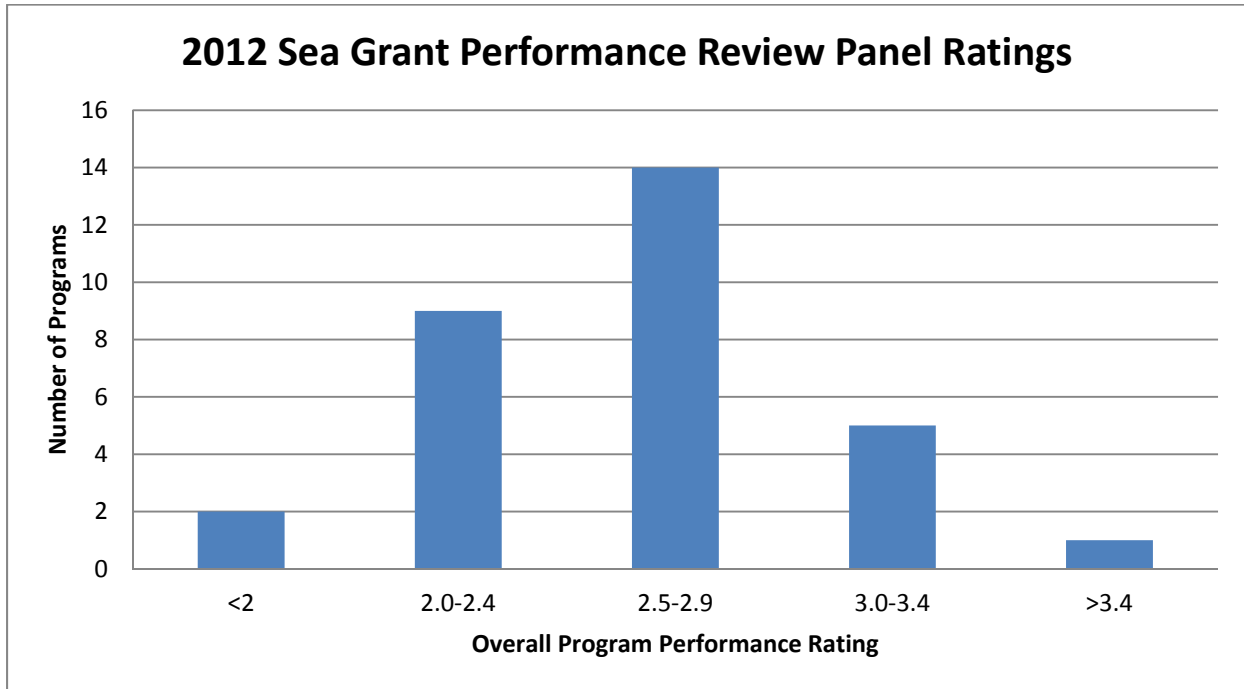
reviewers about how well technology transfer was occurring and specifically how the research results were used, getting the results out of the lab to where it could make an impact. Some research statements did not mention stakeholders or simply said that they were used by stakeholders without further detail or verification. Some examples of effective stories of how NY SG research made an impact include:

- Research to assess the status of the Atlantic Sturgeon, leading to a determination that four of the five sturgeon populations should be listed endangered;
- Development of a rapid, accurate and less expensive test for the QPX pathogen that is being adopted by NY DEC into its ongoing monitoring of clam beds;
- Trawl workshops that help international scientists assess fish populations; and
- Publishing a synthesis on hard clams has had substantial findings that are being used by a variety of stakeholders to manage and restore shellfish.

Reviewers felt that NY SG program had fewer contributions to society (beyond science and technology) than might be expected for this level of funding in SSSS. Some highlights of NY SG efforts that reach and benefit many people were noted, including leadership in the HAACP training work to ensure quality seafood; VHS prevention in the aquaculture industry; safety training for commercial fishermen; a *Listeria* control program for smoked fish products; water quality work to manage the hard clam fishery; QPX testing and identification; and the “I Fish New York” program.

In terms of overall impact, reviewers recommended that additional attention be given to quantify and authenticate the data supporting the impact analysis. Doing so would have given reviewers more robust information to fully determine the overall impact of the Program. Although assessing impacts (economic or otherwise) requires time, expertise, and networking with colleagues in the Sea Grant Network, attention to this would result in more confidence of the ultimate impact of NY SG on stakeholders and interested parties, especially to assess the eventual adoption and utility of the NY SG research portfolio. For example, there were previous research investments that did not appear in the report as impacts. Despite a number of research projects in the mid-2000s (which pre-dated the time-frame of this PRP by a year or two), reviewers were surprised about the lack of extension impacts to benefit resource management resulting from research on Long Island Sound lobsters or Lake Ontario salmonid and their prey base.

Appendix I –



Dear NYSG staff:

We recently received the evaluation from the National Sea Grant Office Program Review Panels (PRP) that met last fall to assess our Impacts and Accomplishments, as well as the progress we are making with respect to NYSG's 2010-2013 Strategic Plan. These were the materials we submitted to PIER in August 2012, as well as the annual reports for 2010 and 2011. Much to our surprise and dismay, the overall performance assessment of NYSG was low, though there were some focus areas in which we fared well.

The Management Team has discussed these results with Jon Eigen and Sami Grimes of the National Office, trying to determine what happened in the process that caused these unexpected results. While the complexity of our program and the breadth of our strategic plan create challenges that some other programs do not have, we failed to clearly communicate the impacts of some of our projects to the PRP panels in certain focus areas. In some cases, the links between the goals of our Strategic Plan and the accomplishments and impacts that we reported were not clear. In addition, this PRP review was a totally new process for the National Sea Grant office and included only our performance during the first two years of our current (2010-2013) Strategic Plan.

What does this mean for us as a program? The Management Team believes that NYSG is an excellent program, but it seems that we did not present a convincing picture of that in the materials that were reviewed by the PRPs. Three components will be considered this spring when final ratings and merit increases for all the programs are decided:

- a) Our performance in the 2010 site visit
- b) Our performance in the PRP evaluation (see below)
- c) Our 2012 Annual Report

The amounts of merit funding available to the programs can be significant but in the past have been less than 10% of the total without such funding.

To address the concerns expressed by the reviewers we are discussing the usefulness of taking many of the following steps:

For the 2010-2013 Strategic Plan:

1. Full staff will review the 2010-2013 Strategic Plan with an eye to:
 - a. Remove goals or objectives not relevant for 2013
 - b. Clarify our objectives
2. Extension will improve efforts to associate impacts with programming:
 - a. Submit a broader range of activities in the impact and accomplishments section written towards achieving the goals in the plan
 - b. Conduct more thorough evaluations of programs
 - c. Plan programs with evaluation and impacts in mind
 - d. Write accomplishments and impacts with details in mind
3. Research will improve efforts to associate impacts with research projects:
 - a. Research will ensure all impact and accomplishment statements on research clearly link the work with the goals of our Strategic Plan
 - b. Consider new methods to extend funded research that has no current NYSG extension support
4. Communications will coordinate with research and extension to better report and disseminate impacts through:
 - a. Provision of specific templates for impacts and assistance with using

- b. Provision of new technologies for better dissemination of information to stakeholders to increase impacts
 - c. Publicity for projects and impacts which deserve greater attention
- 5. Program Staffing:
 - c. Refocus Management Team itself on achieving and reporting impacts and accomplishments
 - d. Refocus research staff on gathering impacts, while still maintaining interactions with stakeholders
 - e. Potential additional support from a writer, research coordinator or other staff position to assist with research/extension impact statements and condensing them in PIER for the PRP report
 - f. Extension and Program Administration is actively exploring new staff resources for extending water quality research on Long Island and other critical issues with limited current extension support

For the 2014-2018 Strategic Plan:

- 1. Revisit the 2014-2018 Plan prior to the submission of the extension work plans to ensure that they reflect programming as impacted by "Superstorm Sandy"
- 2. Tie extension work plans to the Focus Area, Goals, Outcomes and Performance Measures
- 3. Pilot an Integrated Assessment Research RFP
- 4. Compile and evaluate best practices from other programs regarding research and extension in the context of the talent and resources available in NY
- 5. Develop new methods to extend research that is of great interest and importance to stakeholders, but has no current NYSG extension staff support
- 6. Discuss future directions for NYSG with the Board of Governors at the upcoming meeting and seek additional input from the staff, Program Advisory Council, and other stakeholders

We will also share this PRP review with our Board, and hope that all recognize that though this report is of great concern, we also believe that it reflects more of a reporting problem rather than a programming problem, though both issues need to be addressed.

Please do not share this report outside NYSG staff. We would like to have a discussion about the review and the ideas for the future listed above, with as many of you as can participate on Thursday, February 14 at 3PM. Please call the conference number and code below:
 DIAL IN: (866) 394-2346 CONFERENCE CODE: 3813496564 (For those unable to participate there will be additional opportunities for input and discussion.)

Thank you.
 The Management Team

Jim Ammerman
 Kathy Bunting-Howarth
 Cornelia Schlenk

February 20, 2013

Mr. Jonathan Eigen
National Sea Grant Office
NOAA
Silver Spring, MD

Dear Mr. Eigen:

The New York Sea Grant Program is extremely disappointed and concerned about the PRP review, as you know from our recent discussions. While we are not aware of major factual errors in the PRP report, our management team believes that it is important to respond.

As you are aware we are a large, diverse program with activities in multiple estuaries around New York City and Long Island, parts of two Great Lakes (Ontario and Erie), and sections of two major rivers (Hudson and St. Lawrence). In addition, we are part of both the SUNY and Cornell University systems, though less embedded within our host institutions than some other Sea grant programs are within their own universities. While we have significant Federal resources, our leveraged funding from the State of New York is limited and requires that our Principal Investigators also provide matching funds. Furthermore, this limited State funding has declined in recent years due to the loss of State member items (the equivalent of earmarks). Thus we have lost two senior extension staff to retirement and been unable to replace them. We face demands for a large diverse research program throughout the state of about \$1M per year, with a limited extension staff to provide outreach and extension for some of the projects.

Thus we are concerned that our limited State funding, large State population, and diverse coastal environments may limit some of our impacts. This is particularly true when we are compared with smaller, more-focused programs, where the Sea Grant program is more closely connected to a single university. For instance New York Sea Grant has just three core funded extension specialists on Long Island—nowhere near the capacity of other programs with smaller shorelines and smaller populations than just Long Island—not to mention the entire State of New York. While we recognize that each Sea Grant program is evaluated based on its own strategic plan, the differences described above make such evaluation more challenging.

We agree with the panel in the PRP report section on Healthy Coastal Ecosystems that much of the problem is due to our reporting and not our performance. We clearly need to focus on reporting specific impacts for each goal under each focus area. In addition we should more clearly assign projects to specific goals and focus areas and decrease the overlap. We also did not take significant advantage of the comment box available in PIER as done by some other programs, and probably should have excluded some progress reports from the PRP report because they distracted from our impacts and accomplishments. We also did not break out a separate focus area for Coastal Literacy, though I understand that the National Sea Grant Office (NSGO) did not see that as contributing to our problems.

We remain puzzled as to the role of the 2008-2009 information that we were asked to describe because it was not well-represented in PIER. Since the strategic plan progress being evaluated was for 2010-2013, all that the 2008-2009 data would provide is background information for related projects conducted under a previous strategic plan. In addition, we are concerned that the annual reporting and review process did not provide us with earlier signals that our impact and accomplishment reporting through 2011 was insufficient. Though we recognize that the PRP is a new process, it would seem that the NSGO might have flagged our deficiencies earlier, especially with such a low final score.

We are currently working on improving our reporting processes and will revisit and potentially narrow both our current and new strategic plans, despite the need for a broad array of coastal research and extension in New York and the additional demands imposed by Hurricane Sandy. We are also constantly seeking additional forms of leveraged support for new extension specialists and will redouble these efforts. We are confident we have an excellent program and look forward to working with you and the NSGO to make sure that our performance is more properly reported and evaluated. Thank you for your attention.

Sincerely,

A handwritten signature in dark ink, appearing to read "James W. Ammerman".

James W. Ammerman
Director, New York Sea Grant

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Grouped by Funding Source and Ordered by Project Number (n = 23)**

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New York Sea Grant's Biennial Research Call for 2014-2015

INVITING PRE-PROPOSALS FOR RESEARCH Specifically Addressing NYSG's Strategic Plan for 2014-2015

Pre-Proposal Deadline 4:30 PM Friday February 22, 2013

Anticipated Funds: approximately \$1 million per year for 2 years,
to support about 7-10 projects

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 sustainable 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' and have an impact on addressing important coastal issues.

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I. BACKGROUND

New York Sea Grant (NYSG) is part of a national Sea Grant network that constitutes NOAA's National Sea Grant College Program. In New York State, Sea Grant is a cooperative program of the State University of New York (SUNY) and Cornell University, with its main administrative

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offices located at Stony Brook University. In a time of accelerating economic, environmental, and scientific developments, NYSG's mission is to serve as an important partner in helping New York's diverse coastal communities to respond to rapid economic and environmental changes.

II. NYSG RESEARCH AND TOPICS FOR THIS CALL

Sea Grant projects tackle well-defined coastal, Great Lakes, or marine issues confronting modern society. While research projects supported through New York Sea Grant must address problems or opportunities important to New York State, the results of these projects should also be relevant to regional or national needs. Further, the ability of NYSG to present its results as relevant to National Sea Grant priorities within NOAA is very important.

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 methods, models, tools, and techniques also qualifies as Sea Grant research. State-of-knowledge synthesis efforts may also be proposed. The project must show an understanding of what constitutes necessary and sufficient information for responsible decision-making or for applied use, and will be expected to generate such. A project must have sufficient intellectual content (theoretical basis, hypothesis testing) to make it appropriate for university research.

The need, significance, products, usability, target audience (beyond other academics), and expected impact for and of the research must be clearly anticipated and described. ***These will be key factors in the review process.***

Because the Sea Grant mission includes extension of research and other results to stakeholders, discussions with NYSG extension staff (see list in Section VI) 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 may be most useful to coastal stakeholders. Preference will be given to high-quality proposals which are designed to lead to products and knowledge of significance to NYSG Extension staff and their stakeholders.*** 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, must be identified. Contact with them before, during, and after the project by the researchers and/or via NYSG staff is expected.

NYSG encourages multi-disciplinary and multi-investigator research. NYSG is also interested in helping to foster new research talent, and encourages submissions from young investigators and others who have not previously received NYSG funding. The development of future scientists and decision-makers through student education is also important to NYSG, and investigators are encouraged to involve graduate and/or undergraduate students in the conduct of their projects.

Efforts inappropriate for Sea Grant funding include those directed solely toward monitoring or surveys, or that are merely demonstration projects. Expansion of understanding solely for its own sake is also considered inappropriate for Sea Grant.

In this Call for Pre-proposals, NYSG invites projects that will advance the Goals listed in *New York Sea Grant's Strategic Plan for 2014-2017*, via the Research Topics presented below. Note that research in many disciplines (e.g., biology, chemistry, geology, physical oceanography, and engineering) will be appropriate. **This includes social science research to develop approaches or methods as applied to Goals 1, 2, 4, 5, 6, or 7 that will aid decision-makers and others in taking action based on scientifically sound research results.**

Goal 1: Protected, Restored and/or Enhanced Habitat and Ecosystems through reduction or mitigation of, or adaptation to, the impacts of a) aquatic invasive species, b) changes in aquatic communities due to ecosystem and climate change, and c) anthropogenic activities. To help achieve this, NYSG is looking for:

- 1.1 Research (through the natural and social sciences) to develop measures and tools to predict, prepare for, assess, and mitigate the effects of ecosystem changes on coastal habitat, including species loss.
- 1.2 Research (through the natural and social sciences) to develop measures and tools to predict, prevent, prepare for, control or mitigate the introduction and effects of aquatic invasive species.
- 1.3 Research (through natural and social sciences) to develop techniques and methods for habitat management and restoration, and to identify ways to assess the effectiveness, sustainability, and costs of new and current methods.
- 1.4 Research to develop information, tools, and methods to forecast what new ecosystem and habitat states might be as affected by AIS, climate and other changes, and anthropogenic activities.

Goal 2: Sustainable Fisheries and Aquaculture for New York. To help achieve this, NYSG is looking for:

- 2.1 Research to determine the causes and potential remedies for actual and predicted changes in populations and population dynamics of finfish and shellfish of economic importance to New York.

Goal 3: Safe, High Quality Seafood Products from Profitable New York Seafood Businesses. To help achieve this, NYSG is looking for:

- 3.1 Research to fill knowledge gaps on current issues, policies, regulations, or environmental conditions that could affect the quality and safety of products, or the productivity and profitability of their individual seafood business or the seafood industry in New York.

Goal 4: Robust and Sustainable Development of Coastal Business. To help achieve this, NYSG is looking for:

- 4.1 Research to develop tools, techniques and methods to determine potential impacts on coastal resources from activities such as dredging, boating, construction and other economic activities.

- 4.2 Research to develop techniques so that coastally-located businesses can cost-effectively reduce their impact on nearby habitat and meet regulatory requirements.
- 4.3 Research (through the natural and social sciences) to develop tools, techniques and methods to assess economic impacts of coastal businesses on coastal economies.
- 4.4 Social science research to identify effective ways that coastal businesses can diversify income sources.

Goal 5: Effective Community Land Use Planning which Integrates Watershed Issues. To help achieve this, NYSG is looking for:

- 5.1 Research to develop tools, methods or practices to assist municipal governments in the prevention of point and nonpoint source pollution.

Goal 6: Improved Coastal Water Quality through Community Efforts. To help achieve this, NYSG is looking for:

- 6.1 Research to develop techniques and tools to better assess coastal water quality, water quality impairments (including emerging contaminants), and harmful algal blooms and to identify and develop potential remedial measures.
- 6.2 Research to interpret water quality data to understand how (or how much) the expenditures for practices designed to create water quality improvements are benefiting the ecosystem and water quality.

Goal 7: Improved Ability to Prepare for and Mitigate the Impacts of Existing and Future Coastal Hazards. To help achieve this, NYSG is looking for:

- 7.1 Research to develop and/or use tools and techniques to improve the prediction and consequences of current coastal processes and hazards and those that might be affected by land-use and/or climate change, this may include long-term strategies for addressing existing and potential coastal hazards.

III. GENERAL INFORMATION ABOUT PRE-PROPOSAL SUBMISSION

A. Who is Eligible to Submit:

Sea Grant is a national college program, so faculty at academic institutions are the main targets and 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.
- 2. Researchers at other not-for-profit research institutions.
- 3. Researchers who are personnel of state or local agencies, or of not-for-profit organizations.
- 4. Researchers at for-profit institutions or companies (with limits).

Important Notes: All proposals submitted under this Biennial Research Call for 2014-2015 must be **led** by an eligible researcher with his or her primary professional base in New York State. 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, the funding will cover two years, running from 2/1/2014 through 1/31/2016. 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. Proposals for one-year projects are also welcome.

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

The total budget request (direct + indirect costs) for a project may not exceed \$130,000 per year. Note that the budget estimates in pre-proposal submissions are expected to be realistic. A substantial increase in the final budget request will be viewed negatively and likely will result in either rejection of the project or budget cuts without changes in the scope of work.

D. Cost-Share Requirement:

Sea Grant requires 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 \$100K is requested from Sea Grant, the proposal's budget page must demonstrate an additional \$50K of non-federal cost-share. Additional cost-share (i.e., more than 50%) is encouraged and will be viewed favorably.

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. Regional or Multi-state Proposals:

All Sea Grant programs are now on the same funding cycle which facilitates collaborative projects between states. If you are interested in submitting a regional or multi-state proposal, you must contact NYSG's assistant director, Cornelia Schlenk, and your co-PIs must contact their state Sea Grant director(s) or research coordinators prior to submission. It is critical that submitters be familiar with, and comply with, the due dates and processes as specified by their state's Sea Grant program.

In addition separate, special regional Calls are being released by the Northeast Sea Grant College Consortium (ME through NY) and by the Mid-Atlantic Sea Grant Programs (NY through NC). These will be posted on NYSG's website when they are available. See <http://www.seagrantsunysb.edu/proposals/> for details and specific submission instructions. Those submissions are *not* considered to be part of NYSG's Biennial Call for 2014-2015 and will be supported through separate funding.

G. 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, another state Sea Grant program, or any other funding agency or source. In addition, please note that it is New York Sea Grant's policy to consider only submissions specifically in response to, and within the due dates for, this Call. Proposals will not be considered unless they were in this Call's pool from the start as a pre-proposal.

H. Data Management/Sharing Plan (NEW!) New NOAA regulations require that data and information collected and/or created under NOAA (including Sea Grant) grants must be made visible, accessible, and independently understandable to general users, free of charge or at minimal cost, in a timely manner (typically no later than two years after the data are collected or created), except where limited by law, regulation, policy or by security requirements.

The new requirement has two basic parts: (1) environmental and socio-economic data generated by a grant project must be made available after a reasonable period of exclusive use, and (2) the grant proposal must describe the plan to make the data available.

To comply with this new requirement, in NYSG's full proposal stage, the principal investigator must include a data management plan that describes how the project's data and metadata will be made available to others. Deposition of data in standard data archives (e.g., by discipline) or in available university archives is encouraged. This requirement for data archiving is in addition to the expected publication of research results in peer-reviewed journals. The proposed plan will be reviewed for compliance with NOAA requirements. If funds are needed for this task, they may be included in the project pre-proposal and full proposal budgets.

I. What and When to Submit:

The completed PC-readable Pre-proposal Submission Form (see Section VII) ***must be received by the deadline of 4:30 pm EST on Friday, February 22, 2013*** at NYSG's electronic submission web site: www.NYSGProposal.org Navigate to "New York Sea Grant's Biennial Research Call for 2014-2015" and follow all directions for electronic submission. At the pre-proposal stage, signatures of principal investigators or campus officials are not required.

Do not include information or materials supplemental to the Pre-proposal Submission Form (e.g., full budget, appendices, letters of support, etc.). Such materials will be discarded without review.

Important notes about pre-proposal submission:

Submissions that do not include the required information will lose rating points (see Section VII for Instructions).

- Double-check your Pre-proposal Submission Form file before uploading it at the submission web site to make sure it is PC-readable and that it is your final version. *It must be in the form of a single pdf file.* You will receive an auto-receipt from the web site confirming your submission, but this is not an indication that your file is readable.

- We recommend submission via a PC at your university office, with a current version of Internet Explorer, Firefox, or Google Chrome web browser installed.
- If you have trouble with submission through www.NYSGProposal.org, call NYSG (631-632-6906) to explain the problem. We will try to help, but cannot guarantee that we can solve your problem. In any case, unless the web site (housed on the Stony Brook University server) becomes inoperable, it is *your* responsibility to use equipment that will allow you to meet the deadline.
- All submissions will be checked in the order they were posted and any that contain a virus or that are unreadable cannot be accepted. The lead investigator will be notified about this by email. However, for submissions that are posted on February 22, NYSG cannot guarantee that this check and notification will take place before the 4:30 PM deadline.
- Any submission after the deadline of 4:30 PM on February 22, 2013, cannot be accepted and its lead investigator will be notified. Please be sure to watch the time! Even if you are on the website before the deadline, if your file is not submitted by 4:30 PM, it will be too late to be accepted.

NYSG will not make exceptions to these conditions, so ***early submission is very strongly advised***. The official time stamp on the submission is provided by the web site's server.

IV. THE REVIEW PROCESS

All pre-proposals submitted to NYSG in response to the *Biennial Research Call for 2014-2015* will be screened by NYSG's program management team, extension specialists, and Program Advisory Council, as well as several non-NY academic research Panelists. The following criteria will be evaluated:

- Explanation of fit to Section II Goals and Research Topics and the significance of the specific problem, need, or opportunity the proposal will address (0 to +5)
- Expected products and anticipated impact(s) from the results (0 to +5)
- Likelihood that the approach will be successful (0 to +2)
- Information missing from any of the sections, 1 through 9 (0 to -1, per section)
- Other programmatic considerations

Only authors of the most highly-rated pre-proposals will be invited to submit full proposals. In this cycle, NYSG will invite about twice as many as it expects to be able to fund. During full proposal development, investigators will be expected to facilitate coordination with, or input from, industry, agency, or private groups as appropriate. NYSG staff will attempt to be of assistance in this process.

Full proposals will be subject to mail peer review and a special Technical Review Panel. NYSG's program management team will also utilize additional input from NYSG's staff and Program Advisory Council. The specific projects NYSG includes in its omnibus proposal to the National Sea Grant College Program will be selected primarily on the basis of the following criteria: responsiveness to the NYSG conditions, priorities, and Goals outlined in this Call; significance of the specific problem or opportunity; scientific or technical merit of the workplan, including also the professional qualifications of investigators and appropriateness of the budget

request and match; expected products and anticipated impact(s) from the results; and other programmatic value. Performance and accomplishments with previous NYSG funding will be considered also, if applicable. The National Sea Grant Program Office oversees NYSG's review processes and does not conduct a separate evaluation of individual proposals.

V. 2014-2015 CALL TIMELINE

January 4, 2013	Call for pre-proposals released
February 22, 4:30 pm	Deadline for pre-proposals (must use NYSG submission web site)
April 11	NYSG invites selected PIs to write full proposals
June 7, 4:30 pm	Deadline for full proposals with all authorized signatures (must use NYSG submission web site)
July 31	PIs receive masked peer reviews for response
August 7	Deadline for PI responses to reviews
August 30	NYSG notifies successful investigators
September 20	Deadline for revisions, final budgets and Word/Excel versions of successful proposals
February 1, 2014	Anticipated funding begins for new projects
February 1, 2015	Anticipated funding continues for 2-year projects with satisfactory progress

VI. NEW YORK SEA GRANT STAFF

Research Administration (at Stony Brook University)

James Ammerman, Director (631-632-6905, james.ammerman@stonybrook.edu)

Cornelia Schlenk, Assistant Director (631-632-6906, cornelia.schlenk@stonybrook.edu)

Mary Kethman, Fiscal Officer (631-632-6908, mary.kethman@stonybrook.edu)

Lane Smith, Research Program Coordinator (631-632-9780, Lane.smith@stonybrook.edu)

Extension Specialists (locations throughout New York State)

Katherine Bunting-Howarth, Associate Director (607-255-2832 at Cornell University, keb264@cornell.edu) – coastal policy and decision-making; public participation; human dimensions of coastal management.

Antoinette Clemetson (631-727-3910 at the Cornell University Research & Extension Center in Riverhead, aoc5@cornell.edu) – marine recreational fisheries; lobsters; marine fisheries diseases.

Helen Domske (716-645-3610 at SUNY Buffalo, hmd4@cornell.edu) – coastal education; avian botulism; Great Lakes ecosystems; emerging contaminants.

Ken Gall (631-632-8730 at Stony Brook University, klg9@cornell.edu) – seafood safety; seafood processing; seafood utilization; seafood education.

Nordica Holochuck (845-340-3983 at Cornell Cooperative Extension of Ulster County in Kingston, nch8@cornell.edu) – stewardship; coastal recreation; habitat issues; Hudson River issues.

Eileen Keenan (631-632-8730 at Stony Brook University, ek72@cornell.edu) – water quality; stormwater management ; non-point source pollution.

David MacNeill (315-312-3042 at SUNY College Oswego, dbm4@cornell.edu) – sportfishery development; fisheries biology, management and conservation; aquaculture; ecosystem change; aquatic invasive species.

Mary Penney (315-312-3042 at SUNY College Oswego, mp357@cornell.edu) – Great Lakes coastal communities; aquatic invasive species.

Jay Tanski (631-632-8730 at Stony Brook University, jjt3@cornell.edu) – marine facilities; coastal processes and erosion control; sea level rise and other coastal hazards.

David White (315-312-3042 at SUNY College Oswego, dgw9@cornell.edu) – coastal recreational facility design, management, and operation; coastal recreation participation, uses, and impacts.

Communications Staff (at Stony Brook University)

Barbara Branca (631-632-9124, barbara.branca@stonybrook.edu) – communications manager.

Paul Focazio (631-632-9124, paul.focazio@stonybrook.edu) – writer, web developer.

VII. PRE-PROPOSAL SUBMISSION FORM INSTRUCTIONS

Be sure to use the format and provide the information as described below. **Every Section (1-9) and all of the information specified within it is required.** Submissions that do not include all of this information will lose rating points. Use all-around margins of at least 1" and a font size no less than #12 Times New Roman.

Pre-proposal Submission to the NYSG Biennial Research Call for 2014-2015

Date: _____

1. LAST NAMES OF PRINCIPAL INVESTIGATORS: (e.g., Smith / Doe / Jones)

2. BRIEF PROJECT TITLE:

3. INVESTIGATOR(S): List **all** principal (PI), co-principal (co-I), and associate (AI) investigators, including name, mailing address, telephone, and email for each. *Also* indicate eligibility category (#1, 2, 3, or 4) from the Call's Section III.A for each. The primary professional base of the lead investigator must in New York State. Students and NYSG staff cannot have PI, co-I, or AI status.

4. TYPE OF PROJECT:

a. Addressing Which Goal and Research Topic: Indicate the Goal and Research Topic numbers from Section II of this Call that will be addressed by this submission (e.g., *Goal 4, 4.1 Research to develop tools, techniques, and methods to determine potential impacts on coastal resources from activities such as dredging, boating, construction and other economic activities*).

b. Regional or multi-program submission? Indicate yes or no, whether the pre-proposal is part of a regional or multi-program submission being considered by other state Sea Grant programs. If yes, indicate which Sea Grant programs. Note: pre-proposals in response to the special Northeast or Mid-Atlantic Regional Calls mentioned in section III.F should *not* be submitted under this NYSG Biennial Call.

5. BUDGET: Totals of direct plus indirect costs.

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

Year One \$ _____ Year Two \$ _____ Total Request \$ _____

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

Year One \$ _____ Year Two \$ _____ Total Match \$ _____

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

Year One:

Year Two:

D. Data Management Plan: Indicate your recognition that an acceptable data management/sharing plan will be required as part of a full proposal, that compliance with the plan will be required if the project is funded, and that the preproposal's budget estimate provides for this. _____ yes.

6. BRIEF DESCRIPTION OF PROJECT: Starting on a *new* page, **use no more than two pages** with the following a-e headings to describe your proposed project. Use all-around margins of at least 1" and a font size no less than #12. Anything beyond two pages (or estimated to be beyond, if margins or font are incorrect) will be discarded prior to review.

- a) **STATEMENT OF THE ISSUE:** Explain the specific problem, need, or opportunity you wish to address and how it fits the Section II Goals and Research Topics.
- b) **OBJECTIVES:** List the overall objectives of your proposed study, with a statement of the hypothesis(es) to be tested. Or, if this is model or technique development or a synthesis effort, clearly state the intent.
- c) **APPROACH:** Very briefly describe the general approach to be used in accomplishing the objectives.
- d) **EXPECTED PRODUCTS AND ANTICIPATED IMPACT(S):** Explain what products (models, methods, and scientific information) are expected to result from this project, who will use them, and what their anticipated impact(s) will be within New York and elsewhere. *This is one of the most important sections of your submission!*

7. LITERATURE CITED: Present the full citations for any work referenced under Section 6, where they may be labeled as (1), (2,3), etc. The space required for Section 7 is not counted under the 2-page maximum for Section 6. If no references are used in Section 6, state "none".

8. CVs: Provide a Curriculum Vita for each listed investigator (Principal Investigator, Co-Principal Investigator, Associate Investigator) with 2 page maximum per person, using the format required by NSF. Contact NYSG if you need instructions.

9. POSSIBLE PEER REVIEWERS: Starting on a new page, list the names and affiliations of four out-of-state individuals of national standing and pertinent expertise who could provide informed peer reviews of your submission. Do **not** include individuals with whom you have worked or collaborated within the last 4 years or who would be considered to have a professional or personal conflict of interest. We may or may not use these individuals, so do not contact them yourself.

The information for Section 9 is for internal NYSG use only. Like Sections 1 through 8, omitting this section will cause your submission to lose rating points.

New York Sea Grant's Call for a Great Lakes Integrated Assessment 2014-2015



(130128-finalrev)

INVITING PRE-PROPOSALS FOR an INTEGRATED ASSESSMENT

Pre-Proposal Deadline 4:30 PM Monday March 18, 2013

Anticipated Funds: up to \$75,000 per year for 2 years,
to support 1 project

New York Sea Grant strives to provide valid scientific information that will serve as the basis for furthering the sustainable development, use, protection, conservation, and management of our coastal resources. In addition to its research and extension program activities to accomplish this, New York Sea Grant is piloting an “Integrated Assessment” for New York’s Great Lakes in 2014-2015. The purpose of an Integrated Assessment project is to have a multi-disciplinary team work with existing data and materials to develop information, tools, partnerships, and management options to address a particularly challenging environmental issue.

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I. The Integrated Assessment Approach

An Integrated Assessment (IA) project will bring together a diverse group of technical experts, scientists, and stakeholders to define and evaluate policy or management options related to a particularly challenging or complex environmental problem. The challenges or complexities may be due to uncertain facts, conflicting values, high stakes, and the need for quick action. To address such a situation, the diverse skills, expertise, and involvement from an appropriate community of scientists, stakeholders and other experts would be required. Through summarizing the scientific knowledge and working through problems and perspectives, it is expected that the IA project process would lead to building consensus around potential policy or management direction.

For the purposes of NYSG's first experience with funding an Integrated Assessment, the project's approach should include the following elements:

- A. **Identify and describe the specific policy-relevant question** around which the IA is to be performed. The general topic of interest under this Call is listed below and is considered a particularly challenging area by managers and policy makers. The specific aspect or issue of this topic, to be addressed by the project team, must be identified and described in the pre-proposal.
- B. **Clarify the history, cause and consequences of the issue.** The IA project should help clarify aspects of the issue that are uncertain and are impeding action. A description of current conditions and historical trends can enhance understanding and provide a foundation for further analyses. To address the issue effectively, decision makers will need to better understand the probable causes and the environmental, social, and economic consequences of the issue.
- C. **Identify and evaluate potential options.** Projects should identify potential options addressing the issue, including policies, management actions or new initiatives, that are politically, socially, and economically feasible. An Integrated Assessment will help stakeholders compare and evaluate a suite of options, rather than recommend a single approach.
- D. **Develop tools and information that can guide decision making** and help implement potential options. If appropriate, researchers should provide an assessment of certainty levels associated with their findings to help policy makers interpret analyses or identify future research needs.
- E. **It is anticipated that the most effective way to undertake** such a project with the available budget is for faculty to assemble a team with diverse and relevant expertise who will carry out steps A-D through discussion and analyses/assessment, with the assistance of a graduate student(s).

New York Sea Grant is especially interested in pre-proposals that integrate natural and social sciences as appropriate to the specific question and issue.

The collaborative nature of an IA approach is a key characteristic for the success of a project. The participation of stakeholders throughout the project is expected. They may include local or

state policy-makers, natural resource managers, impacted businesses and other intended users of the IA's results. ***Research teams 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 may be most useful to coastal stakeholders.***

Learn More about Integrated Assessment

Additional material on Integrated Assessments, including a guide and example projects can be found at the Michigan Sea Grant website: <http://www.miseagrant.umich.edu/research/approach>.

II. NYSG's Integrated Assessment Topic of Interest for 2014-2015

After discussions with managers and others, NYSG has selected ***“Resiliency of NY's Great Lakes Recreational Harbors”*** as the topic for IA pre-proposals.

New York's Great Lakes harbor communities depend upon recreation and tourism to help sustain and grow their local and regional economies. Much of the recreational use in these harbor communities is dependent upon the availability and accessibility to Lake Erie, Lake Ontario, Niagara River, or St. Lawrence River resources by boats. Maintenance and updating of recreational harbors is a critical part of maintaining and expanding these boating opportunities. In most harbors, the need for dredging arises and this requires the expenditure of resources which federal, state, and local agencies and organizations do not readily have at their disposal. Other perceived impediments include the required permitting processes for dredging, as well as the concerns regarding the quality of the sediments (which may then impact costs as contaminants may require special disposal methods). In addition, recent weather patterns and the ongoing planning processes regarding modifications to Lake level management have raised concerns about what the impact of erosion and water levels would be on harbor infrastructure and sediment management. An Integrated Assessment in this topic area would identify and assess relevant environmental data, economics, management strategies and policies, and stakeholder concerns, and then develop options supported by social science analyses of implementation tools. The IA project and its results will assist all relevant entities in addressing the resiliency of NY's Great Lakes recreational harbors.

III. General Information about Pre-Proposal Submission

A. Who is Eligible to Submit:

Sea Grant is a national college program, so faculty at academic institutions are the main targets and 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.
2. Researchers at other not-for-profit research institutions.
3. Researchers who are personnel of state or local agencies, or of not-for-profit organizations.
4. Researchers at for-profit institutions or companies (with limits).

Important Notes: All proposals submitted under this Integrated Assessment Call for 2014-2015 must be **led** by an eligible researcher with his or her primary professional base in New York State. 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, the funding will cover two years, running from 2/1/2014 through 1/31/2016. 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 the project will be contingent on demonstrated progress.

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

The total budget request (direct + indirect costs) for a project may not exceed \$75,000 per year. Note that the budget estimates in pre-proposal submissions are expected to be realistic. A substantial increase in the final budget request will be viewed negatively and likely will result in either rejection of the project or budget cuts without changes in the scope of work.

D. Cost-Share Requirement:

Sea Grant requires 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 \$70K is requested from Sea Grant, the proposal's budget page must demonstrate an additional \$35K of non-federal cost-share. Additional cost-share (i.e., more than 50%) is encouraged and will be viewed favorably.

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. Data Management/Sharing Plan (NEW!) New NOAA regulations require that data and information collected and/or created under NOAA (including Sea Grant) grants must be made visible, accessible, and independently understandable to general users, free of charge or at minimal cost, in a timely manner (typically no later than two years after the data are collected or created), except where limited by law, regulation, policy or by security requirements.

The new requirement has two basic parts: (1) environmental and socio-economic data generated by a grant project must be made available after a reasonable period of exclusive use, and (2) the grant proposal must describe the plan to make the data available.

To comply with this new requirement, in NYSG's full proposal stage, the principal investigator must include a data management plan that describes how the project's data and metadata will be made available to others. Deposition of data in standard data archives (e.g., by discipline) or in available university archives is encouraged. This requirement for data archiving is in addition to the expected publication of research results in peer-reviewed journals. The proposed plan will be reviewed for compliance with NOAA requirements. If funds are needed for this task, they may be included in the project pre-proposal and full proposal budgets.

G. What and When to Submit:

The completed PC-readable Pre-proposal Submission Form (see Section VII) ***must be received by the deadline of 4:30 pm EDT on Monday March 18, 2013*** at NYSG's electronic submission web site: www.NYSGProposal.org. Navigate to "New York Sea Grant's Call for a Great Lakes Integrated Assessment 2014-2015" and follow all directions for electronic submission. At the pre-proposal stage, signatures of principal investigators or campus officials are not required by NYSG.

Do not include information or materials supplemental to the Pre-proposal Submission Form (e.g., full budget, appendices, letters of support, etc.). Such materials will be discarded without review.

Important notes about pre-proposal submission:

Submissions that do not include the required information will lose rating points (see Section VII for Instructions).

- Double-check your Pre-proposal Submission Form file before uploading it at the submission web site to make sure it is PC-readable and that it is your final version. *It must be in the form of a single pdf file.* You will receive an auto-receipt from the web site confirming your submission, but this is not an indication that your file is readable.
- We recommend submission via a PC at your university office, with a current version of Internet Explorer, Firefox, or Google Chrome web browser installed.
- If you have trouble with submission through www.NYSGProposal.org, call NYSG (631-632-6906) to explain the problem. We will try to help, but cannot guarantee that we can solve your problem. In any case, unless the web site (housed on the Stony Brook University server) becomes inoperable, it is *your* responsibility to use equipment that will allow you to meet the deadline.
- All submissions will be checked in the order they were posted and any that contain a virus or that are unreadable cannot be accepted. The lead investigator will be notified about this by email. However, for submissions that are posted on March 18, NYSG cannot guarantee that this check and notification will take place before the 4:30 PM deadline.
- Any submission after the deadline of 4:30 PM on March 18, 2013, cannot be accepted and its lead investigator will be notified. Please be sure to watch the time! Even if you are on the website before the deadline, if your file is not submitted by 4:30 PM, it will be too late to be accepted.

NYSG will not make exceptions to these conditions, so ***early submission is very strongly advised.*** The official time stamp on the submission is provided by the web site's server.

IV. The Review Process

All pre-proposals submitted to NYSG in response to this Call for a Great Lakes Integrated Assessment will be screened by NYSG's program management team, extension specialists, Program Advisory Council, and Science Panel of academic researchers. The following criteria will be evaluated:

- **Understanding of context and underlying issues:** Does the pre-proposal identify underlying issues; does the pre-proposal provide the right context for the underlying issues?
- **Project approach:** Does the pre-proposal address all of the elements of an Integrated Assessment? If it does not, are exceptions and gaps acknowledged and explained? Is the explanation credible?
- **Preliminary identification of relevant data sources:** Does the pre-proposal identify how data will be accessed? Does the pre-proposal reflect an effort to contact others working on this issue and identify team members or collaborators who bring data or access to data to the team?
- **Competency of the proposing team:** Does the team have members who can carry out each element of the assessment? Have team members done similar work in the past? They are not required to have Integrated Assessment experience specifically, but provide some indication they are able to assess status and trends and identify causes and consequences of, and solutions to, the issue.

Only authors of the most highly-rated pre-proposals will be invited to submit full proposals. During full proposal development, investigators will be expected to facilitate coordination with, or input from, industry, agency, or private groups as appropriate. NYSG staff will attempt to be of assistance in this process.

Full proposals will be subject to mail peer review and a Technical Review Panel. NYSG's program management team will also utilize additional input from NYSG's staff and Program Advisory Council. The National Sea Grant Program Office oversees NYSG's review processes and does not conduct a separate evaluation of individual proposals.

V. Timeline for Integrated Assessment Pre-Proposals

February 7, 2013	Call for IA pre-proposals released
March 18, 4:30 pm	Deadline for IA pre-proposals (must use NYSG submission web site)
April 11	NYSG invites selected PIs to write full proposals
June 7, 4:30 pm	Deadline for full proposals with all authorized signatures (must use NYSG submission web site)
July 31	PIs receive masked peer reviews for response
August 7	Deadline for PI responses to reviews
August 30	NYSG notifies investigators regarding funding
September 20	Deadline for revisions, final budgets and Word/Excel versions of

	successful proposal
February 1, 2014	Anticipated funding begins for the selected project
February 1, 2015	Anticipated funding continues if progress is satisfactory

VI. New York Sea Grant Staff Contacts for this Call

Research Administration (at Stony Brook University)

James Ammerman, Director (631-632-6905, james.ammerman@stonybrook.edu)

Cornelia Schlenk, Assistant Director (631-632-6906, cornelia.schlenk@stonybrook.edu)

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Great Lakes Extension Specialists (at various upstate locations)

Katherine Bunting-Howarth, Associate Director (607-255-2832 at Cornell University, keb264@cornell.edu) – coastal policy and decision-making; public participation; human dimensions of coastal management.

Helen Domske (716-645-3610 at SUNY Buffalo, hmd4@cornell.edu) – coastal education; avian botulism; Great Lakes ecosystems; emerging contaminants.

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Paul Focazio (631-632-9124, paul.focazio@stonybrook.edu) – writer, web developer.

VII. Pre-Proposal Submission Form Instructions for an IA

Be sure to use the format and provide the information as described below. **Every Section (1-9) and all of the information specified within it is required.** Submissions that do not include all of this information will lose rating points. Use all-around margins of at least 1" and a font size no less than #12 Times New Roman.

Pre-proposal Submission to the NYSG Great Lakes Integrated Assessment Call for 2014-2015

Date: _____

1. LAST NAMES OF PRINCIPAL INVESTIGATORS: (e.g., Smith / Doe / Jones)

2. BRIEF PROJECT TITLE:

3. INVESTIGATORS: List **all** principal (PI), co-principal (co-I), and associate (AI) investigators, including name, mailing address, telephone, and email for each. ***Also*** indicate eligibility category (#1, 2, 3, or 4) from the Call's Section III.A for each. The primary professional base of the lead investigator must be in New York State. Students and NYSG staff cannot have PI, co-I, or AI status.

4. BUDGET: Totals of direct plus indirect costs.

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

Year One \$ _____ Year Two \$ _____ Total Request \$ _____

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

Year One \$ _____ Year Two \$ _____ Total Match \$ _____

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

Year One:

Year Two:

D. Data Management Plan: Indicate your recognition that an acceptable data management/sharing plan will be required as part of a full proposal, that compliance with the plan will be required if the project is funded, and that the pre-proposal's budget estimate provides for this. _____ yes.

5. BRIEF DESCRIPTION OF PROJECT: Starting on a *new* page, **use no more than three pages** with the following a-h headings to describe your proposed Integrated Assessment (IA) project. Use all-around margins of at least 1" and a font size no less than #12. Anything beyond three pages will be discarded prior to review.

a) **BACKGROUND:** Provide a brief description of the IA project you propose to address the topic in Section II, demonstrating awareness of the main issues and identifying potential

stakeholders. Include the origin of the specific issue(s), an explanation of why it's a complex problem, and who is or should be involved.

- b) **OBJECTIVES:** Briefly state the IA project objectives.
- c) **GEOGRAPHIC FOCUS:** Please identify the geographic scope of the project and why it is appropriate for the IA topic.
- d) **CHARACTERIZE THE SOLUTION POSSIBILITIES:** What are the potential options that could be considered such as management actions, education, outreach programs, legislation, regulations or other initiatives.
- e) **YOUR DRAFT IA QUESTION:** Develop a draft question for your IA project using this pattern: What are the causes, consequences and correctives of <<natural resource problem>> at << geographic location(s) >>?
- f) **PROJECT APPROACH:** Provide an overview of how you intend to develop the Integrated Assessment so reviewers can determine appropriateness of the approach for achieving the stated objectives. It is not necessary to explain analytic methods in detail.
- g) **INVESTIGATORS AND COLLABORATORS:** Identify the project investigators and individual responsibilities in a table (see below). Below the project team, provide the names and affiliations of all persons and institutions you intend to recruit as collaborators. Note that it is not necessary at this time to contact or secure a commitment from these individuals and organizations.

Name	Institution/Organization	Role (Team member, collaborator, other)	Responsibilities

- h) **DATA AND DATA SETS:** Funds from New York Sea Grant should primarily support analyses and communication of existing data, rather than collection of new field data. Stakeholder surveys, focus groups, observations and interviews are permitted if used to support the goals of the Integrated Assessment process. Please identify any existing data sets you plan to use, their owners and how you intend to access the data. You may also indicate your knowledge of closely related projects, briefly identifying those projects and their principal investigators.

6. LITERATURE CITED: Present the full citations for any work referenced under Section 5, where they may be labeled as (1), (2,3), etc. The space required for Section 6 is not counted under the 3-page maximum for Section 5. If no references are used in Section 5, state "none".

7. BIO-SKETCHES: Provide a bio-sketch for each listed investigator with a two page maximum per person. Include relevant project experience and publication citations.

8. POSSIBLE PEER REVIEWERS: Starting on a new page, list the names and affiliations of four out-of-state individuals of national standing and pertinent expertise who could provide informed peer reviews of your submission. Do **not** include individuals with whom you have worked or collaborated within the last 4 years or who would be considered to have a professional or personal conflict of interest. We may or may not use these individuals, so do not contact them yourself.

The information for Section 8 is for internal NYSG use only. Like Sections 1 through 7, omitting this section will cause your submission to lose rating points.

NORTHEAST SEA GRANT COLLEGE CONSORTIUM CALL FOR PRELIMINARY REGIONAL PROPOSALS 2014-2016 OMNIBUS FUNDING CYCLE

Human Dimensions of Coastal and Marine Ecosystems

Recognizing that some issues are best addressed at the regional scale, the Sea Grant Programs in the Northeast (New York, Connecticut, Rhode Island, MIT, Woods Hole, New Hampshire, and Maine), through the Northeast Sea Grant Consortium, have set aside funds (approximately \$350,000) for social science research proposals that have relevance to the Gulf of Maine and Greater New York Bight regions (from the Canadian Border to Cape May, NJ).

- Research period: February 1, 2014 to January 31, 2016
- Duration of project: one or two years
- Funds requested from Sea Grant should not exceed \$100,000 per year; 50% match required.
- Up to \$700,000 may be available for this call for proposals.
- Only projects that are regional in nature will be considered for funding.
- Pre-proposal deadline: 5:00 p.m. EST, Friday, February 22, 2013
- Full proposal deadline: 5:00 p.m. EDT, Monday, June 3, 2013

Topic Areas

Through this competition, the Northeast Sea Grant Consortium seeks to support social science research relevant to regional coastal and ocean management. Pre-proposals are welcome from any social science discipline, and will be assessed in terms of originality, technical merit and relevance.¹ Priority will be given to social science research that:

1. Links social sciences to natural science research or data
2. Addresses the interface between natural and human systems
3. Relates to ecosystem-based management approaches, marine spatial planning, or the understanding or valuation of policy relevant ecosystem services.²
4. Engages with research end-users (e.g., policymakers, stakeholders) to enhance the relevance, utilization and societal impacts of the research results.

While case studies are suitable for funding under this RFP, it is expected that all funded projects will have some implications which reach beyond the case study context to broader regional research or policy challenges.

We seek pre-proposals that address topics including, but not limited to:

- Development of decision-support tools that help stakeholders conceptualize or evaluate the trade-offs of future scenarios in coastal communities.

¹ Other assessment criteria may include such factors as investigator qualifications and cost-effectiveness of the research plan.

² See, for example, priorities identified in the Gulf of Maine Strategic Regional Ocean Science Plan (see http://seagrant.mit.edu/rosi/draft_final_rop.pdf). While a final plan for the Greater New York Bight Regional Ocean Science Planning initiative is not yet available, information on the workshops leading to the plan can be found on the project web site (see <http://web2.uconn.edu/seagrantnybight>).

- Evaluation of the effectiveness of current governance institutions and regulatory frameworks and their associated implications for compliance and enforcement in coastal and marine ecosystems.
- Socioeconomic research in support of management decisions which address the balance among economic development, ecosystem protection and sustainability.
- Socioeconomic paradigms in management and governance to improve coastal management.
- Contribution to better understandings of ecosystem services through the development of data collection tools, models, and valuation indices.
- Advancement of our understanding of the vulnerabilities and resiliencies of coastal communities to a changing environment and economy, especially in light of recent storms (e.g., hurricanes Irene and Sandy).
- An assessment of environmental change and coastal community adaptation with implications for the development of offshore renewable energy.
- Socioeconomic consequences of introducing a new ocean or coastal use, such as renewable energy (wind, wave, or tidal).

Duration and Funding

Proposed activities may be of one or two years in duration, for the period between February 2014 and January 2016. The pre-proposal budget should not exceed \$100,000 per year in Sea Grant funds, including all direct and indirect costs. In addition to Sea Grant funds, there is a 50% matching requirement, i.e. \$1 in non-federal match is required for every \$2 requested from Sea Grant. Therefore, the maximum annual budget is \$100,000 in Sea Grant funds with a mandatory \$50,000 non-federal match. The project scope should reflect the available funds. It is expected that 5-8 projects will be funded. Sea Grant support is awarded on a competitive basis, and is available to researchers at all non-profit academic institutions, research laboratories, and extension/outreach facilities in the Northeast.

PRELIMINARY PROPOSAL GUIDELINES

A preliminary proposal, while not as detailed as a full proposal, should clearly define the objectives, rationale, and methodology for the project, as well as the potential benefits and qualifications of the investigators who would perform the work. Pre-proposals requesting funding that is complementary to that sought from other sponsors are welcome. In this case, other funding sources and amounts should be disclosed.

A preliminary proposal should consist of a single file which includes:

1. a preliminary proposal cover sheet,
2. a project description of up to 3 single-spaced, single-sided pages of text in 11 point font or larger,
3. a reference list,
4. a budget outline for each year.

No appendices or other attachments are permitted.

The preliminary proposal cover sheet should include:

1. For each of the principal investigators, co-principal investigators, and associate investigators, provide:
 - a) names

- b) affiliations
- c) contact information (telephone and email)
- 2. A brief project title,
- 3. Total project budget including direct plus indirect costs.

The preliminary proposal project description must not exceed 3 pages, including minimum 1-inch margins and 11-point font. The project description must include subsections which describe the:

- 1. Objectives,
- 2. Rationale,
- 3. Methodological approach,
- 4. Expected outputs of the project,
- 5. Relevance to the regional priorities and thematic areas identified in this RFP

Illustrations and tables, if included, must be of legible size, and are *included* in the page limitation.

References cited may be included as a separate section, and are *not included* within the stated page limits.

Submission Process:

Regional pre-proposals must be submitted through Woods Hole Sea Grant no later than **5:00 p.m. EST on Friday, February 22, 2013**. Investigators must submit by e-mail an electronic copy of each preliminary proposal. Electronic files *must* be a single Microsoft Word or Adobe PDF format file and *must* be sent by email to seagrants@whoi.edu. You must specify “Regional Sea Grant Proposal” in the subject line. Regional pre-proposals will NOT be accepted through individual state Sea Grant programs. Pre-proposals should include all information in the submission guidelines and clearly indicate all co-PIs involved, Sea Grant programs involved, and budget information. *Preliminary proposals that are not received by the 5:00 p.m. EST deadline will be returned without review.* Hard copy and faxed submissions, in addition to preliminary proposals that fail to comply with content, format and length requirements, will not be accepted. Unless otherwise required by your institution, we do not require that University (or institutional) sponsored programs offices formally approve preliminary proposals prior to submission.

Each pre-proposal must be submitted with the total aggregate budget for the project. No individual state budget is requested.

Evaluation Criteria

The Northeast Sea Grant program directors will convene a panel to review the pre-proposals for:

- a. Their responsiveness to the priorities of the New York Bight and Gulf of Maine plans, including those identified in this RFP;
- b. Their overall approach, including clarity of hypotheses, research questions and/or conceptual framing, novelty or originality of the proposed project and adequacy/feasibility of the methodologies as outlined;
- c. Their potential to provide impact at a regional scale, and should preferably address issues applicable to the New York Bight as well as the Gulf of Maine.

Only those prospective principal investigators with the highest-ranked preliminary proposals will be encouraged to submit full proposals. Comments relating to the evaluation of each pre-proposal will be disseminated to each primary author on or before April 17, 2013. The deadline for full proposals is Monday, June 3, 2013 at 5:00 p.m. EDT.

For more information, see <http://www.whoi.edu/seagrant/page.do?pid=34015> or contact:

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Woods Hole Sea Grant College Program
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Funding Announcement

2014-2016 Mid-Atlantic Sea Grant Regional Research Request for Proposals

Pre-proposals due March 15, 2013



Mid-Atlantic Sea Grant Regional Research Request for Proposals

Pre-proposal Deadline: March 15, 2013

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SUMMARY

Recognizing that many research questions cross state boundaries, the Mid-Atlantic Sea Grant programs are jointly releasing this request for proposals for collaborative and integrative research across the region that supports the Sea Grant mission. The participating state programs are New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina. Investigators are encouraged to define the region as appropriate for their research question, but projects must include two or more participating Mid-Atlantic states and proposals that include teams from three or more states are of particular interest. Projects should address issues of regional scale, but must also be relevant to the investigators' home states (i.e., proposals must be consistent with the investigators' states' Sea Grant strategic plans). Proposals should address one of the following four topics: (1) climate impacts and adaptation; (2) coupled social-ecological systems science that links social science and natural science research; (3) land-estuarine or land-sea interactions; or (4) cross-disciplinary, integrative research that analyzes and synthesizes existing data to address major, large-scale issues of relevance to coastal and marine communities. Within these four focus areas, the RFP seeks to answer regional-scale research questions by bringing together integrative research teams that can develop innovative ideas and approaches. Successful proposals will demonstrate a high degree of integration and clear mechanisms for regional interaction and coordination.

Available funds are tagged to the home states of the proposed research team (see details under Award Information below). Up to \$840,000 is available for a two-year award (for a project that includes all seven states in the Mid-Atlantic region, although proposals from two or more states are eligible); 50% non-federal match is required. The award period is February 1, 2014–January 31, 2016. Investigators are required to follow the eligibility requirements and proposal guidance of their state Sea

Grant programs. Pre-proposals are due March 15, 2013, at 5:00 p.m. EDT to Virginia Sea Grant via its online submission system eSeaGrant (<https://evaseagrant.vims.edu/RFP/proposals/>).

IMPORTANT NOTES FOR INVESTIGATORS

- Please contact your state Sea Grant programs early in the process to discuss potential ideas and the RFP process.
- While a single multi-state proposal will be submitted to Virginia Sea Grant by the lead principal investigator, collaborative, cross-state teams are expected and co-investigators must conform to all funding levels and expectations of their home state Sea Grant programs.
- Successful proposals will be relevant to both individual states and the Mid-Atlantic region, integrate across disciplines and/or functions, and have a strong plan for transferring knowledge and benefits to end users.
- Please be mindful of the deadlines (deadlines in this regional RFP may not be the same as deadlines under individual state Sea Grant program RFPs); no late proposals will be accepted under any circumstances.

INTRODUCTION

Sea Grant is a nationwide network (administered through the National Oceanic and Atmospheric Administration [NOAA]) of 33 university-based programs that work with coastal communities. This network is engaged in conducting scientific research, education, training, and extension projects designed to foster science-based decisions about the use and conservation of our aquatic resources.

While each Sea Grant program primarily supports research within its own state relevant to the state's unique needs, we recognize that many research questions cross state boundaries, as well as disciplinary boundaries (see, for example, regional research priorities outlined by the Mid-Atlantic Regional Ocean Research Plan, <http://www.midatlanticoceanresearchplan.org/>; the Mid-Atlantic Regional Council on the Ocean, <http://www.midatlanticocean.org/>; the Mid-Atlantic Regional Fishery Management Council, <http://www.mafmc.org/>, the Mid-Atlantic Regional Association Coastal Ocean Observing System <http://maracoos.org/>; and other regional organizations).

Thus, the Mid-Atlantic Sea Grant programs (New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina) are jointly releasing this request for proposals (RFP) for collaborative and integrative research within the Mid-Atlantic region that supports the Sea Grant mission.

Updated information on this RFP (e.g., full proposal guidance) will be maintained at Virginia Sea Grant's research opportunities website: <http://vaseagrant.vims.edu/research-opportunities/>.

REGIONAL RESEARCH PROGRAM DESCRIPTION

The Mid-Atlantic Sea Grant programs are interested in funding regional projects that include investigators from at least two of the participating Mid-Atlantic states. The intent of the RFP is to support

large-scale regional research of relevance to the entire Mid-Atlantic. Within the geographical boundaries provided, investigators are encouraged to define the region as appropriate for their research question (i.e., projects may include anywhere from two to seven participating Mid-Atlantic states).

Projects should address issues of regional scale, but must also be relevant to the investigators' home states (i.e., align with state Sea Grant strategic plans and priorities). Successful proposals will demonstrate strong collaboration and integration between team members in the region. We expect to fund one regional project for 2014-2016, although multiple projects may be possible depending upon funding requests and team compositions.

The Mid-Atlantic Sea Grant programs recognize that this type of collaborative proposal will likely require the formation of new research and research-outreach-end-user teams. In addition, investigators will be required to comply with the funding guidelines of their home states in developing their proposals. Therefore, additional up-front proposal planning time has been built into the timeline. Furthermore, investigators are strongly encouraged to contact their respective state Sea Grant programs to discuss ideas early in the pre-proposal development process.

REGIONAL FUNDING PRIORITIES

All proposals must be consistent with the goals of each investigator's state Sea Grant strategic plans (see Additional Information section for links to each program's website and current priorities). Investigators are also encouraged to reference regional needs such as those identified in the new Mid-Atlantic Regional Ocean Research Plan (<http://www.midatlanticoceanresearchplan.org/>). Proposals must address one (or more) of the following four topics:

- Climate impacts and adaptation (e.g., sea level rise adaptation solutions);
- Coupled social-ecological systems science that links social science and natural science research (e.g., science related to fisheries management, marine spatial planning, water quality and quantity management, quantifying socioeconomic benefits of ecosystem services);
- Land-estuarine or land-sea interactions (e.g., watershed-wide nutrient research and management, freshwater-marine and estuarine-ocean interactions); or
- Cross-disciplinary, integrative research that analyzes and synthesizes existing data to address major, large-scale issues of relevance to coastal and marine communities.

All proposals are expected to describe how research results will be translated into useful information for coastal managers and stakeholders throughout the proposal's described region, and beyond if applicable.

Within these four focus areas, the RFP seeks to support research that brings together research teams that can develop innovative ideas and approaches. Successful proposals will meet some or all of the following criteria:

- Integration across disciplines (i.e., teams that cross social and natural science boundaries), across functions (i.e., teams that include expertise in research, extension, education, and communication), and/or across expertise (i.e., teams that include investigators or collaborators with expertise in outreach or who are end-users).

- Demonstration of synergistic regional benefits—in addition to achieving expectations of individual states (e.g., state-specific strategic plan priorities and performance measures), the investigators should produce and report on broader synergistic benefits on the regional scale.
- Mechanisms for transferring of knowledge or findings to other systems within and outside the region.

AWARD INFORMATION

The award period for this regional research project is February 1, 2014—January 31, 2016. Up to \$840,000 is available for a two-year award (for a project that includes all seven states in the Mid-Atlantic region, although proposals from two or more states are eligible), contingent on available federal funds. The Mid-Atlantic Sea Grant programs require a 50% funding match by state (i.e., the proposal budget for each state must show \$1 of match for every \$2 of Sea Grant funding requested). Only non-Federal funds may be committed as matching contribution. Full federally-negotiated indirect cost rates are allowable. We expect to fund one regional project through this RFP (although two or more projects may be funded, depending upon the state programs involved in the proposal and the available state Sea Grant program funding). Within a multi-state proposal with a single lead investigator, co-investigators or collaborators from an individual state are subject to the funding levels and conditions in their home state (e.g., restrictions on use of funds) for their portion of the overall multi-state proposal. Thus, the maximum award that a project is eligible for will depend on the number of collaborating states in the successful project(s) and those states' maximum award levels. For example, a project involving investigators in Delaware, Maryland, and Virginia can request up to \$420k with the potential for additional funding to support a graduate student in Delaware. As general guidance, the table on the following page lists maximum award levels and proposal conditions for each state; each investigator is required to follow their state's conditions and any additional budget guidance provided by their state Sea Grant programs.

While the funded regional project should be managed as a single cohesive project, as a practical matter each state team will receive a separate award from their state Sea Grant program. Therefore, teams will submit a single cohesive proposal that includes a separate two-year funding request for each state and a separate description of activities for each state team (see pre-proposal format and submission instructions below). Note that pre-proposal estimates are expected to be realistic; a substantial increase in the final budget request will be viewed negatively and will likely result in rejection or budget cuts.

New NOAA regulations require that data and information collected and/or created under NOAA (including Sea Grant) grants must be made visible, accessible, and independently understandable to general users, free of charge or at minimal cost, in a timely manner (typically no later than two years after the data are collected or created), except where limited by law, regulation, policy or by security requirements. The new requirement has two basic parts: (1) environmental and socioeconomic data generated by a grant project must be made available after a reasonable period of exclusive use, and (2) the grant proposal must describe the plan to make the data available. A data management plan will not be required until the full proposal stage; at the pre-proposal stage, PIs should consider if funds are needed for this task and include this in the project pre-proposal and full proposal budgets.

State	Max award	Conditions—apply to investigators from participating state
New York	\$70,000/year (\$140K total)	•NYSG funds available only for investigators from NY. •Contact NYSG about seeking Scholar status for graduate students, as this would have financial benefits for the project.
New Jersey	\$70,000/year (\$140K total)	•NJSG funds available only for investigators from NJ. •NJSG requires graduate or undergraduate student involvement in funded research, with significant research roles and budget support.
Pennsylvania	\$20,000/year (\$40K total)	•While PASG funds could be used to support a non-PA investigator as long as the research is clearly relevant to PA, participation by PA investigators is strongly encouraged.
Delaware	\$70,000/year (\$140K total)	•DESG funds available only for investigators from DE. •In addition to the \$70K/year for two years, funds can be requested from DESG to support a graduate student on the DE investigators' project.
Maryland	\$70,000/year (\$140K total)	•MDSG funds available only for investigators from MD. •MD PIs on any proposal accepted for funding must submit the accepted proposal and approved MD PIs' project summary (90-2), budget (90-4), and budget justification for the MD portion of their project to MDSG. PIs must use the MDSG online forms and contact MDSG to receive login information for using our online system. Routing procedures consistent with MD PI requirements must be followed and signed approvals provided to MDSG with the submission of the final project.
Virginia	\$70,000/year (\$140K total)	•VASG funds available only for investigators from VA.
North Carolina	\$50,000/year (\$100K total)	•NCSG funds available only for investigators from NC. •In addition to the \$50K/year for two years, funds can be requested from NCSG to support a graduate student on the NC investigators' project.
TOTAL	\$420K/year (\$840K total)	

ELIGIBLE APPLICANTS

Proposals must include investigators from at least two participating Mid-Atlantic states. Projects that address the whole of or a large portion of the Mid-Atlantic and that include three or more states are of particular interest. Please also note any eligibility requirements for the applicable state programs.

PRE-PROPOSAL FORMAT AND SUBMISSION

Pre-proposals will be used to evaluate the research concept and its importance, relevance, potential impact, and feasibility. The pre-proposal should be a concise description of the problem being addressed, the general approach being used, including the strategies to advance integration, and the synergistic benefits and applications of the project's outcome, if funded.

Investigator teams will submit a single cohesive pre-proposal with a single lead PI from one state and co-PIs or collaborators from each of the other involved states. While a single pre-proposal will be

submitted, investigators from each state may need to receive signatures from their home institutions, as appropriate to their institutions' policies. By submitting a pre-proposal, the investigators certify that they have received all necessary reviews and authorizations.

An investigator is not encouraged to submit more than one regional pre-proposal on which s/he is the lead principal investigator (PI), although there is no limit on the number of pre-proposals on which an investigator serves as a co-investigator or collaborator.

Format and Content. A pre-proposal consists of the following (see detailed submission instructions in eSeaGrant, <http://evaseagrant.vims.edu/RFP/proposals/>):

1. Investigator Information. Detailed contact information and a 2-page (maximum) CV are required for each investigator. CVs must be submitted as PDFs.
2. Project Summary Information. Enter project title and proposed start and end date. The award period for this RFP is February 1, 2014—January 31, 2016. If appropriate, submit names of additional (non-PI) personnel who will be involved in the project.
3. Project Narrative. The narrative must be submitted as a single PDF file. There is a 5-page maximum including any graphical elements, using 12-pt font, 1-inch margins, and single spacing. Institutional transmittal letters and literature cited are not included in the 5-page maximum. The narrative should include the following elements.
 - a. Transmittal Letter (optional). If appropriate, institutional transmittal letters or cover sheets may be submitted as part of the narrative, and they will not count toward the page limit.
 - b. Funding Request. An estimated total funding request is required for each state and for the overall project. This estimate should include indirect costs and a separate estimate of match. A detailed budget and budget justification are not required at the pre-proposal stage. See the “Award Information” section of this RFP for additional guidance.
 - c. Abstract. Briefly describe the proposed work, with emphasis on the importance, relevance, application, and value to Sea Grant constituents (300 word maximum).
 - d. Background/Rationale. Describe the need for the proposed project, any relevant background information, and how the proposed project addresses regional-scale issues. The rationale should clearly describe the societal needs being addressed by the research and the relevance to the involved states and the region as a whole, if applicable. This section should also clearly outline how the project will be responsive to the RFP (e.g., regional in scope, integrative and cross-cutting) and reference the specific regional priorities and the state Sea Grant strategic plan priorities being addressed by the proposed work.
 - e. Objectives. List the objectives of the proposed project, including the unique integrative and synergistic components of the project, and briefly describe how the project advances the state of knowledge in the field. Be careful to state the purpose of the work rather than list project activities or tasks.
 - f. Approach. Describe the general approaches, techniques, and methods that will be used to meet the stated objectives. The approach section must also include a description of how project management and implementation will advance integration. A detailed description

- of methods would be encouraged in a full proposal and should not be a significant portion of the Approach section of a pre-proposal.
- g. Anticipated Synergistic Benefits. Describe the results to be achieved by the project and how these results relate to current knowledge of the proposal topic. This section should illustrate both the additional synergistic benefits achieved by conducting an integrated, multi-disciplinary research project, as well as any discipline-specific advancements in the state of knowledge.
 - h. Information Transfer and Adoption. Discuss how the information generated or technology developed will be transferred to and adopted by a broader community, including government policy makers and resource managers, industry members, citizens, and educators, and how the broader community will benefit. Specific information about the outreach, education, and dissemination strategies to be used to reach end-users should be included.
 - i. Partners and Research Team. Briefly list the research team and their roles and responsibilities. This should include both the roles of the members from each state and how the team will coordinate.
 - j. Literature Cited. Not included in the page maximum.
4. Suggested Reviewers (optional). Investigators may provide the names and contact information for suggested reviewers.

Pre-proposals must be submitted to Virginia Sea Grant via eSeaGrant (<https://evaseagrant.vims.edu/RFP/proposals/>). Detailed submission instructions can also be found on eSeaGrant. All pre-proposals must be submitted by 5:00 p.m. EDT on Friday, March 15, 2013. The eSeaGrant system will shut down automatically at the deadline, locking out any late submissions; investigators must hit “Submit Proposal” before the deadline for the proposal to be processed. Incomplete or late pre-proposals will not be accepted; no exceptions will be made.

PRE-PROPOSAL REVIEW PROCESS

Pre-proposals will be reviewed primarily for their relevance to the involved states and the Mid-Atlantic region as a whole, and their responsiveness to the regional RFP. All pre-proposals will be reviewed by the individual states for relevancy following the state’s standard relevancy review procedures. A regional panel consisting of Mid-Atlantic Sea Grant directors (and appropriate staff) will also review the pre-proposals according to the evaluation criteria below. The Sea Grant directors will meet to consider their relevancy reviews and make decisions on pre-proposals to encourage for full proposal. The regional panel review aims to identify promising proposal concepts with high likelihood of success in the full proposal review process. It is anticipated that 3-5 pre-proposals will be encouraged to submit full proposals, although any pre-proposal can be submitted as a full proposal. Virginia Sea Grant employs a stringent conflict of interest policy throughout the review process. The criteria for review are:

- Relevance and potential for impact across the region and in the states (to be evaluated by each state). Each state will conduct a relevancy review following their state process (e.g., review by state stakeholders) for the pre-proposals involving their own states. While the specific review

may vary by state, the criteria will focus on whether the pre-proposal addresses a societal problem that has a clear significance to both the Mid-Atlantic region and participating states, and is responsive to the RFP. Does the proposal address large-scale regional questions? Does the rationale address identified needs of the states and the region, and are the outcomes likely to help address those needs? Will addressing the problem have a real and synergistic/multiplier impact in the involved states and the region? Will the anticipated benefits likely improve the effectiveness of coastal and marine resource decision-making by end-users? Are there clear deliverables of importance to end-users? What is the likelihood that the proposed information transfer and adoption strategies will broaden the impacts beyond immediate partners? Reviewers may also consider the innovativeness of the project, including the degree to which novel approaches are proposed to solve problems or to focus on new opportunities; it is anticipated that novel strategies and new research teams will be formed to meet the integrative research funding priorities of this RFP. The Mid-Atlantic Sea Grant Directors will conduct a relevancy review across all pre-proposals, emphasizing the regional dimensions of the proposed project. In addition to achieving expectations of individual states (e.g., state-specific strategic plan priorities and performance measures), the project should demonstrate broader synergistic benefits and relevance across the Mid-Atlantic region.

- Integration. The proposal should illustrate integration across disciplines (i.e., teams that cross social and natural science boundaries), across functions (i.e., teams that include expertise in research, extension, education, and communication), and/or across expertise (i.e., teams that include investigators or collaborators with expertise in outreach or who are end-users). How effectively does the proposed project demonstrate a cohesive and novel collaboration that crosses geopolitical boundaries, disciplines, and functions? Does the integrative research project illustrate synergistic benefits greater than the sum of their parts? Do the investigators clearly describe how they will coordinate and integrate their efforts? Will there be future opportunities for expanded collaboration and synergistic impacts? Does the integration advance fundamental understanding or solve problems whose solutions are beyond the scope of a single discipline, area of research, or functional area (i.e., research, outreach, communication)? The extent of leveraged expertise, capacity and resources through partnerships and collaborative efforts with end-users will be considered. Reviewers may also consider the degree to which the project will advance the state of the science.
- Appropriateness of scientific and technical approach. A pre-proposal will not contain sufficient detail to make a full scientific and technical merit determination; thus this pre-proposal review criteria aims to identify any significant concerns that could fundamentally undercut the viability of the project. Are the objectives clear and attainable from the general research design in the pre-proposal? In addition, the proposal should have an effective approach to the transferability of knowledge or findings to other systems within the region.

Based on these evaluation criteria, the regional panel will decide which investigators are encouraged to submit a full proposal; regardless of the recommendation, any investigator team that has submitted a pre-proposal is eligible to submit a full proposal. Virginia Sea Grant will notify the principal investigator regarding the outcome of the pre-proposal review and will provide review comments, as appropriate; it will be the PI's responsibility to notify all collaborating partners. Instructions for preparations of full proposals will be provided at that time.

QUESTION AND ANSWER SESSIONS

Virginia Sea Grant will host two informational webinars to answer questions regarding this new competition. In addition to contacting their state Sea Grant programs, investigators who are interested in this RFP are encouraged to participate in one of the scheduled sessions to hear an overview of the RFP goals, priorities, and submission and evaluation process, as well as to ask questions.

Webinar information

Webinar 1: January 28, 2013, 2 p.m. EST

Webinar 2: February 5, 2013, 10 a.m. EST

Webinar link: <http://vims.adobeconnect.com/regionalrfp/>

Audio will not be broadcast over the Adobe Connect website. Call-in information for audio will be provided once you log in to Adobe Connect.

TIMELINE

RFP Release.....	January 15
Pre-proposal Discussion with Sea Grant Programs.....	As soon as possible
Q&A sessions.....	January 28 (2:00 p.m. EST) February 5 (10:00 a.m. EST)
Pre-proposal Deadline.....	March 15 (5:00 p.m. EDT)
Notification of Pre-Proposal Panel Results.....	~April 15
Full Proposal Deadline.....	July 1 (5:00 p.m. EDT)
Notification of Full Proposal Panel Results.....	~September 15
Award Period.....	February 1, 2014—January 31, 2016

FOR ADDITIONAL INFORMATION

Investigators should contact their state Sea Grant programs for more information.

Delaware Sea Grant College Program

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302-831-8087

merrillj@udel.edu

<http://www.deseagrant.org>

Maryland Sea Grant

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New Jersey Sea Grant Consortium

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New York Sea Grant

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<http://www.nyseagrant.org> (and see current research priorities 1.1-7.1 on pages 3-4 of <http://www.seagrant.sunysb.edu/funding/pdfs/NYSGCall14-15-preprop.pdf>)

North Carolina Sea Grant

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Pennsylvania Sea Grant

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Virginia Sea Grant: Administrative Lead for Mid-Atlantic Regional Sea Grant RFP

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CALL FOR PRELIMINARY PROPOSALS 2013-2014 LONG ISLAND SOUND MULTI-DISCIPLINARY RESEARCH

OPENING DATE: March 30, 2012

CLOSING DATE: June 8, 2012

Connecticut Sea Grant (CTSG) and New York Sea Grant (NYSG) announce the Long Island Sound Study (LISS) extra-mural research program. The intent of this program is to fund research that will support the management of Long Island Sound (LIS) and its resources. The LISS is a regional, community-based partnership to protect and restore LIS. Information on the LISS can be obtained at www.longislandsoundstudy.net. **NOTE** that the emphasis, approach, and funding levels for this cycle of the LISS Research Grant Program differ from prior years. Respondents are urged to read the RFP carefully.

Preliminary proposals are invited for the funding period of March 1, 2013 to February 28, 2015. Any investigator seeking support for this period (or portion thereof) must submit a preliminary proposal via NYSG's electronic submission web site www.NYSGProposal.org for receipt by **5:00 p.m. EDT on June 8, 2012**. Hard copy, email, and fax submissions will **NOT** be accepted. With approximately \$800,000 expected to be available, it is anticipated that two or three projects will be supported. The first year of the funding period covered by this Call for Proposals begins on March 1, 2013. Allocation of Year 2 funds will be contingent on satisfactory progress in Year 1.

1. Emphasis and Topic Areas

There is a strong need for integration and synthesis of our understanding of coastal and estuarine systems to better support ecosystem-based management. Locally, this need is driven by increased amounts of data and information about LIS, and the complexity of new and enduring challenges such as climate change, invasive species, coastal and watershed development, emerging contaminants, fisheries management, and nutrient pollution. There is also a demand that science be understood and applied more effectively to address these challenges efficiently in a world of limited public resources.

As a result, the purpose of this RFP is to ***support multi-disciplinary research that can provide explanations, models, or tools to understand and forecast the response of LIS to anthropogenic stressors and to address management measures intended to prevent, reduce, or mitigate these anthropogenic stressors.*** Various methods can be used, but four are listed here (Kemp and Boynton, 2012) as examples of how multi-disciplinary topics might be handled.

1. Comparative cross-system analysis that evaluates similar data from different areas to develop a model that quantifies how one or more key property or process varies in relation to external drivers or internal properties.
2. Analysis of time-series data to understand the drivers of key ecological properties.
3. Cross-boundary flux balances to understand the processes that control changes in chemicals, energy, or other matter within LIS and its watershed.
4. Simulation modeling to relate temporal and spatial patterns in LIS to the physical, biogeochemical, and biological controls on the ecosystem processes.

Other combinations of data collection and methods of synthesis are possible, too.

The **Topic Areas** to be supported in this funding cycle, and to which these methods of integration and synthesis should be directed to focus a multi-disciplinary approach, are listed below (in no particular order):

I. Water Quality Impairments

- A. Identify and assess the conditions and causes of one or more water quality impairments and with those results provide suggestions for remediation strategies. The project must develop or identify clear linkages among stressors and impairments, or dispel putative linkages. Examples of impairments include hypoxia, harmful algal blooms, pathogen contamination, and toxic contamination. Examples of stressors include watershed conditions and pollutant loading sources.
- B. Determine the relative impacts of various processes and stressors in their influence on impairing the conditions of embayments and with those results identify priorities for remediation. Examples of potential stressors to compare include septic systems, stormwater, fertilizer, atmospheric deposition, groundwater, and inputs from Long Island Sound proper.

II. Habitat Protection and Restoration to Support Living Marine Resources

- A. Evaluate current conditions and trends in key habitats and identify the critical factors controlling those habitats' quantity, quality, and function in supporting living marine resources, so as to provide information useful for protection or restoration of those characteristics. The project must develop or identify clear linkages among stressors and impairments, or dispel putative linkages. Examples of key habitats include SAV and tidal wetlands.
- B. Evaluate and compare the effectiveness of habitat restoration techniques in terms of restoring or providing ecosystem service functions to support living marine resources. Examples of habitat restoration techniques include restoring tidal flow to marshes, restoring riparian vegetation along stream banks, and eliminating invasive species from coastal forests or grasslands. Examples of ecosystem service functions include supporting species diversity, abundance, and reproductive success; nutrient processing; and productivity.
- C. Identify the relationships among anthropogenic stressors to LIS and their subsequent combined effects to explain observed trends in abundance and distribution of habitats and important living marine resources and use this

information to suggest feasible management responses, including adaptations. Examples of anthropogenic stressors include climate change, fishing pressure, toxic substances, and watershed and coastal development pressures.

Applicants must specify by the alphanumeric identifier (e.g., II.B) which topic area their proposal addresses. **Applicants must clearly identify and provide specific examples of how their research projects can inform management decisions and help to address impairments to LIS. General statements of the value of the information generated from the proposed research will not be compelling.**

2. Duration and Funding

The program anticipates awarding approximately \$800,000 to cover the entire duration of all selected projects. Projects may extend for two years, but projects of shorter duration are also welcome. **The maximum amount of funding available per project is \$200,000 per year and this must include all direct plus indirect costs.** Proposals that exceed this amount will be discarded without review. Matching funds (from state, private, or any non-federal sources) are desirable, but are not required. Total requested funding must include direct and indirect costs and may not exceed \$400,000.

3. Eligibility

Proposals from the following eligible categories will be considered for funding:

- A. Faculty at universities and colleges,
- B. Researchers at not-for-profit institutions,
- C. Researchers who are personnel of state or local agencies, and
- D. Researchers at for-profit institutions or companies.

Eligibility is not limited to individuals from New York and Connecticut. However, the primary professional base of the lead investigator must be in the United States. U.S. citizens located in other countries are not eligible. Federal employees and institutions are not eligible to receive compensation, equipment, or budgeted items of any sort, but they may be involved with the project. Students and NYSG and CTSG staff cannot have Principal Investigator, co-PI, or Associate Investigator status.

4. Review

All pre-proposals that meet all of the specified requirements will be screened by a Panel established by CTSG and NYSG that will include scientific peers from unaffiliated institutions and one representative each from CTSG, NYSG, EPA, NYSDEC and CTDEEP. The Panel will use the following criteria and scoring in rating pre-proposals:

- A. Responsiveness to the Topic Areas identified in the Call (0-5)
- B. Likelihood that the project will be successful in fulfilling its objectives (0-5)
- C. Usefulness of the anticipated results, as described in the submission, to inform and direct management of LIS and its resources (0-5)

Pre-proposals with an average score of 2 or less in **any** of the three criteria (A, B, or C) will result in that submission being considered “out” of the competition. The remaining pre-proposals will be ranked on their average total scores.

Each lead investigator will receive a summary of the Panel scores for his/her pre-proposal. Full proposals will be encouraged only from those prospective principal investigators with the highest-ranked preliminary proposals. It is anticipated that up to 6-8 pre-proposals will be encouraged for submission as full proposals. Two or three full proposals are expected to be selected for funding. Instructions for full proposal submissions will be provided when full proposals are encouraged.

5. Preliminary Proposal Requirements

A preliminary proposal (i.e., a pre-proposal), while not as detailed as a full proposal, should clearly define the objectives, rationale, and approach for the project. Potential benefits of the proposed work should also be described (e.g., how the proposed work enhances understanding and management of Long Island Sound). Proposals must be multi-disciplinary in nature. Proposals requesting funding that is complementary to that sought from other sponsors are welcome. In this case, other funding sources and amounts should be disclosed, and work being funded or proposed elsewhere should be distinguished from, and not duplicative of, work proposed under this Call.

All preliminary proposals must be submitted using the format and categories described at the end of this announcement. No appendices or other attachments are permitted. Investigators should ensure that all information is provided and that pre-proposal components follow the specified format.

The preliminary proposal project description must conform to stated page limitations, including minimum 1-inch margins and 12-point font of Times New Roman or equivalent. Illustrations and tables must be of legible size, and are *included* in the page limitation. References cited may be included as a separate section, *in addition* to stated page limits.

The completed Pre-proposal Submission Form (see end of this announcement) must be received as a single pdf by the closing deadline of 5:00 p.m. EDT on June 8, 2012. Please note that, although the submissions are to NYSG's web site, this is a jointly administered funding opportunity and all the submissions will be processed by both programs, CTSG and NYSG, as a single pool. *Preliminary proposals that are not received by this deadline will be discarded without review, as will preliminary proposals that fail to comply with content, format, budget and other requirements.* Unless required by your institution, it is not necessary for your University (or institution) sponsored programs office to formally approve your preliminary proposal prior to submission.

Each lead applicant will be notified about the status of his/her pre-proposal by July 20, 2012 indicating whether a full proposal is encouraged or not. A summary of Panel results will be provided by August 10, 2012. Note that submission of full proposals will only be encouraged for those prospective principal investigators with the highest-ranked preliminary proposals following the Panel review and evaluation. For those investigators invited to submit full proposals, the deadline for these full proposals is October 1, 2012 at 5:00 p.m. EDT.

Again, the total budget request for a project may not exceed \$200,000 per year, including all direct and indirect costs. Matching funds (from state or private sources) may be included, but are **not** required.

Please double-check your Pre-proposal Submission Form file before uploading at the submission web site to make sure it is a PC-readable pdf and that it is your final version. **Do not wait until just before the deadline** in case you encounter technical difficulties with your computer. Allowing yourself plenty of time (at least several hours, if not days) to submit is highly recommended. Sending a test submission is allowable, if you identify it as such. You will receive an auto-receipt with a time and date stamp from the web site confirming your submission, but this is not an indication that your file is readable. If the file contains a virus or is unreadable, your submission cannot be accepted.

6. Schedule

- March 30, 2012 -- Sea Grant announces Call for Pre-proposals
- June 8 -- Pre-proposals are due by 5:00 p.m. EDT
- July 20 -- Sea Grant notifies authors about whether or not a full proposal is encouraged
- Aug 10 -- Sea Grant distributes to all lead investigators a summary of Pre-proposal Review Panel results for his/her submission
- Oct 1 -- Full proposals are due by 5:00 p.m. EDT
- Dec 21 -- Sea Grant notifies authors about decisions, providing peer reviews and a summary of Full Proposal Review Panel results
- March 1, 2013 -- Year 1 funding starts
- March 1, 2014 -- Year 2 funding starts, if Year 1 progress is satisfactory

7. If you have questions, contact:

Dr. Syma A. Ebbin
Research Coordinator
Connecticut Sea Grant College Program
University of Connecticut
1080 Shennecossett Road
Groton, CT 06340-6048
Tel. (860) 405-9278
E-mail: syma.ebbin@uconn.edu

Mr. Lane Smith
Research Program Coordinator
New York Sea Grant
123A Nassau Hall
Stony Brook University
Stony Brook, NY 11794-5001
Tel. (631) 632-9780
E-mail: Lane.Smith@Stonybrook.Edu

Reference:

Kemp, W.M. and W.R. Boynton (2012) Synthesis in Estuarine and Coastal Ecological Research: What is it, why is it important, and how do we teach it? *Estuaries and Coasts* 35:1-22.

PRE-PROPOSAL SUBMISSION FORM INSTRUCTIONS
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Please be sure to use the format and provide the information as described below. Submissions that do not include the required sections and information will be rejected as incomplete. Likewise, submissions that do not follow the specified instructions below or as indicated elsewhere in the Call will also be rejected as not meeting the submission requirements.

2013-2014 LONG ISLAND SOUND RESEARCH PRE-PROPOSAL

1. LAST NAMES OF PRINCIPAL INVESTIGATORS: (e.g., Smith / Doe / Jones)

2. BRIEF PROJECT TITLE:

3. INVESTIGATOR(S): List **all** principal, co-principal, and associate investigators, including name, address, telephone, and email for each. Also indicate eligibility category for each.

4. PROJECT TOPIC AREA: Specify by the alphanumeric identifier the Topic Area listed in the Call that the pre-proposal addresses (e.g., II.B).

5. BUDGET: Totals of direct plus indirect costs (\$200K max per year).

A. Estimated Funding Request

Year One \$_____ Year Two \$_____ Total Request \$_____

B. Anticipated Non-Federal Cost-Share to be Provided (if any)

Year One \$_____ Year Two \$_____ Total Match \$_____

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

6. BRIEF DESCRIPTION OF PROJECT: Starting on a *new* page, use up to three pages of text with the following a-f headings to describe your proposed project. Use all-around margins of at least 1" and a font size no less than #12 Times New Roman or equivalent.

- a) **OBJECTIVES:** List the overall objectives of your proposed study, with a statement of the hypothesis(es) to be tested. Or, if this is model development or a synthesis effort, clearly state the intent.
- b) **MULTI-DISCIPLINARY APPROACH:** Very briefly describe the general methods and multi-disciplinary approach to be used in accomplishing the objectives.
- c) **RESPONSIVENESS TO THE TOPIC AREAS:** Explain or spell out how the proposed project addresses the specific Topic Area you have identified above in #4.

- d) **SIGNIFICANCE TO LIS OF THE SPECIFIC ISSUE AND APPROACH:** Explain or describe the rationale for, and significance of, the proposed project and the way your team will be approaching it.
- e) **USEFULNESS OF THE ANTICIPATED RESULTS TO MANAGEMENT:** Explain how the research and anticipated results can be used to inform and direct management of Long Island Sound and its resources. It is up to the pre-proposal to provide specific examples.
- f) **LINKAGES:** Highlight whether the work is being proposed in conjunction with other projects or proposals, or will be able to coordinate with other known efforts.

7. LITERATURE CITED: Present the full citations for any work referenced under #6, where they may be labeled as (1), etc. The space required to list the literature cited is not counted under the 3-page maximum for #6.

8. REVIEWERS: List three potential peer reviewers who would not have a conflict of interest with you, your team, or your institution, in case you are encouraged to submit a full proposal. We may or may not use these peers, so there is no need for you to contact them. If there is anyone who you feel should *not* be asked to provide a review, you may list up to two people and we will do our best to accommodate this request. Leaving Section 8 blank is acceptable.

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Guidelines for Out of Cycle (OOC) Funding Requests to New York Sea Grant

(Revised June 2012)

New York Sea Grant has limited funds each year that are available to support special funding requests. Such funding requests are referred to as “out of cycle” or OOC since they do not coincide with normal Calls for Proposals. The information below is intended to provide guidance for individuals or groups inquiring about such requests. New York Sea Grant receives OOC requests year-round, but sometimes the response may be delayed. State the degree of urgency in your request, because other more pressing matters usually take precedence over the review of special funding requests.

Electronic OOC requests are required, and should be submitted to the address below as a single PDF file:

Dr. James Ammerman, Director
New York Sea Grant
121 Discovery Hall
Stony Brook University
Stony Brook, NY 11794-5001
631-632-6905 (voice)
James.Ammerman@stonybrook.edu (email)

★ **Be sure to note the 4 OOC categories (I - IV) and specify which one fits your request.** ★

I. Sponsorship of a Workshop, Symposium, Meeting or Other Special Requests (e.g., for travel, educational efforts, publications, etc.)

The purpose of this category is to give NYSG the opportunity to participate in non-research activities that would fit within its Strategic Plan and are not already part of its program.

A. How to request funding:

- 1) Applicants should submit a 1-2 page overview of the event or activity describing its purpose, intended audience, and “product” if any; estimated total cost of all anticipated expenses; a list of other entities approached for support or co-sponsorship; and the amount and intended use of funds being requested from NYSG.
- 2) NYSG’s management team will review the request, with input from staff as appropriate.
- 3) If a favorable decision is made, funding will be provided as appropriate (e.g., via reimbursement, payment of an invoice upon completion, etc.).

B. Standard conditions if funding is provided:

- 1) Involvement of Sea Grant in development and planning, as appropriate, if the funding is for a workshop, symposium, or meeting;
- 2) Acknowledgement of NYSG’s sponsorship as appropriate on materials related to the event (announcements, day-of materials, any product);

- 3) Invited and free participation (or observation) for one or more Sea Grant personnel if the event is a workshop, symposium, or meeting;
 - 4) At least 2-3 copies of any resulting products (e.g., agenda, abstract, proceedings, manual, report etc.); and
 - 5) A follow-up report that states the number of attendees and whether/which other Sea Grant programs also provided financial or other support.
-

II. Research Mini-Grant -- *Rapid Response*

The purpose of this category is to give university/college faculty and NYSG the opportunity to be immediately responsive to unexpected research needs. Because available funds are limited, these efforts can only be small, but they can be used to develop and provide critical information quickly.

Criteria:

- 1) There must be some justifiable “emergency” need to support the project outside NYSG’s biennial core research RFP competition and funding cycle. Why can’t the project wait until our next RFP? Most compelling are projects addressing unique, unexpected situations or phenomena where there is a real need to take relatively quick action so as not to miss an important opportunity (e.g., a new phytoplankton bloom; the development of a barrier island breach; or that an agency suddenly is faced with making a decision and desperately needs information obtainable through research within the next few months). Funding cuts from other agencies, departure of key staff, failure/loss of equipment, or other such faculty-specific situations do not fulfill the definition of this category.
- 2) The PI (Principal Investigator) must have an interest in and commitment to working with NYSG extension or other NYSG staff in order to develop new connections and outreach aspects of his/her mini-grant research project. This interaction must be described as part of the proposal.
- 3) The funds available for OOC efforts are limited, so most successful are requests with budgets for less than \$20K (including indirect costs), and durations of one year or less.
- 4) The funds must be requested by, and the project led by, a New York university/college-based faculty member.

III. Research Mini-Grant -- *New PI*

The purpose of this category is to provide opportunities for NYSG to broaden its research portfolio and expand the number and diversity of university/college based faculty who conduct research of interest to NYSG. Because available funds are limited, these efforts can only be small, but they can initiate important introductions and linkages between faculty new to NYSG and NYSG staff. The idea is to give a special opportunity to PIs (Principal Investigators) who have not yet had the interest or opportunity to submit a full proposal for NYSG funding. Of special interest to NYSG may be faculty from subject areas less frequently supported by NYSG, such as social sciences or engineering.

Criteria:

- 1) The funds must be requested by, and the project led by, a New York university/college-based faculty member who has not been part of a full proposal submission for NYSG core funding within the past decade. This includes full proposals that were not funded as well as those that were.

- 2) The proposed research project must closely address and aim towards fulfilling a specific “Strategy” identified under the Goals in NYSG’s current Strategic Plan. Of most interest will be research addressing Strategies where NYSG has not been able to make much progress under the current Strategic Plan.
- 3) The PI must have an interest in and commitment to working with NYSG extension or other NYSG staff in order to develop new connections and outreach aspects of his/her mini-grant research project. This interaction must be described as part of the proposal.
- 4) The funds available for OOC efforts are limited, so most successful are requests with budgets for less than \$15K (including indirect costs), and durations of one year or less.

IV. Research Mini-Grant -- *Development*

The purpose of this category is to provide opportunities primarily for junior faculty based at a New York university/college to get an initial, small development grant that can lead to larger funding from NYSG or other sources. Though established faculty may also apply with justification, such seed grants can be a significant way for junior faculty to gather preliminary data, gain expertise, and prepare for larger proposal submissions. By offering such seed grants, NYSG can advance research identified in its Strategic Plan, help the career advancement of junior faculty who do research of interest to NYSG, and build the potential for extension involvement in larger subsequent grants to other sponsors.

Criteria:

- 1) The funds must be requested by, and the project led by, a university/college-based faculty member who is within 5 years of having received his/her Ph.D. More senior faculty may request a development research mini-grant if they can demonstrate that the project would be a significant departure from their previous research.
- 2) The proposed research project must closely address and aim towards fulfilling a specific “Strategy” identified under the Goals in NYSG’s current Strategic Plan. Of most interest will be research addressing Strategies where NYSG has not been able to make much progress under the current Strategic Plan.
- 3) The PI (Principal Investigator) must have an interest in and commitment to working with NYSG extension or other NYSG staff in order to develop new connections and outreach aspects of his/her mini-grant research project. This interaction must be described as part of the proposal.
- 4) The funds available for OOC efforts are limited, so most successful are requests with budgets for less than \$10K (including indirect costs), and durations of one year or less.
- 5) The request must include a list of several potential sources of larger funding and the range of potential funding amounts.

V. How to Request Funding for Rapid Response, New PI, or Development Mini-Grant:

- 1) Interested investigators may submit a 1-2 page overview of an idea to “test the waters”. It must indicate which category of mini-grant is requested, address the criteria of that category, and list an approximate cost, including campus indirect costs.
- 2) NYSG’s management team will review the overview, with input from staff as appropriate.

- 3) If the idea is of interest, an official proposal with all required authorized signatures will be invited. It needs to be more detailed and include NYSG's usual descriptive sections and a full budget breakdown with justification. Matching funds are desirable, but not required. This invitation is not a commitment to fund, just the agreement to review something with more detail and explanation. The proposal does not need to be very long, but it does need to contain enough information that a peer could evaluate the merits of the proposed project. Further instructions for an official proposal submission will be provided by NYSG, as appropriate.
- 4) Upon receipt, the management team reviews the official proposal, asks for input from any appropriate staff, and may solicit a quick peer review.
- 5) If a favorable decision is made, steps can be taken immediately to award funding. A Letter of Award will be sent to the investigator, with the standard Conditions of Award document.

Research Results & Impacts

Written between February 1, 2012 – January 31, 2013

Project Titles (and identification numbers)

- Stock Identification of Summer Flounder using Microsatellite Analysis (R/XG-21)
- Improved Predictions of Condition and Growth in Alewives: Effects of Dietary Fatty Acids, Temperature, and Ration (R/FBF-21-Y2)
- Functional Genomics Investigations of Hard Clam Immune Response and Resistance Against QPX Infection (R/XG-19-Y2)
- Managing Brown Tide: Nitrogen Physiology of *Aureococcus anophagefferens* Within the Plankton Community Context (R/CMB-32-Y2)

Project Title -- Stock Identification of Summer Flounder using Microsatellite Analysis

R/XG-21; Wirgin

The summer flounder or fluke (*Paralichthys dentatus*) is a major component of the inshore recreational fishery from Cape Cod, MA, to Cape Hatteras, NC, including Long Island, New York, where it is the primary target of the party boat trade during late spring and summer. Fluke are also harvested by commercial fisheries in this area, both inshore during the warmer months and offshore on the continental shelf from mid fall through early winter. Summer flounder spawn in offshore waters over the continental shelf during the fall and early winter months and their early life-stages are pelagic and are carried to near shore coastal waters and embayments where they transform into benthic juveniles during spring and summer. Based on this life history and a very limited earlier genetic study, summer flounder is federally managed as a single stock coast wide. This single stock management model along with harvest allocations based on individual states' landing data from 1998 are used to determine each state's annual permitted landings. This study evaluated the single stock model of summer flounder using a sensitive genetic approach: analysis of microsatellite DNA. Samples of DNA from the dried scales of fluke that had been archived from previous aging studies were analyzed from 1,083 summer flounder specimens. Results of analysis suggest significant genetic heterogeneity among spawning fluke on the continental shelf suggesting that fish within this management area are composed of more than one genetic stock. Preliminary analysis of pooled collections suggests a distinction between north and south of the Hudson Canyon. There is a significant difference between many individual collections from the continental shelf compared to those from south of Cape Hatteras indicating their genetic distinctiveness. If confirmed by additional analyses, these results suggest that the single stock model now used by federal management may not best represent the coast wide stock structure of fluke.

Project Title -- Improved Predictions of Condition and Growth in Alewives: Effects of Dietary Fatty Acids, Temperature, and Ration

R/FBF-21-Y2; Snyder

The alewife, a common fish in the Great Lakes, is an important part of Great Lakes food webs and serves as a key food item for salmon and trout. This study used captive alewives to examine how temperature, amount of food, and type of food influence alewife growth and health. Given the dramatic changes that continue to occur in Great Lakes food webs, it is useful to develop accurate ways to measure alewife growth and health to support important fishery management decisions. The results of this study indicate that dietary essential fatty acids may exert strong influences on alewife growth and that alewife health can be quickly assessed using a simple measure (% dry body weight), and existing mathematical models should be improved to more accurately predict the growth of alewives under a variety of conditions. These results will help fisheries managers in Lake Ontario and throughout the Great Lakes predict how changes in the food web are likely to affect alewife populations, and will lead to better management of the valuable salmon and trout fisheries in the Great Lakes.

Project Title -- Functional Genomics Investigations of Hard Clam Immune Response and Resistance Against QPX Infection

R/XG-19-Y2; Allam / Collier / Fast / Tanguy

The hard clam or northern quahog, *Mercenaria mercenaria*, is one of the most valuable seafood products in the Northeast. Since the 1990's, several Northeastern states have suffered severe losses in hard clam stocks due to a fatal disease caused by a protistan parasite called Quahog Parasite Unknown (QPX). Recent studies comparing different brood stocks demonstrated the genetic origin of clam resistance toward QPX. Further progress in understanding factors affecting QPX disease development is limited by the lack of information regarding clam immune response toward infection. In this study, different approaches were used to characterize immune response toward infection. Laboratory experiments were conducted on naturally and experimentally infected clams and to compare susceptible and resistant clam stocks. Results allowed the identification of several immune genes that are modulated by the exposure to QPX including those involved in pathogen recognition and killing. Results also demonstrated a major effect of temperature on clam immunity and resistance to QPX. Overall, results allowed the identification of candidate biomarkers and molecular mechanisms characteristic of both resistance to, and dysfunctions caused by, QPX. Candidate biomarkers should be validated in the framework of future functional investigations to facilitate the screening and selection of resistant clam stocks.

Project Title -- Managing Brown Tide: Nitrogen Physiology of *Aureococcus anophagefferens* Within the Plankton Community Context

R/CMB-32-Y2; Collier / Gobler

Harmful algal blooms are a serious ecological problem in coastal communities. Though human activities likely contribute to their development, the precise mechanisms underlying the development of harmful algal blooms remain unclear, and it is necessary to better understand them if we are to determine the best ways to manage or mitigate their impacts. This project studied the brown tide bloom forming algae *Aureococcus anophagefferens* by characterizing the plankton community during bloom and non-bloom conditions and the role of nitrogen in *A. anophagefferens* biology. The research team found that specific microscopic organisms co-occur with *A. anophagefferens* during brown tides, that *A. anophagefferens* blooms are present under nitrogen-depleted conditions, and that *A. anophagefferens* and other microbial species are each using specific nitrogen resources. Specifically, analysis of plankton community genetic 'fingerprints' indicated that the presence of *A. anophagefferens* was an important factor in controlling the structure of microbial communities, as were other parameters such as total chlorophyll a and urea concentrations. Results suggest that uptake of urea is dominated by *A. anophagefferens*. This supports the hypothesis that recycled nitrogen, and specifically urea, is a key resource that supports the microbial communities that develop during brown tides. The data from this project will provide a broader understanding of nitrogen utilization by microbial communities during brown tide blooms.

Given that urea and other organic nitrogen compounds are ultimately derived from land-supplied nitrogen loading, the data generated by this project suggest that managerial efforts to curb anthropogenic nitrogen loading would restrict the proliferation of brown tides.

Research Project Publications

Published in 2012
(project number in parentheses)

Peer-Reviewed Journal Articles, Book Chapters

Anglès, S., E. Garcés, T.K. Hattenrath-Lehmann, and C.J. Gobler. 2012. In situ life-cycle stages of *Alexandrium fundyense* during bloom development in Northport Harbor (New York, USA). *Harmful Algae* 16: 20-26. (R/CMB-31)

Binding, C.E., T.A. Greenberg, R.P. Bukata, D.E. Smith, and M.R. Twiss. 2012. The MERIS MCI and its potential for satellite detection of winter diatom blooms on partially ice-covered Lake Erie. *Journal of Plankton Research* 34(6): 569-573. (R/CE-29)

Boscarino, B.T., K.E. Halpin, L.G. Rudstam, M.G. Walsh, and B.F. Lantry. 2012. Age-specific light preferences and vertical migration patterns of a Great Lakes invasive invertebrate, *Hemimysis anomala*. *Journal of Great Lakes Research* 38: 37-44. (R/CE-28-Y2)

Bowman, M.J., and M.H.E. Bowman. 2012. Hydrologic feasibility of storm surge barriers. In: D. Hill, M.J. Bowman, and J.S. Khinda, editors. *Against the Deluge: Storm Surge Barriers to Protect New York City*. American Society of Civil Engineers, New York, NY, pages 71-98. (R/CCP-18)

Karimi, R., T.P. Fitzgerald, and N.S. Fisher. 2012. A Quantitative Synthesis of Mercury in Commercial Seafood and Implications for Exposure in the United States. *Environmental Health Perspectives* 120(11): 1512-1519. (R/SHH-17)

Orton, P., N. Georgas, A. Blumberg, and J. Pullen. 2012. Detailed modeling of recent severe storm tides in estuaries of the New York City region. *Journal of Geophysical Research* 117(C9): 1978-2012. (R/CCP-18)

Perrigault, M. and B. Allam. 2012. Differential immune response in the hard clam (*Mercenaria mercenaria*) against bacteria and the protistan pathogen QPX (quahog parasite unknown). *Fish & Shellfish Immunology* 32(6): 1124-1134. (R/FBM-34)

Saxton, M.A., N.A. D'souza, R.A. Bourbonniere, R.M.L. McKay, and S.W. Wilhelm. 2012. Seasonal Si:C ratios in Lake Erie diatoms - Evidence of an active winter diatom community. *Journal of Great Lakes Research* 38(2): 206-211. (R/CE-29)

Twiss, M.R., R.M.L. McKay, R.A. Bourbonniere, G.S. Bullerjahn, H.J. Carrick, R.E.H. Smith, J.G. Winter, N.A. D'souza, P.C. Furey, A.R. Lashaway, M.A. Saxton, and S.W. Wilhelm. 2012.

Diatoms abound in ice-covered Lake Erie: An investigation of offshore winter limnology in Lake Erie over the period 2007 to 2010. *Journal of Great Lakes Research* 38(1): 18-30. (R/CE-29)

Wirgin, I., L. Maceda, J.R. Waldman, S. Wehrell, M. Dadswell, and T. King. 2012. Stock Origin of Migratory Atlantic Sturgeon in Minas Basin, Inner Bay of Fundy, Canada, Determined by Microsatellite and Mitochondrial DNA Analyses. *Transactions of the American Fisheries Society* 141(5): 1389-1398. (R/XG-20)

Technical Reports

Allred, M.K. and S.B. Baines. 2012. Invasive-Species Removals and Nitrogen-Removal Ecosystem Services in Freshwater Tidal Marshes. In: S.H. Fernald, D.J. Yozzo and H. Andreyko, editors. Final Reports of the Tibor T. Polgar Fellowship Program, 2010. Hudson River Foundation. Section IV: 1-23pp. (R/CMC-10)

Proceedings, Symposia

Brincka, M., D.M. Kuehn, and V.A. Luzadis. 2012. Constraints and motivations related to fishing along the Lake Ontario coast. In: C.L. Fisher and C.E. Watts Jr., editors. Proceedings of the 2010 Northeastern Recreation Research Symposium, April 11-13, 2010, Bolton Landing, NY. US Forest Service Technical Report NRS-P-94. Northeastern Research Station: Newtown Square, PA. U.S. Department of Agriculture, Forest Service, Northern Research Station. (R/FHD-12-Y2)

Theses/Dissertations

See list in Appendix X of the briefing book.

Books & Monographs

n/a

Research Project Presentations

2/1/2012-1/31/2013

Allam, B. 2012. Development of strategies to mitigate QPX disease in the hard clam *Mercenaria mercenaria*. The 32nd Milford Aquaculture Meeting. Milford, CT. Talk. (R/FBM-34)

Allam, B. 2012. Development of strategies to mitigate QPX disease in the hard clam *Mercenaria mercenaria*. Annual Meeting of Long Island Shellfish Managers. East Setauket, NY. Talk. (R/FBM-34)

Allred*, M. and S.B. Baines. 2012. Effects of wetland plant communities on denitrification rates: a meta-analysis. Ecological Society of America Annual Meeting. Portland, OR. Talk. (R/CMC-10)

Bowman, M.J. 2012. Invited Presentation. Hudson River Foundation Modeling Forum. New York, NY. Talk. (R/CCP-18)

Bowman, M.J. 2012. Climate change and storm surges: What can metro NY and LI expect down the road? Invited Webinar BOCES. Talk. (R/CCP-18)

Colle, B.A. 2012. Evaluation of CMIP5 models and regional climate ensembles for historical western Atlantic winter storms and their future predictions. Canadian Meteorological and Oceanography Society, Regional Climate Modeling. Montreal, QUE. Talk. (R/CCP-17)

Colle, B.A. 2012. Evaluation of 20th Century simulations of western Atlantic winter storms in several CMIP5 models and other regional climate ensembles. CMIP5 Workshop. Honolulu, HI. Talk. (R/CCP-17)

Dahl, S. and B. Allam. 2012. Hard clam relocations to mitigate QPX disease severity within an enzootic estuary. 104rd Meeting of the National Shellfisheries Association. Seattle, WA. Talk. (R/FBM-34)

Dahl, S., D. Barnes, W. Carden, J. Thiel and B. Allam. 2012. QPX epizootiology: Ten years of data from a hard clam fishery in Raritan Bay NY. International Conference on Shellfish Restoration. Groton, CT. Talk. (R/FBM-34)

Durand, J.M*, C.R. Young, G.N.Hanson and T.F. Wong. 2012. Submarine groundwater discharge (SGD) in Stony Brook Harbor, NY. AGU Fall Meeting. San Francisco, CA. Poster. (R/CTP-44-NYCT)

Eierman*, L.E. and M.P. Hare. 2012. The functional genetics of osmoregulation in *Crassostrea virginica* examined using experimental and population genetic approaches. National Shellfisheries Association annual meeting. Seattle, WA. Talk. (R/XG-22)

Fisher, N.S. 2012. Medical masquerade: A case study of mercury exposure from seafood consumption. Invited talk to New York Academy of Medicine. New York, NY. Talk. (R/SHH-17)

Flanagan, A.M. and R.M. Cerrato. 2012. A quantitative assessment of a classic sediment classification scheme for characterizing benthic marine systems. Western Society of Naturalists 93rd Annual Meeting. Seaside, CA. Talk. (R/CO-7)

George, J.A. 2012. Impacts of climate change on the spring bloom in Long Island Sound. Long Island Sound Study Science and Technology Advisory Committee meeting. Stony Brook, NY. Talk. (R/CMB-36-NYCT)

George, J.A., C.J. Gobler and D.J. Lonsdale. 2012. Effects of temperature on microzooplankton grazing and initiation of the spring bloom in Long Island Sound. 2012 Ocean Sciences Meeting. Salt Lake City, UT. Poster. (R/CMB-36-NYCT)

Getchell, R.G., E.R. Cornwell, G.H. Groocock, P.T. Wong, L.L. Coffee, G.A. Wooster and P.R. Bowser. 2012. Consumption of infected fathead minnows transmits viral hemorrhagic septicemia virus genotype IVb to tiger muskellunge. 2012 Annual Meeting of the Fish Health Section, American Fisheries Society. LaCrosse, WI. Talk. (R/FTD-11)

Gobler, C.J., T.K. Hattenrath-Lehmann, Y.Z. Tang and F. Koch. 2012. Tragedy of the commons: Eutrophication, acidification, and the expansion of HABs across Long Island, NY, USA. 15th International Conference on Harmful Algae. Changwon, Korea. Talk. (R/CMB-38-NYCT)

Hare, M.P.*, L.E. Eierman and M.B. Reiskind. 2012. Local adaptation and its relationship to connectivity in the Eastern oyster, *Crassostrea virginica*. Ecology and Evolutionary Biology graduate student symposium. Ithaca, NY. Talk. (R/XG-22)

Hattenrath-Lehmann*, T.K. and C.J. Gobler. 2012. The PSP- and DSP-producing dinoflagellates, *Alexandrium fundyense* and *Dinophysis acuminata*, and shellfish toxicity in New York estuaries. Stony Brook Southampton Coastal & Estuarine Research Program Environmental Symposium. Southampton, NY. Poster. (R/CMB-38-NYCT)

Hattenrath-Lehmann*, T.K., S.L. Morton and C.J. Gobler. 2012. A tale of two dinoflagellates: Co-occurring blooms of the PSP- and DSP-producing dinoflagellates, *Alexandrium fundyense* and *Dinophysis acuminata*, in a New York estuary. Sixth Symposium on Harmful Algae in the U.S. Austin, TX. Talk. (R/CMB-38-NYCT)

Hattenrath-Lehmann*, T.K., S.L. Morton and C.J. Gobler. 2012. The emergence of toxic *Dinophysis acuminata* blooms in a New York estuary. 15th International Conference on Harmful Algae. Changwon, Korea. Poster. (R/CMB-38-NYCT)

* = Presenter.

- Ilut, D., M. Nydam and M.P. Hare. 2012. High density genomic sampling in highly heterozygous organisms: Lessons from *Ciona savignyi*. Society for Study of Evolution annual meeting. Ottawa, ONT. Poster. (R/XG-22)
- Sagarese*, S.R. and M.G. Frisk. 2012. Insight into the life of a graduate student at Stony Brook. Invited Talk to Undergraduate Course. Southampton, NY. Talk. (E/MP-21)
- Sagarese*, S.R., M.G. Frisk, T.J. Miller, K.A. Sosebee and P.J. Rago. 2012. Influence of environmental, spatial and ontogenetic variables on the habitat selection and management of spiny dogfish (*Squalus acanthias*) in the northwest Atlantic. 142nd Annual Meeting of the American Fisheries Society. St. Paul, MN. Talk. (E/MP-21)
- Sagarese, S.R., M.G. Frisk, K.A. Sosebee and P.J. Rago. 2012. Assessing spiny dogfish migration and population dynamics in the Northwest Atlantic: Progress on habitat modeling and factors influencing survey catchability. 2012 NMFS/Sea Grant Fellows Meeting. La Jolla, CA. Talk. (E/MP-21)
- Sclafani, M. 2012. Carman's River diadromous fish project. Invited Talk to Sea Run Brook Trout Coalition. Turners Falls, MA. Talk. (R/FTD-12)
- Sclafani, M. 2012. Carman's River telemetry project update. Invited Talk to South Shore Estuary Reserve Diadromous Fish Workgroup. Islip, NY. Talk. (R/FTD-12)
- Treible, L.M., D.J. Lonsdale and C.J. Gobler. 2012. The role of ctenophores in nutrient regeneration in Long Island Sound, NY. Long Island Marine Habitats. Southampton, NY. Talk. (R/CE-31-NYCT)
- Young*, C.R. and G.N. Hanson. 2012. Fate of nitrogen during oxic submarine groundwater discharge into Stony Brook Harbor, New York. International Association of Hydrogeologists Congress. Niagara Falls, ONT. Talk. (R/CTP-44-NYCT)
- Young, C. and G. Hanson. 2012. Fate of nitrogen during oxic submarine groundwater discharge into Stony Brook Harbor, New York. Goldschmidt Geochemistry Conference. Montreal, QUE. Poster. (R/CTP-44-NYCT)
- Young, C.R.*, J.M. Durand, A. Rajendra and G.N. Hanson. 2012. Nutrient dynamics in a subterranean estuary over two spring neap tidal cycles. AGU Fall Meeting. San Francisco, CA. Poster. (R/CTP-44-NYCT)

* = Presenter.

**Scholar Theses Received
February 2012 – January 2013**

Bratton, S.D. 2011. Synoptic Flow Patterns that Influence Wind-Induced Mixing and the Temporal Evolution of Hypoxia over Western Long Island Sound. Master's Thesis. Stony Brook University, Stony Brook, NY. 126pp.

Chan, I.-C. 2011. Dynamics of Long Water Waves: Wave-Seafoor Interactions, Waves Through a Coastal Forest, and Wave Run Up. Ph.D. Dissertation. Cornell University, Ithaca, NY. 235pp.

George, J.A. 2012. The Physical and Biological Mechanisms Controlling the Winter-Spring Phytoplankton Bloom in Long Island Sound. Master's Thesis. Stony Brook University, Stony Brook, NY. 48pp.

Hao, Y. 2008. Tidal and Residual Circulation in Long Island Sound. Ph.D. Dissertation. Stony Brook University, Stony Brook, NY. 70pp.

Maher, N.P. 2006. A New Approach to Benthic Biotope Identification and Mapping. Ph.D. Dissertation, Stony Brook University, Stony Brook, NY. 181pp.

Mantus, E.K. 1991. Synthesis, Biological Investigations, and Structural Elucidation of Secondary Plant Metabolites. Ph.D. Dissertation, Cornell University, Ithaca, NY. 116pp.

Qin, P. 2007. Effects of Light, Nutrients and *Dreissena* (*Dreissena polymorpha* and *Dreissena bugensis*) on Benthic Ecosystems in Lakes. Ph.D. Dissertation, Syracuse University, Syracuse, NY. 117pp.

Saxton, M.A. 2011. Constraints on Primary Production in Lake Erie. Ph.D. Dissertation, University of Tennessee, Knoxville, TN. 106pp.

Suter, E.A. 2011. Plankton Dynamics, Nutrient Stoichiometry, and Oxygen Utilization in Western Long Island Sound. Master's Thesis, Stony Brook University, Stony Brook, NY. 144pp.

Wang, J. 2012. Flow Kinematics and Dynamics Controlling Tracer Movement and Shallow-Water Wave Propagation in the Hudson River. Ph.D. Dissertation, Stony Brook University, Stony Brook, NY. 187pp.

Yang, X. 2007. Occurrence of the Cyanobacterial Neurotoxin, Anatoxin-A, in New York State Waters. Ph.D. Dissertation, SUNY College of Environmental Science and Forestry, Syracuse, NY. 232pp.

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Extension Metrics Feb. 1, 2012 - January 31, 2013									
	Bunting-Howarth	Clemetson	Domske	Gall	Graham	Holochuck		<i>SubTotal</i>	Total
<i>Number of SG-sponsored/organized meetings, workshops and conferences</i>	5	4	16	14	8	6		53	159
<i>Number of attendees in SG meetings/workshops</i>	55	176	465	272	183	89		1240	145686
<i>Number of Radio Interviews</i>	0	0	1	0	0	0		1	16
<i>Number of TV appearances</i>	0	0	3	0	0	0		3	38
<i>Number of Print Media Stories</i>	0	0	7	6	6	0		19	276
<i>Number of Public Presentations (Non SG-sponsored)</i>	4	2	1	1	16	13		37	99
<i>Number of attendees at Public Presentations (Non SG-sponsored)</i>	258	1050	80	50	726	1414		3578	5862
<i>Number of volunteer hours (people who helped with your program)</i>	0	0	300	0	348	7		655	743
<i>Number of one-to-one consultations</i>	12	4	86	130	8	22		262	437
	Keenan	MacNeill	Penney	Tanski	White			<i>SubTotal</i>	
<i>Number of SG-sponsored/organized meetings, workshops and conferences</i>	25	3	45	16	17			106	
<i>Number of attendees in SG</i>	327	140	1253	176	142550			144446	
<i>Number of Radio Interviews</i>	0	0	2	0	13			15	
<i>Number of TV appearances</i>	0	0	1	0	34			35	
<i>Number of Print Media Stories</i>	0	41	78	7	131			257	
<i>Number of Public Presentations (Non SG-sponsored)</i>	1	3	28	22	8			62	
<i>Number of attendees at Public Presentations (Non SG-sponsored)</i>	35	120	1144	275	710			2284	
<i>Number of volunteer hours (people who helped with your program)</i>	0	0	88	0	0			88	
<i>Number of one-to-one consultations</i>	1	72	13	89	0			175	

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Education Metrics: Feb 1, 2012 - Jan 31, 2013	DOMSKE			GRAHAM			HOLOCHUCK			WHITE			NYSG TOTALS		
Professional Development for Educators															
Number of professional development sessions (workshops, institutes NOT for college credit)	8			2			3			0			13		
Number of attendees at professional development sessions	138			29			47			0			214		
	Total Elem	Middl e	Total High	Total Elem	Middl e	Total High	Total Elem	Middl e	Total High	Total Elem	Total Middle	Total High	ELEM	MIDDLE	HIGH
Number of students reaches through educators (NOTE: if you have this number, great, otherwise please use a multiplier for your state, e.g. most elementary teachers teach 25 students in your state.)	125	4830	4975	275	0	1800	430	700	400	0	0	0	830	5530	7175
Number of curricula developed	0			1			3			0			4		
Courses for college credit	TOTALS			TOTALS			TOTALS			TOTALS			TOTALS		
Number of courses taught (for credit, college level)	3			0			0			1			4		
Number of students/participants in courses	74			0			0			8			82		
Advisory (state standards, national standards)															
Number of consultations	0			5			0			0			5		
Professional Development for Educators															
Number of attendees at professional development sessions	21			15			0			0			36		
Programs for children and families															
Number of camps, programs, activities, clubs, etc.	0			2			1			0			3		
Number of attendees	0			395			115			0			510		
Number of class trips	0			13			2			0			15		

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Academic, research and extension collaboration produces science-based public information materials to help Great Lakes interests manage AIS threat.

NYSG-Buffalo State College Collaboration Identifies Four High-Risk AIS Threats to Great Lakes

New York Sea Grant (NYSG) collaborations with academic partner Buffalo State College is helping identify aquatic invasive threats to the Great Lakes.

More than 180 aquatic invasive species (AIS) have been introduced into the Great Lakes, causing a variety of negative ecological and economic impacts. Ballast water discharge has been implicated as a major vector of these introductions, largely originating from the Ponto Caspian region of Eurasia. The species-rich area plus its large volume of ship traffic suggests that this region will continue to be a major source of AIS into the Great Lakes. Research and outreach programs for surveillance, prevention and control efforts are needed to prevent new introductions of AIS into the Great Lakes and to minimize the further spread of organisms to inland lakes, the Mississippi River watershed, and beyond.

Based on information on species' environmental requirements, distribution, and invasion history, scientists have previously identified 66 species that pose a potential Great Lakes invasion threat. Most recently, a Great Lakes Restoration Initiative research project coordinated by Buffalo State College researchers and NYSG's freshwater fisheries specialist led to the identification of nine high risk Ponto-Caspian fish species with the potential to survive and spread if successfully introduced in the Great Lakes. These AIS also have the potential to negatively impact the Great Lakes' food webs.



The Caspian bighead goby, above, is one of four fishes identified as an aquatic invasive species threat for transport into North American waters. This fish will be profiled in a new NYSG-developed fact sheet in 2013. Photo: Brian Coad

To develop detailed information used to predict the invasion potential into North America of the nine high risk species, Buffalo State researchers went to former Soviet bloc countries to translate previously unavailable literature on the fish species endemic to that area.

The researchers have predicted that only four species: kilka, Volga dwarf goby, Caspian bighead goby, and black-striped pipefish could survive ballast water transport to North America, suggesting that ballast water exchange, if carried out properly by ships, is an effective tool in reducing future introductions of the high-risk Ponto-Caspian fishes.

NYSG will now summarize the information on these four species into factsheets to help guide early warning monitoring programs for AIS.

NYSG is developing fact sheets on four fish species at high risk for introduction into North American waters. Those fish are: kilka, Volga dwarf goby, Caspian bighead goby, and black-striped pipefish.

This project meets the performance goals of Sea Grant's Healthy New York Coastal Ecosystems Focus Area.

New York Sea Grant is a joint program of Cornell University, the State University of New York, and NOAA. New York Sea Grant Extension administration is located at 112 Rice Hall, Cornell University, Ithaca, NY 14853.

This project summary was written by David MacNeill, Fisheries Specialist,

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A facilitated scenarios workshop can develop realistic planning tools for stakeholders coping with future uncertainties.

NYSG Facilitates Lake Ontario Scenarios Look at the Future of Great Lakes Ecosystems

New York Sea Grant (NYSG) and the U.S. Geological Survey (USGS) organized a Lake Ontario Scenarios Workshop to help 30 diverse stakeholders representing research, management, businesses, and conservation organizations manage future uncertainty.

Escalating changes in Great Lakes ecosystems are driving future trajectories of ecosystem goods and services in uncertain directions, prompting concerns for sustainable management of coastal resources under uncertainty.

Scenarios are gaining acceptance among ecologists as tools for proactive strategic planning and the synthesizing of cross-disciplinary information about known and unknown processes that may be driving ecosystems into different states. Scenarios are a suite of projections into the future from the current state, representing alternative, but logically, consistent views of likely future states. Decisionmakers use scenarios to critically evaluate the uncertain future dynamics that could result in sudden events, catastrophic or otherwise, and how these events could unfold.

Participants in the NYSG/USGS-led scenarios workshop focused on Lake Ontario identified two major uncertainties, i.e., will conditions be dry or wet, and will the lake region population increase or decrease, that would be driving the future of Lake Ontario climate change as a basis for further breakout discussion. Four future scenarios focused on the following combinations:



The Lake Ontario Scenarios Workshop drew 30 diverse stakeholders interested in the lake system's future. Photo: NYSG

1. Dry climate and higher population
2. Dry climate and lower population
3. Wet climate and high population, and,
4. Wet climate and lower population.

Based on workshop evaluations, participants were unanimous in their support for the scenario process, the realism of scenarios developed by the group, educational value in better understanding the complex ecological and social forces that could be shaping the future of Lake Ontario, and the utility of these scenarios for future planning.

This workshop, funded by the Great Lakes Restoration Initiative, will serve as the basis for educating scientists, other stakeholders, and policymakers about the connectedness of ecosystems with societal needs and for incorporating uncertainty in future sustainable management of coastal resources. Other groups and organizations, recognizing the value of scenario workshops, have requested scenario exercises from NYSG.

This project meets the performance goals of Sea Grant's Healthy New York Coastal Ecosystems Focus Area.

New York Sea Grant is a joint program of Cornell University, the State University of New York, and NOAA. New York Sea Grant Extension administration is located at 112 Rice Hall, Cornell University, Ithaca, NY 14853.

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Educating and motivating stakeholders to adopt best practices helps limit the introduction and spread of invasive species.

NYSG Launch Stewards Engaging Public in Watercraft Inspection to Slow Spread of AIS

The New York Sea Grant (NYSG) Launch Stewards Program educates and empowers boaters in the effort to protect New York waters from aquatic invasive species (AIS).

AIS are non-native aquatic organisms that, when introduced into new waters, are likely to cause economic or environmental harm or harm to human health. AIS are well adapted for spreading throughout an ecosystem, limiting food and habitat for native species, and competing with or displacing them. Currently, there are believed to be more than 180 AIS in self-sustaining populations in the Great Lakes basin. Cost estimates of AIS impacts to the Great Lakes region exceed \$100 million annually.

Recreational boating is a key pathway for the spread of AIS to the inland lakes of the Great Lakes basin. Organisms, e.g., spiny water flea, Eurasian water-milfoil, and zebra and quagga mussels, can be transferred on boats and trailers. Motorized and non-motorized boaters can help prevent AIS spread from infested to uninfested waters by properly inspecting their watercraft and equipment for “hitchhikers” every time they enter and leave the water.

The NYSG Launch Stewards program educates recreational boaters on how to look for, remove and dispose of unwanted debris through voluntary watercraft inspections. The stewards offer the inspections throughout the summer at locations along the southern and eastern shores of Lake Ontario, Oneida Lake, and other inland waters.

By fostering awareness of the AIS issue, the stewards engage the boating public to become part of the

NYSG Launch Stewards Program Partners:

Finger Lakes-Lake Ontario Watershed Protection Alliance
New York State Department of Environmental Conservation
U.S. Fish & Wildlife Service Great Lakes Protection Funds Program



NYSG Launch Steward Matt Brincka (right) guides a boater through proper watercraft inspection steps. Photo: Julia Gilbert

solution rather than extending the problem. NYSG is working with launch steward programs across the state to standardize steward training tools. To help boaters easily recognize stewards anywhere in New York, the stewards across the state are consistently using the national *Stop Aquatic Hitchhikers!* campaign messaging and branding.

In 2012, the NYSG Launch Stewards:

- monitored 12 launch sites
- educated 5,701 people
- conducted 2,456 watercraft inspections
 - 72% were NYS-registered boats
 - 10% of the boats had visible debris, e.g. Eurasian milfoil, water chestnut, curly leaf pond weed, algae.

Participating boaters indicated the educational outreach made them more aware of ways they can help limit the spread of AIS; 81% reported using preventative measures, e.g., inspecting/washing/drying boat, and draining bilge and bait buckets.

Simultaneously, the NYSG Launch Steward experience prepares the college student-stewards for future careers in the environmental field.

This project meets the performance goals of Sea Grant's Healthy New York Coastal Ecosystems Focus Areas.

New York Sea Grant is a joint program of Cornell University, the State University of New York, and NOAA. New York Sea Grant Extension administration is located at 112 Rice Hall, Cornell University, Ithaca, NY 14853.

This project summary was written by Mary Penney, Coastal Community Development Specialist, 315-312-3042, mp357@cornell.edu, www.nyseagrant.org



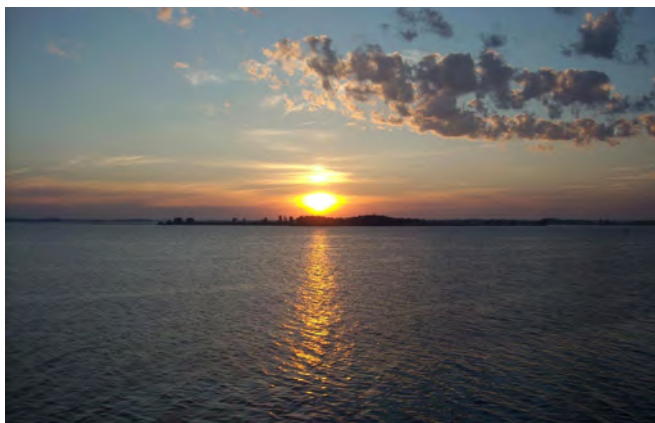
Facilitating open communication among community and agency decisionmakers is assisting Lake Ontario entities with ecologically sound land use planning.

Visioning for Lake Ontario Engages Community and Agency Decisionmakers

To better align public input on the conservation and restoration needs of the Lake Ontario basin with federal, state and local management plans, New York Sea Grant (NYSG) planned and co-facilitated a public participation and involvement initiative. A series of open communication forums for community and agency stakeholders was held in 2012.

NYSG and the Finger Lakes–Lake Ontario Watershed Protection Alliance (FOLLOWPA) partnered to plan and implement a series of six workshops to gather the opinions and input of stakeholders, including municipal leaders, state and local government agency representatives, landowners and residents, non-government agency staff, and the general public. Inquiry focused on the current condition of the Lake Ontario basin, the identification of priority projects for implementation, and additional needs and concerns for the local area and the Lake Ontario basin holistically.

The workshops were held primarily in Lake Ontario shoreline communities plus one watershed area inland. A media campaign invited residents and resource managers from throughout the basin to attend any of the workshops. Participants were given the opportunity to hear presentations by FOLLOWPA, NYSG, and the New York State Department of Environmental Conservation and to submit input on the current condition of the lake, its priority tributaries, and research priorities.



New York's waters represent a diverse resource to stakeholders with varied interests. Visioning workshops for Lake Ontario in 2012 helped find common ground for moving ahead with restoration initiatives. Photo: Mary Penney, NYSG

Nearly 100 Lake Ontario basin residents were given the opportunity to provide input through discussions and written surveys.

Workshop proceedings, with stakeholder input, will be made available to federal, state and local agencies as well as the public in spring 2012. Resource management agencies will use the proceedings that captured the weighted interests of those who live, work, and play in the Lake Ontario basin to help determine agency research priorities and leverage funds for Lake Ontario basin projects.

"The public needs a voice in the discussion of critical issues, with more emphasis on problem solving. Multiply this effort across the board," commented Maxine Appleby of Sodus Point, NY.

Funding for these Lake Ontario visioning workshops was obtained by the Niagara County Soil and Water Conservation District from the U.S. Environmental Protection Agency's Great Lakes Restoration Initiative Program.

This project meets the performance goals of Sea Grant's Sustainable New York Coastal Development and Healthy New York Coastal Ecosystems Focus Areas.

New York Sea Grant is a joint program of Cornell University, the State University of New York, and NOAA. New York Sea Grant Extension administration is located at 112 Rice Hall, Cornell University, Ithaca, NY 14853.

This project summary was written by Mary Penney, Coastal Community Development Specialist, 315-312-3042, mp357@cornell.edu, www.nyseagrant.org



Extension resources help boaters access new technology to keep them informed of changes in boating conditions.

NYSG Assists Access to New Web-Based Tool: A Boaters' Forecast for the St. Lawrence River

New York Sea Grant (NYSG) helped make a new real-time, web-based tool available to recreational boaters on the St. Lawrence River.

Conditions on the River can change dramatically due to weather events, drawdowns in the system, pooling, and ponding. Water level regulation on the upper St. Lawrence River has noticeable effects on the river, particularly due to releases from the control dam on the River at Cornwall, Ontario-Massena, NY. Other human-driven decisions, and natural factors (i.e., wind), also impact the river conditions for boaters.

The Great Lakes Observing System (GLOS) and the National Oceanic and Atmospheric Administration's Great Lakes Environmental Research Lab (GLERL), with assistance from NYSG, developed a new web-based forecasting resource for the River, integrating data from several sources including Environment Canada.

The St. Lawrence River Boaters Forecast is a real-time application of the Great Lakes Observing System for recreational boaters. Boaters, marina operators, and anyone with a computer or smart phone can access the easy-to-use Web site at www.glos.us.

This new tool provides real-time and forecasted water current and water depth data for points all along the River. Users can simply click on their desired locations to see depth and current readings now and 12 hours into the future.

Users can pre-set their own safety datapoints, e.g., a specific water depth or water current speed, and the Boaters Forecast will send an email or text alert when that point is reached.

At right, a GLOS data buoy that provides information on water conditions on the Great Lakes.

The new Boaters' Forecast tool for St. Lawrence River provides boaters with current and 12-hours-ahead data on water depth and current. Photo: GLOS



Knowing this information helps boaters realize when they should head back to homeport or seek a safe haven.

Working with GLOS and GLERL, NYSG provided the education/outreach component for the "St. Lawrence River Boater Forecast" development and access project. Four public meetings were held along the river in Alexandria Bay and Ogdensburg, NY, to provide developers with actual boater input that was used to enhance the hydrodynamic modeling initiated by researchers.

John Cannon, a St. Lawrence boater who tested the site noted, "I enjoyed using the website. It was very straightforward. I will be using the information when boating in the 1000 Islands. This tool will be very helpful to anticipate changes in river conditions."

GLOS Program Coordinator Kelli Paige reports that between July 2012 and mid-January 2013 this new boaters' resource had been accessed by more than 3,000 unique viewers who spent an average 4:15 minutes on the site. This pilot project is now the basis for the development of a Great Lakes-wide "Boater's Forecast" tool.

This project meets the performance goals of Sea Grant's Sustainable New York Coastal Development Focus Area.

New York Sea Grant is a joint program of Cornell University, the State University of New York, and NOAA. New York Sea Grant Extension administration is located at 112 Rice Hall, Cornell University, Ithaca, NY 14853.

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Helping NY seafood gain recognition in local food systems helps New York's fishing businesses increase visibility, productivity and profitability.

NY Sea Grant Brings Recognition of Seafood into Local Food Systems

In 2012, New York Sea Grant (NYSG) helped New York's fishing communities integrate seafood products into local food systems.

Support for local food systems has gained popularity in recent years largely due to programs successfully encouraging the public to "know where your food comes from" and that buying local can be better for the environment and the economy. Farmers' markets in New York's metropolitan and suburban communities enjoy strong support and public loyalty from spring through fall, and in some areas year-round. Although studies have proven the healthy benefits of eating seafood, seafood is underrepresented in local food systems.

NYSG worked to integrate seafood into local food systems, which ultimately improves the financial condition of commercial fishing businesses, consistent with Sea Grant's goals to establish profitable seafood businesses that depend on safe, high quality seafood products. Local food systems present many opportunities for farmers and seafood producers.

Activities NYSG facilitated to help integrate seafood products into local food systems include:

- administering a workshop about opportunities to start a shellfish business under the auspices of the Long Island Small Farms Summit
- administering a local seafood, wine, and chocolate food pairing event to teach versatile uses of seafood around the holidays
- developing information kiosks and poster displays about community supported fisheries (CSF), to inform the public about purchasing seafood shares directly from commercial fishing vessels, and



Fresh local fish was transformed into a chef's delight at a NYC "Seafood Throwdown" co-sponsored by New York Sea Grant. Photos courtesy of New York Sea Grant

- participating in two "Seafood Throwdown" events (NYC Greenmarkets, Grown on Long Island Day), showcasing chefs actively involved in the local food systems, preparing seafood cuisine.

These activities connected with more than 2,000 New York City/Long Island area residents and four new CSF businesses were launched over two years in New York through the local food systems movement. A new CSF, Dock to Table, successfully piloted in Montauk for six weeks in fall 2012 will expand in 2013.

This programming was possible through partnerships with several agencies, including the Long Island Small Farms Summit, Grow Long Island, Northwest Atlantic Marine Alliance, NYC Green Market, Cornell Cooperative Extension of Suffolk County, Long Island Farm Bureau, Long Island Wine Council and Casting for Recovery.

This project meets the performance goals of Sea Grant's Safe & Sustainable New York Seafood Supply Focus Area.

New York Sea Grant is a joint program of Cornell University, the State University of New York, and NOAA. New York Sea Grant Extension administration is located at 112 Rice Hall, Cornell University, Ithaca, NY 14853.

This project summary was written by Antoinette Clemetson, Marine Fisheries Specialist,

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Hands-on habitat restoration learning opportunities equip educators to teach others about the value of ecosystem stewardship.

New York Educators Help Restore Gulf Coast Habitats

In 2012, New York Sea Grant (NYSG) and the New York State Marine Education Association (NYSMEA) led a trip to the Gulf Coast to help educators understand the need for stewardship of New York's wetlands.

Wetlands provide crucial feeding, breeding, and nursery grounds for thousands of native animals. In New York's Jamaica Bay, a 39-square-mile estuary that includes portions of Brooklyn, Queens, and Long Island's Nassau County, wetlands are being lost at a rate of 44 acres per year.

To teach educators about wetland loss occurring in New York State, NYSG Long Island Sound Study Outreach Coordinator Larissa Graham, NYSMEA President Meghan Marrero, a faculty member at Mercy College in Dobbs Ferry, NY, led a group of 14 educators to Louisiana where wetlands are being lost at a rate of one acre an hour.

Louisiana and New York struggle with similar challenges regarding wetlands. While in Louisiana, Marrero and Graham taught the NY educators about wetland loss and current restoration projects in Jamaica Bay and Long Island Sound, and issues such as hypoxia (a low level of dissolved oxygen) that occurs in both the Gulf of Mexico and Long Island Sound. They provided science-based information, highlighting research funded by NYSG.

To learn about rebuilding wetland habitats, the group volunteered at the U.S. Department of Agriculture's Natural Resource Conservation Service Golden Meadow Plant Materials Center in Galliano where they planted more than 1,700 gulf bluestem plants, harvested seeds, and prepped



New York State Marine Education Association members assist with habitat restoration projects during a volunteer trip to coastal Louisiana. Photo: Larissa Graham, NYSG

planting materials. They worked with Louisiana Sea Grant at the Wetland Plant Center in New Orleans to pot native wetland vegetation which will be planted at various wetlands around southern Louisiana.

Working with the Barataria-Terrebonne National Estuary Program, the group planted nearly 500 live oak, sand oak, and hackberry trees on a restored ridge recreated from dredged sediments from Port Fourchon. With this and future plantings, this ridge will one day become a mature maritime forest and a crucial habitat providing food and shelter for migrating birds.

Back in NY, participants spoke to students, colleagues, and friends about their experiences, and each participant led a restoration project of their own - from invasive species removal and wildlife monitoring to beach and park cleanups.

This trip allowed educators to participate in hands-on habitat restoration projects, and created new environmental stewards for New York's coastal ecosystems.

See NYSG Web Coordinator Paul Focazio's Louisiana learning blog about this educational adventure at <http://nysmea.blogspot.com>

This project meets the performance goals of Sea Grant's Healthy New York Coastal Ecosystems Focus Area.

New York Sea Grant is a joint program of Cornell University, the State University of New York, and NOAA. New York Sea Grant Extension administration is located at 112 Rice Hall, Cornell University, Ithaca, NY 14853.

This project summary was written by Larissa Graham, Long Island Sound Study Outreach Coordinator, 631-632-8730, lfg85@cornell.edu, www.nyseagrant.org

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In-the-field student learning and research projects can provide local, regional and state organizations with critical data and assistance.

NYSG Helps Students Assist Local Restoration Project

New York Sea Grant partnered with watershed interest groups to provide local students with hands-on learning opportunities.

In 2010, the communities within New York's Nissequogue River Watershed came together to develop an Action Plan. One of the objectives of the plan was to restore tidal flow to surrounding wetlands and to facilitate fish passage upstream on Sunken Meadow Creek at Sunken Meadow State Park. A culvert system, built in the 1950s, was restricting tidal flow in the lower reaches of the creek and restricting the natural flow and flushing of the waterway. The creek was suffering from resulting excessive nutrient levels and temperatures as well as becoming a bottleneck for fish passage.

A habitat restoration project for the area would restore 132 acres of wetland habitat, but, in order to get funding for this habitat restoration project, the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) needed to provide data about the potential impacts of the restoration project. With limited staff, NYSOPRHP did not have the means to collect this information.

NY Sea Grant partnered with NYSOPRHP and the NYS Department of Environmental Conservation to set up a Sound Stewards program in which students would collect the desired data as part of their research projects. Starting in 2008, students from Hauppauge High School in Hauppauge, NY, travelled to Sunken Meadow State Park twice a month to collect data on water quality, macroinvertebrate assemblages, and fish populations in Sunken Meadow Creek. They also learned about the surrounding habitats and, during the process, developed an increased in stewardship for the park and natural resources in general.



Students from Hauppauge High School sample fish populations at Sunken Meadow Creek. Photo: Larissa Graham, NYSG

In 2012, Hurricane Sandy floodwaters washed away most of the culvert system, causing a 50-foot break in the berm built on Sunken Meadow Creek. As a result tidal flow was restored to the Creek.

Sampling one month after the breach indicated that salinity levels and fish populations had changed drastically, water clarity had improved, and changes in water quality and fish populations indicated that tidal flushing was occurring.

Thanks to the Sound Stewards program at Hauppauge High School, NYSOPRHP now has five years' worth of data for use in tracking how the impacts of Hurricane Sandy have affected this Creek now that tidal flow is restored.

The Hauppauge High School Sound Stewards will be continuing their sampling efforts and comparing year-to-year datasets as part of their student research projects.

This project meets the performance goals of Sea Grant's Healthy New York Coastal Ecosystems Focus Area.

New York Sea Grant is a joint program of Cornell University, the State University of New York, and NOAA. New York Sea Grant Extension administration is located at 112 Rice Hall, Cornell University, Ithaca, NY 14853.

This project summary was written by Larissa Graham, Long Island Sound Study Outreach Coordinator, 631-632-8730, ljg85@cornell.edu, www.nyseagrant.org

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Stewardship outreach activities inspire local citizens and students to learn about and care about local natural areas.

Outreach Coordinator Increases Stewardship for Long Island Sound

New York Sea Grant's Long Island Sound Stewardship Initiative was created to protect the areas around the Sound that are not only important for plants and animals, but also for residents that use these areas for recreational purposes.

In 2006, the Long Island Sound Study (LISS) Stewardship Initiative Work Group identified 33 Inaugural Stewardship Areas around the Sound with significant recreational and ecological values. The LISS NY Outreach Coordinator developed various programs to promote stewardship among students, volunteers, and community members for these areas.

Stewardship Days

The New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) and LISS held four volunteer events in the fall of 2012 at LISS Stewardship Areas. The events were organized to improve the ecological conditions at these Areas. Activities included:

- invasive plant pulls and invasive snail removal at Sunken Meadow State Park and Brookhaven State Park,
- native tree planting at Orient Point State Park, and
- native seed collection at Caumsett State Park and Preserve.

More than 50 volunteers participated in these events.

Stewardship Web Pages

The LISS Communications staff developed Web pages for each of the LISS Stewardship Areas, highlighting the ecological importance, recreational



Volunteers stand next to the bags of native seeds they collected for a grassland restoration project at a local Long Island Sound Study Stewardship Area. Photo: Larissa Graham, NYSG

opportunities, nearby places to visit, and links to learn more about each Area. These Web pages will be launched in the spring of 2013.

Student Research Projects

In 2008, the Sound Stewards program was developed to involve middle and high school students in research projects in LISS Stewardship Areas. New York Sea Grant worked closely with partners, including the NYS Department of Environmental Conservation, NYSOPRHP, Stony Brook University, and LISS, to develop research projects that allow students to learn about the problems facing Long Island Sound, while collecting data that will be used by partner agencies. To date, more than 1,900 students have been involved in these research projects.

NYSG partners in LISS programming that educates stakeholders and instills a sense of stewardship for the important natural areas of the Long Island Sound.

This project meets the performance goals of Sea Grant's Healthy New York Coastal Ecosystems Focus Area.

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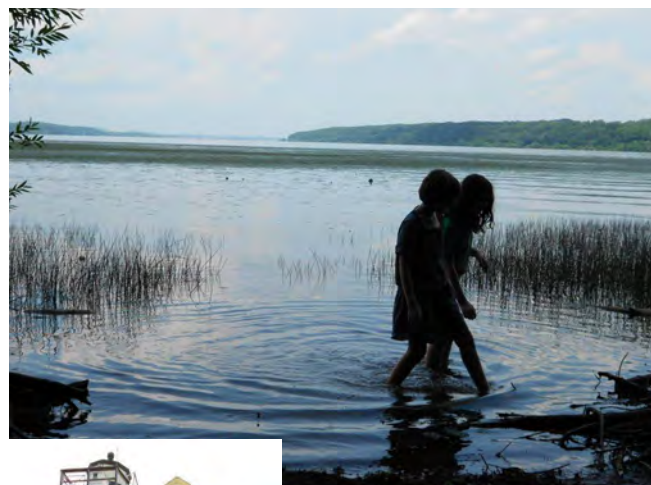
Increasing K-12 teachers' and students' coastal geospatial awareness helps inform sound habitat stewardship.

NYSG Develops Coastal Sea Change Education Materials for New York's Hudson/NYC Estuary Region

In 2012, New York Sea Grant (NYSG), in partnership with the Cornell University Institute for Resource Information Sciences (CUIRS), has developed web-based geospatial learning resources focusing on more than 500 miles of New York coastal and estuarine environments. This project specifically responds to needs expressed by more than 200 grades K-12 educators in the Mid-Hudson and New York metropolitan areas who have participated in Sea Grant geospatial education workshops and field trips.

Hands-on training using publicly-accessible internet resources, including aerial photographs, nautical charts, and maps, helps program participants virtually travel “up and away” to explore the diverse features of their local New York coastlines and learn how these areas have been altered by natural and human activities over the last century.

Program participants at hands-on workshops organized by NYSG have stated the need to be able to retrieve, download and use materials in electronic format for classroom use. In response, NYSG and its project partners developed web-based materials for eight sites throughout the Harbor-Estuary. The resources for each site tell a unique story about the urban and suburban estuaries, of the growth of the coastal communities over time, and the impacts changes have had on habitats. The project materials include an overview of New York City (NYC) estuarine waterways, and the physical settings, environmental challenges



On the Map: above, students explore during high tide near Saugerties on the Hudson River; left: Saugerties Lighthouse in Ulster County is one of the eight study sites developed by the NYSG project team. Once used as an aid to navigation, the lighthouse is now an operating Bed and Breakfast in a publicly-accessible historic park. Photos: Nordica Holochuck, NYSG

and existing programs working to protect and promote responsible stewardship of the region.

NYSG has partnered with Queens College in NYC, recipients of a NOAA Environmental Literacy Grant to launch newly-reformatted materials through an upcoming series of training workshops for K-12 teachers in NYC. Helping educators understand how coastlines change over time informs sound habitat stewardship.

NYSG partners in the effort to inform teachers and students about New York's estuarine resources include the Cornell Institute for Resource Information Sciences, Cornell Cooperative Extension (CCE) administration, CCE Ulster County, Queens College, and NOAA.

This project meets the performance goals of Sea Grant's Healthy New York Coastal Ecosystems Focus Areas.

New York Sea Grant is a joint program of Cornell University, the State University of New York, and NOAA. New York Sea Grant Extension administration is located at 112 Rice Hall, Cornell University, Ithaca, NY 14853.

This project summary was written by Nordica Holochuck, Hudson Estuary Specialist,

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Informing municipalities about sustainable and cost-effective best practices enables communities to implement effective coastal watershed programs.

New York Sea Grant NEMO: Promoting Regional Water Quality Protection Initiatives

Long Island's beaches, bays, and harbors have long been renowned for their beauty and their bounty. They are prized by more than seven million residents and they drive the Island's coastal business, tourism, and fishing industries.

However, as development and population pressures have grown, impacts to water quality, fisheries, and beaches have become costly. To facilitate cost-effective municipal efforts to mitigate such impacts, the New York Sea Grant Nonpoint Education for Municipal Officials Program (NYSG NEMO) has promoted inter-municipal initiatives to reduce the pollutants transported to the coast by runoff.

Specifically, NYSG NEMO began working with partners to support formalized establishment of a cross-jurisdictional watershed protection committee in the Oyster Bay/Cold Spring Harbor drainage area in 2009. Support among the 18 municipalities in the watershed for the protection committee was built gradually.

Presentations and consultations were provided during which NYSG NEMO explained the potential to reduce costs and improve stormwater management by leveraging expertise, equipment, and funding. Further, NYSG NEMO assisted in the development of a successful grant application, which provided for a Coordinator.

In August 2012, efforts came to fruition when 14 municipalities signed an agreement to work together to protect water quality and to establish



Stormwater mitigation projects protect water quality.

Photo: Eileen Keenan, NYSG NEMO

the Oyster Bay/Cold Spring Harbor Protection Committee. Members include the Villages of Glen Cove, Center Island, Cove Neck, Laurel Hollow, Bayville, Lloyd Harbor, Mill Neck, Lattingtown, Muttontown, Upper Brookville, and Oyster Bay Cove; the Towns of Oyster Bay and Huntington; and Nassau County.

Partnering with New York Sea Grant in this effort are the Hempstead Harbor Protection Committee, Manhasset Bay Protection Committee, Town of Oyster Bay, and Friends of the Bay.

The Committee plans to heighten awareness of the need to protect Oyster Bay and Cold Spring Harbor and to obtain increased funding for protective measures in 2013.

**Oyster Bay and Cold Spring Harbor, with their economic and environmental benefits,
are "important to our quality of life."**

-- Nassau County Legislator Delia DeRiggi-Whitton

This project meets the performance goals of Sea Grant's Hazard Resilience in Coastal Communities Focus Area.

New York Sea Grant is a joint program of Cornell University, the State University of New York, and NOAA. New York Sea Grant Extension administration is located at 112 Rice Hall, Cornell University, Ithaca, NY 14853.

This project summary was written by Eileen Keenan, NYSG NEMO Program Manager,

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Providing timely information to coastal managers, planners, and stakeholders equips them to better evaluate local/ regional coastal hazards and assess mitigation and management options.

Quick Response by New York Sea Grant Provides Information to Better Manage Hurricane Sandy Impacts

By acting as a bridge between decision-makers and researchers, New York Sea Grant was able to quickly provide sound information to coastal managers when they needed it most.

Hurricane Sandy inflicted tremendous damage along the New York and New Jersey coastlines. The force of the storm's waves and surge opened several breaches through the barrier islands protecting Long Island's south shore.

Of particular concern to coastal land managers was a breach in the Fire Island National Seashore in a federal wilderness area. The breach was in a barrier fronting a portion of the mainland containing 13,000 homes collectively valued at \$10 billion dollars. Under state and federal policies, the breach was to be monitored for 45 to 60 days to determine whether it posed a threat to the mainland and should be artificially closed or allowed to close naturally.

The National Park Service (NPS), which was responsible for making the decision regarding closure, asked New York Sea Grant's Coastal Processes Specialist to assist their interagency Breach Assessment Team composed of 35 federal, state and local officials.

New York Sea Grant (NYSG) provided the group with research-based information on impacts of new breaches from earlier NYSG efforts and helped them identify data needed to properly evaluate the situation. NYSG worked with researchers at Stony Brook University to identify ongoing field projects that provided some of the needed data, synthesizing and disseminating it to the Assessment Team within two weeks of the storm.



Hurricane Sandy created this breach in the Fire Island National Seashore near a residential area valued at \$10 billion. Photo: C. Flagg

NYSG coordinated with researchers and managers to develop and fund a quick response project to collect critical real-time data on physical changes associated with the breach when it became apparent other agencies were not able to respond in a timely manner.

NPS used NYSG information to evaluate the condition of the breach and its impacts, and decided not to close it immediately, which would have cost approximately \$6 million. The initial data showed the feature was fairly stable and having minimal impacts on main land tide levels.

Recognizing the value of the information, NPS is funding continuation of the data collection program to monitor the breach and its physical impacts to ensure it did not cause increased flooding on the mainland.

This project meets the performance goals of Sea Grant's Hazard Resilience in Coastal Communities Focus Area.

New York Sea Grant is a joint program of Cornell University, the State University of New York, and NOAA. New York Sea Grant Extension administration is located at 112 Rice Hall, Cornell University, Ithaca, NY 14853.

This project summary was written by Jay Tanski, Coastal Processes and Facilities Specialist,

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CHARLES B. RANGEL
15TH CONGRESSIONAL DISTRICT
NEW YORK

GEORGE H. HENRY
CHIEF OF STAFF



COMMITTEE:
WAYS AND MEANS
JOINT COMMITTEE
ON TAXATION

Congress of the United States House of Representatives

June 21, 2012

James Ammerman
Director
New York Sea Grant
121 Discovery Hall
Stony Brook University
Stony Brook, NY 11794

Dear Mr. Ammerman,

Thank you for sending me the Sea Grant New York Coastlines Spring/Summer 2012 Journal. I am always astounded at reading the impressive achievements of our great city's research institutions. This institution is truly a jewel in the Manhattan community and I am grateful for its work towards ensuring a more environmentally sustainable future for our city.

Over the years, New York Sea Grant has enriched our community by supporting essential programs regarding our marine environment. Its crucial research projects lead the way in protecting New York City's waterways from some of their most serious ecological threats, enabling us to protect our city from the ever growing dangers of climate change. By providing resources and support for research regarding marine life such as the Atlantic Sturgeon, NYSG stands as a trusty guard in defense of our city's precious endangered species, maintaining nature's fullest beauty so that it can inspire our children and grandchildren just as it has inspired us. The institution's tremendous work in the fields of technological advancement and educational progress are pushing our educators and government agencies to the cutting edge of marine sciences and bringing our city well-deserved national acclaim. The leadership and support of institutions like New York Sea Grant pave the road to success and will leave a lasting impact that will be forever evident and admired throughout our community. I applaud your transformative work and hope for your continued success.

Thanks again for sending me the latest edition of your journal. To keep up with my work in Washington, DC and in the district, visit my website, <http://rangel.house.gov> and please know that you can continue to count on my strong support.

Sincerely,

Charles B. Rangel
Member of Congress

CBR/es

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New York Sea Grant RESPONDS TO SANDY



In the wake of Hurricane Sandy, New York Sea Grant (NYSG) has played a role in providing sound information to managers and stakeholders in a timely way.

New York Sea Grant has long supported fundamental research on the environmental causes and effects of extreme weather events by funding the Stony Brook University Storm Surge Research Group. After the storm, NYSG responded nimbly by funding several important new research projects. The extension staff of NYSG, specialists who work directly with stakeholders, are helping to survey the extent of Sandy's devastating reach on coastal businesses.

RAPID RESPONSE RESEARCH PROJECTS ARE ALREADY UNDERWAY

Two important Sandy-related projects have been selected and are already beginning:

How will the breach on Fire Island at Old Inlet impact Great South Bay and surrounding communities?

Sandy's storm surge and high waves caused breaches across eastern Fire Island but the one likely to have the greatest impact on the back bay areas of Great South Bay is at Old Inlet, a narrow part of the island with a long history of breaches and inlets. How this breach will evolve and what attendant impact it will have on the back bay and mainland of Long Island are the questions facing the National Park Service and nearby residents on the mainland. This research team from the School of Marine and Atmospheric Sciences at SBU is gathering bathymetric data needed to determine the potential evolution of the inlet, including whether it is likely to close on its own or expand further, and how that evolution will affect the tidal dynamics, and eventually the biota, of the eastern Great South Bay. They have installed sensors for measuring sea level, temperature and salinity at Old Inlet, at Bellport marina, and at buoys in Great South Bay so that changes to sea level and tidal characteristics can be constantly monitored. Early reports after the November and December nor'easters indicate that the breach is remaining somewhat stable.



Will the Western Long Island South Shore Estuary ecosystem be able to handle the additional nitrogen from the failure of the Bay Park Sewage Treatment Plant?

A research team from CUNY is looking at the Western Long Island South Shore (WLISS) estuary where storm surge from Hurricane Sandy caused significant damage to the Bay Park Sewage Treatment Plant in East Rockaway, NY that treats 50-85 million gallons day of waste water from 40 percent of Nassau County residents. Immediately after the storm, an estimated 68 million gallons of raw sewage was released into the WLISS estuary. As repairs were underway in the ensuing weeks, partially treated sewage continued to be released bringing the total to more than a billion gallons. The team will measure if the ecosystem will increase its capacity to remove nitrogen or if the enhanced nitrogen loads will shift the ecosystem to an alternative state that perpetuates additional organic matter loading. Researchers expect significant increases in rates of sediment nitrogen and oxygen dynamics to occur. It is critical to begin measuring rates of dissolved nitrogen as soon as possible, so that the amount of nitrogen being removed from the ecosystem or internally recycled can be measured.

AIDING FEDERAL, STATE AND LOCAL OFFICIALS ON BREACH ASSESSMENT

Hurricane Sandy inflicted tremendous damage along New York's coastlines including opening several breaches through the barrier islands protecting Long Island's south shore. Of particular concern was a breach in Fire Island, a barrier fronting a portion of the mainland containing 13,000 homes collectively valued at \$10 billion dollars. The National Park Service (NPS), responsible for making the decision regarding closing the breach, asked NYSG's coastal processes specialist **Jay Tanski** to assist their Breach Assessment Team composed of 35 federal, state and local officials. NYSG provided the team with research-based information on impacts of new breaches and helped them identify data needed to properly evaluate the situation.

Tanski is a co-author of a 2001 New York Sea Grant report: Impacts of Barrier Island Breaches on Selected Biological Resources of Great South Bay, New York—the most authoritative report on the biological impacts of breaches, demonstrating both benefits and losses. He is also the author of Long Island's Dynamic South Shore: A Primer on the Forces and Trends Shaping Our Coast.

LONG-TERM FUNDING OF STORM SURGE RESEARCH

Stony Brook University Storm Surge Research Group has been funded for their research over the last decade in which they created a composite storm surge model that tracks and predicts storm surge in the metro New York area with greater accuracy than other models.

Some of the Group's work on storm surge prediction and wave forecasting has been picked up by the popular press and the concept of storm surge barriers at several "choke points" around New York City (as done in some places in Europe vulnerable to flooding) has regained some attention by New York City officials. NYSG funded the original modeling research that suggested that storm surge barriers or flood gates could be feasible. As part of developing a resilience strategy for New York Harbor, as called for by the NYS 2100 report, the report suggests "Conduct(ing) a comprehensive storm surge barrier assessment for New York Harbor."

Team members **Drs. Malcolm Bowman** and **Brian Colle** kept close watch before, during and after landfall of Sandy in late October. They provided their results via email, the Group's website, and NYSG's website. During the height of the storm, NYSG's Twitter and Facebook feeds were the primary avenues for providing information as many (including the University) lost power and network connections. In some cases, the groups was able to correct some of the storm-related inaccuracies reported about coastal flooding in lower Manhattan.

COMING TO THE AID OF LOCAL COASTAL BUSINESSES HIT BY THE STORM

New York Sea Grant Extension is working closely with coastal businesses hard hit by Sandy:

Surveying the Impacts of Sandy on Recreational Fisheries

Antoinette Clemetson, NYSG's marine fisheries specialist, is working on the effect of Sandy on several segments of the coastal business sector: recreational fishers, marinas, bait and tackle businesses, charterboat and headboat captains—since the declaration of a fisheries disaster. The impacts to the fisheries community has been tremendous and the costs to the region's infrastructure are being measured in the billions of dollars. Docks, boats, businesses and entire communities have been lost in several locations. As the region struggles to assess the impacts on livelihoods, a collection of industry groups asked NY Sea Grant to facilitate data collection to document the damages in recreational fishing communities.

In mid-November, the Department of Commerce officially determined that a regional fisheries disaster had occurred. In addition to authorizing Small Business Administration loans (SBA), the determination allowed Congress to appropriate disaster relief funding to assist affected communities. At the request of the New York Fishing Tackle Trade Association, United Boatmen of NY, New York Sportfishing Federation, Regal Marine Products, and the Recreational Fishing Alliance, New York Sea Grant is helping to collect information to document losses and physical damages to businesses as a part of the recreational fishing industry. NYSG developed a confidential questionnaire and asked business owners to describe the changes in their business that occurred since Saturday October 27, 2012. Data are being collected from tackle shops, party/charter boats, and marinas, and create the foundation to prepare a spending plan that is required in an appropriation request to rebuild the fishing industry.

Surveying the Impacts of Sandy on Marinas

NYSG's **Jay Tanski** is also working closely with marinas to survey their economic losses. He has asked marina owners to describe the type, square footage, and initial investment on the buildings, facilities, structures, inventory and equipment in their marina before and after Sandy as well as estimate the lost revenues and marketing opportunities.

The NYS 2100 Report also encourages the use of green and natural infrastructure, including "provid(ing) incentives for creation of soft shorelines and wetlands," and "including building living shorelines, new wetlands," and similar structures. Tanski is conducting a workshop on the uses of living shorelines and related methods in the spring of 2013.

NYS 2100 COMMISSION

NYS 2100 Commission: Recommendations to Improve the Strength and Resilience of the Empire State's Infrastructure—is a commission appointed by the Governor of NY in the wake of Hurricane Sandy. NYSG participated through the SUNY experts team.

This list of restoration recommendations of the NYS 2100 Commission requires a better understanding of local conditions and uses to make the best decisions about how to implement needed repairs and restoration. This is the kind of information that NYSG can help acquire, analyze, and distribute quickly to those who need it.

- Restore damaged dunes, beaches, and barrier islands
- Repair and strengthen critical hard infrastructure along the coast
- Repair and protect wastewater infrastructure
- Repair important public recreational infrastructure

Communications

Non-Technical Publications and Resource Web sites

February 1, 2012 – January 31, 2013

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Penney, Mary and M. Brincka (eds). 2012. Stop Aquatic Hitchhikers: How to Tips for Slowing the Spread of Aquatic Invasive Species *Learn How Inspecting Your Watercraft Can Protect NY's Waters*.

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Collaborative

Topical Web sites and URLs

Other topical Web sites with NYSG partners

Communications

Non-Technical Publications and Resource Web sites

February 1, 2012 – January 31, 2013

Brochures and Fact Sheets

Brincka, M. 2012. Stop Aquatic Hitchhikers: New Launch Steward Program. newspaper article series (Oswego and Jefferson Counties).

Domske, Helen and David MacNeill 2012. *Asian carp: Threats to the lower Great Lakes and St. Lawrence River?*

Domske, Helen 2012. Large Lakes of the World. Fact Sheet. New York Sea Grant. International Association for Great Lakes Research. 2pp.

MacNeill, Dave, Mary Penney (New York Sea Grant); Dan Bishop, Fran Verdoliva (NYSDEC); and Jim Johnson (USGS). Artwork by Peter Thompson, 2012. Salmon and Trout of Lake Ontario: A Visual Identification Guide, 2012. New York Sea Grant Brochure. New York Sea Grant Extension Program. Oswego, NY. 8 panels.

O'Neill, Charles 2012. Hydrilla (*Hydrilla verticillata*) - NOT WANTED!: An invasive aquatic plant.

O'Neill, Charles 2012. Hydrilla (*Hydrilla verticillata*): What Marinas Need to Know.

Penney, M.E. and M. Brincka. 2012. Stop Aquatic Hitchhikers: How-to Tips for Slowing the Spread of Aquatic Invasive Species, New York Sea Grant brochure.

Rogers, S.R., J.J. Tanski, and W. Carey. 2012. "Win Win" Climate Change Adaptation Strategies: Lessons Learned From Sea Grant Coastal Processes and Hazards Programming. White Paper. UNC -12-06. North Carolina Sea Grant. 16pp.

Tanski, J. 2012 (revised). Long Island's Dynamic South Shore — A Primer on the Forces and Trends Shaping Our Coast. New York Sea Grant. 27 pages.

Tanski, J.J., H.J. Bokuniewicz, C.G. Schlenk, J. Ammerman. 2012. Dredging Windows Workshop Summary. Report to the U.S. Army Corps of Engineers. New York District. 37pp.

Newsletters

"Coastal and Marine Debris" Sound Update, Feb 2012. Available at: <http://longislandsoundstudy.net/wp-content/uploads/2012/02/Debris12-final.pdf> Larissa Graham.

“Invasive Species” Sound Update, August 2012. Available at:
<http://longislandsoundstudy.net/wp-content/uploads/2012/08/Invasives20121.pdf> Larissa Graham.

“Contaminants” Sound Update, Nov 2012. Available at:
http://longislandsoundstudy.net/wp-content/uploads/2012/11/ToxPath2012_for-Web.pdf Larissa Graham.

MacNeill, Dave, Mary Penney (New York Sea Grant); Dan Bishop, Fran Verdoliva (NYSDEC); and Jim Johnson (USGS). Artwork by Peter Thompson. *Salmon and Trout of Lake Ontario: A Visual Identification Guide*, 2012. New York Sea Grant Brochure. New York Sea Grant Extension Program. Oswego, NY. 8 panels.

Penney, Mary and M. Brincka (eds). 2012. Stop Aquatic Hitchhikers: How to Tips for Slowing the Spread of Aquatic Invasive Species *Learn How Inspecting Your Watercraft Can Protect NY's Waters*.

Sturtevant, Rochelle and Helen Domske (eds). 2012. *The Large Lakes of the World*.

Identifying Sturgeon Populations and Their Contributions to Coastal Aggregations. B. Branca, Editor. New York Sea Grant. Stony Brook, NY. 2 pp.

Newsletters/Periodicals

NYCoastlines. Fall 2012. Vol. 41, No. 2. B. Branca, Editor. New York Sea Grant. Stony Brook, NY. 6 pp. (Electronic and print versions)

NYCoastlines. Spring/Summer 2012. Vol. 41, No. 1. B. Branca, Editor. New York Sea Grant. Stony Brook, NY. 6 pp. (Electronic and print versions)

NYCoastlines. Winter 2012. Vol. 40, No. 4. B. Branca, Editor. New York Sea Grant. Stony Brook, NY. 6 pp. (Electronic and print versions)

Newspaper Articles

Gilbert, J. 2012. Controlling Sea Lamprey in Lake Ontario Tributaries: a First for New York State. newspaper article series (Oswego and Jefferson Counties) and summary sheet.

Persons, S. 2012. NOT WANTED HERE! Hydrilla. newspaper article series (Oswego and Jefferson Counties) and summary sheet.

Regan, A. 2012. Composting Invasive Plants into Organic Compost. newspaper article series (Oswego and Jefferson Counties) and summary sheet.

Spera, N. 2012. Is Oneida Lake Safe from Water Chestnuts? newspaper article series (Oswego and Jefferson Counties) and summary sheet.

Teufel, K.L. 2012. Non-motorized Boaters: Raise Your Paddle Free of Debris. newspaper article series (Oswego and Jefferson Counties).

Collaborative

Topical Web sites and URLs

Other topical Web sites with NYSG partners

Intentionally Blank.



RECENT RESEARCH PROJECTS

BY SUNY INSTITUTION AND DEPARTMENT

Buffalo State College—Department of Biology

- Improved Predictions of Condition and Growth in Alewives: Effects of Dietary Fatty Acids, Temperature, and Ration

SUNY College at Brockport

- Climate Change Literacy Training Program for Extension and Partner Agency Staff

SUNY College of Agriculture and Life Science (CALS), Cornell University Department of Food Science

- Development of Genomics-based Methods to Determine Effective Combinations of Growth Inhibitors for *Listeria monocytogenes* on Cold Smoked Salmon
- Determination of Effective Combinations of Bactericidal and Bacteriostatic Growth Inhibitor Treatments against *Listeria monocytogenes* on Cold Smoked Salmon

Department of Natural Resources

- Genomic Analysis of Oyster Dispersal and Recruitment Success
- Regulation of *Phragmites australis* Invasions by Seedling-associated Microbes
- Forecasting Ecosystem Effects of a New Invader, *Hemimysis anomala*, in Lake Ontario

SUNY College of Environmental Science and Forestry—Dept of Chemistry and University at Buffalo—Dept of Civil and Environmental Engineering

- Contribution of Marina Activities to the Algal Growth of Sodus Bay, Lake Ontario

SUNY College of Environmental Science and Forestry--Dept of Forest and Natural Resource Management

- Constraints and Motivations Related to Bass Fishing Along the Lake Ontario Coast
- GIS analysis of resident angler fishing characteristics and demographics

SUNY College of Veterinary Medicine, Cornell University

- Assessment of Viral Hemorrhagic Septicemia Virus Egg Transmission
- Management of Risk from VHSV in Bait Minnows

Stony Brook University—Dept of Ecology and Evolution

- Using Plant Traits to Predict How Plant Community Changes will Affect Denitrification in Wetlands

Stony Brook University—Dept of Geosciences

- Sources and Fate of Nitrogen in North Shore Embayments

Stony Brook University—School of Marine and Atmospheric Sciences

Living Resources

- Functional Genomics Investigations of Hard Clam Immune Response and Resistance Against QPX Infection
- Development of Mitigation Strategies to Reduce the Impact of QPX Disease on Hard Clam Transplant Fishery
- Mercury and Nutrients in Commercial Seafood: Local and National Trends and Mechanisms
- The Distribution, Causes, and Impacts of *Alexandrium fundyense* Blooms in Coves, Near Shore, and Open Water Regions of Long Island Sound
- Phase Shifts Among Primary Producers Within Long Island Sound: Will Anthropogenic Stressors Continue to Expand the Niche of PSP- and DSP-producing Dinoflagellate Blooms?
- Effects of Low Toxicity, High Concentration *Alexandrium fundyense* Blooms on Growth and Condition of *Mercenaria mercenaria* and *Mya arenaria*
- Managing Brown Tide: Nitrogen Physiology of *Aureococcus anophagefferens* Within the Plankton Community Context
- Impacts of Climate Change on the Export of the Spring Bloom in Long Island Sound
- The Influence of Gelatinous Zooplankton on Nutrient Cycles, Hypoxia, and Food Webs across LIS
- Cumulative Impacts of Multiple Stressors on Eelgrass Populations in New York Estuaries
- Interaction of Biological and Physical Factors Controlling Bottom Dissolved Oxygen

Water Resources/ Climate

- The Role of Sediments in Nitrogen Cycling and Eutrophication in the Peconic Estuary
- Towards an Integrated Multi-model Storm Surge Prediction System for Coastal New York
- An Evaluation of Habitat Classification Schemes for Coastal Marine Systems
- Natural Tracers of Submarine Groundwater Discharge into Long Island Sound
- Future Changes in East Coast Storms and its Impact on Coastal Inundation and LI Sound Mixing
- Summer Synoptic Weather Variability as the Control of the Seasonal Evolution of Hypoxia in LIS
- Evaluating Dredging Windows in Marine Waters in New York State and NY & NJ Harbor

NEW YORK SEA GRANT

Harnessing Systemness, Delivering Performance Charting a New Path for Higher Education



A SUNY-WIDE INSTITUTE

Research

NYSG supports multiple SUNY and other university researchers working on a variety of issues, including harmful algal blooms, aquatic invasive species, fish diseases as well as economic studies related to tourism, recreation and more. Many of the researchers that NYSG has funded have gone on to receive even larger awards from NSF, NOAA, and other granting agencies.

Education

Whether teaching fifth graders about aquatic invasive species along Lake Erie, supporting graduate students as they sample New York waters, or training a cadre of undergraduate river stewards as they engage anglers along the Salmon River, NYSG values the formal and informal education and training of the next generation.

Extension

NYSG extension specialists form advisory committees from the regions they serve. Once issues are identified, a wide variety of techniques are used to tackle them. Extension specialists may work with individuals, collaborate with others to organize workshops, or consult with experts to get needed information from other available sources. This may also involve suggesting new research topics and the process starts anew.

A Sea Grant Scholar, one of hundreds supported by NYSG over the decades, samples invasive plants in the 1000 Islands. Research done on the Great Lakes at SUNY campuses in Brockport, Buffalo (both), CESF, Morrisville, as well as Clarkson, Cornell and others is extended by NYSG at SUNY Oswego and UB.



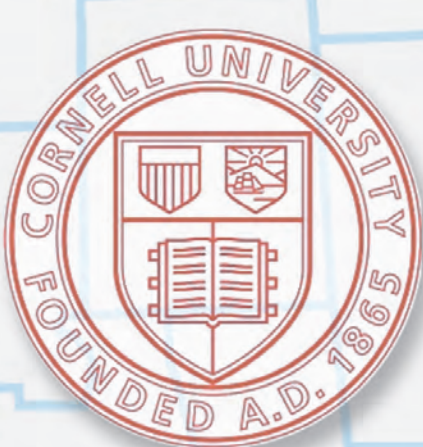
NYSG works with other state, federal and sometimes international partners to provide the science needed for Lake Ontario shoreline property owners, coastal resource managers, boaters, and marina operators to make informed decisions.



Working with NSF's coastal education excellence program and the Great Lakes Sea Grant network, NYSG brought New York teachers aboard the US EPA's Lake Guardian where they worked side by side with SUNY researchers to collect water quality data.



NYSG has funded several surveys related to sportfishing working with researchers at Cornell University and SUNY College of Environmental Science and Forestry (CESF).



NYSG's Nonpoint Source Education for Municipal Officials Program has helped 105 NY municipalities improve water quality and partnered with Brookhaven National Lab. (co-managed by SUNY Stony Brook) in a first-ever green infrastructure conference.



Kingston



A SUNY Stony Brook Sea Grant Scholar and technician study effects of climate change on Long Island Sound food webs, a project supported by Sea Grant-managed US EPA funds.



Stony Brook University

Riverhead

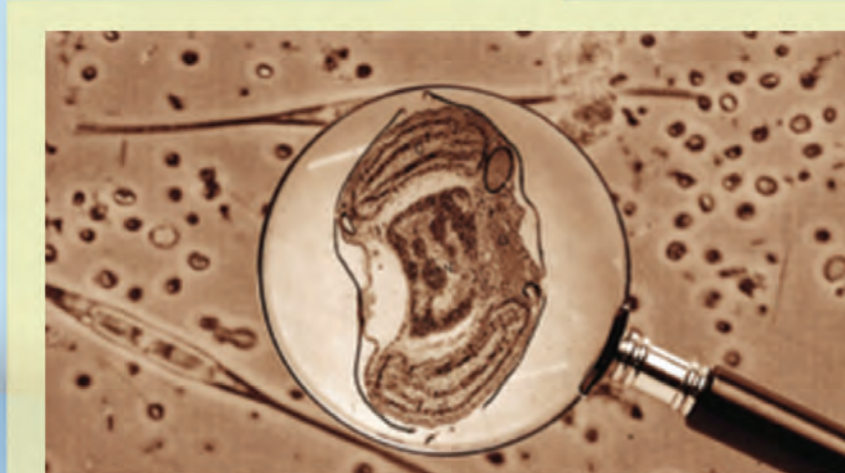


Cornell University Cooperative Extension

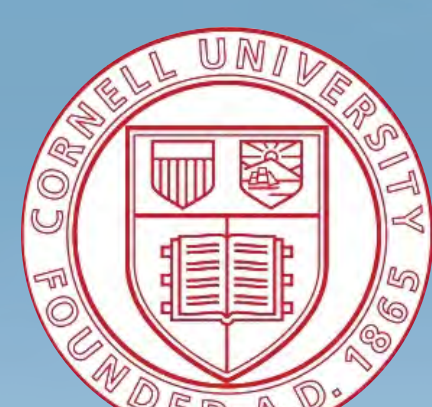
Long Island City



The I FISH NY program, a partnership with NYSDEC, has taken thousands of students fishing in the NY metro area. Sea Grant researchers from CUNY and NYU study mercury in NY Harbor food webs and monitor Hudson sturgeon.



Effects of brown tide, hard clam declines and other ecological threats to NY's commercial fisheries have been a focus of NYSG research in partnership with state, regional and federal management agencies.



The State University of New York

News & Events Press Releases (www.nyseagrant.org/press)

2013

April 12, 2013 - Lake Ontario Lake Guardian Workshop 2013 (Around NY's Lake Ontario basin) [More>](#)

April 12, 2013 - State of Lake Erie Meeting (Hamburg, NY) [More>](#)

April 12, 2013 - 2013 Clean and Safe Boating Campaign Launches [More>](#)

April 9, 2013 - NYSG Networks at Metropolitan Waterfront Alliance Conference, Talks Post-Sandy Efforts [More>](#)

April 5, 2013 - Sea Grant Educates on Key Steps in the Fight Against Great Lakes Type E Botulism [More>](#)

April 4, 2013 - NYSG Urging Take Back Day Participation to Help Keep Drugs Out of Great Lakes (State-wide) [More>](#)

April 3, 2013 - Great Lakes Seaway Trail Blue Byway Seminar (Dunkirk, NY) [More>](#)

April 3, 2013 - NYSMEA Marine Science Activity Workshop (Dobbs Ferry, NY) [More>](#)

April 1, 2013 - Seeking Teachers to Become Long Island Sound Mentors [More>](#)

April 1, 2013 - NYSG's 2012 Extension Success Stories [More>](#)

March 27, 2013 - Students Wanted as New York Sea Grant Launch Stewards [More>](#)

March 15, 2013 - Volunteers Pitch in at LISS-designated Stewardship Areas [More>](#)

March 19, 2013 - Sea Grant Programs and US EPA Long Island Sound Study Award \$708,308 for Long Island Sound Research [More>](#)

March 7, 2013 - New York Sea Grant Provides \$50K for Two Research Projects in Wake of Superstorm Sandy [More>](#)

March 3, 2013 - NOAA Programs, FEMA Educate During March 2013's National Severe Weather Preparedness Week [More>](#)

February 25, 2013 - Mount Sinai Wins Bay Scallop Bowl—Again: February 2013's 12th Annual Bay Scallop Bowl at Stony Brook University [More>](#)

February 20, 2013 - NYSG at Buffalo Bills Boat Show [More>](#)

February 5, 2013 - Paddlesports Safety Demonstrations New at 2013 CNY Boat Show [More>](#)

January 31, 2013 - Sea Grant Supports Cornell CALS 'From Farm to Fork' NYC Event [More>](#)

January 30, 2013 - See 2013 NY Discover Clean & Safe Boats at CNY Boat Show Boating Info Center [More>](#)

January 25, 2013 - 2013 CNY Boat Show Programs include In-Water Demonstrations Feb. 13-17 [More>](#)

January 25, 2013 - NYSG Specialist Moderating Clean Marina Roundtable at International Marina Industry Conference [More>](#)

January 22, 2013 - The State of Sea Grant 2012: Impacts, Challenges and Opportunities [More>](#)

January 22, 2013 - Making the Grade: Biennial Report Details 'The State of Sea Grant 2012' [More>](#)

January 17, 2013 - Register Now for Feb. 14 & 16 Young Boater Safety Training at 2013 CNY Boat Show [More>](#)

January 15, 2013 - NYSG's Extension Specialists Honored for Excellence in 2012 [More>](#)

January 15, 2013 - New Report Tracks Health of Long Island Sound [More>](#)

January 15, 2013 - How does Long Island Sound measure up? Find out by downloading the Sound Health 2012 report [More>](#)

January 15, 2013 - 10 Great Reasons to Visit the 2013 Central New York Boat Show [More>](#)

January 14, 2013 - As featured in Louisiana's *WaterMarks* magazine, New York Volunteers Augment Restoration's Success in Southern Louisiana [More>](#)

January 10, 2013 - Local High School Scholars Compete in February 2013's 12th Annual Bay Scallop Bowl at Stony Brook University [More>](#)

2012

December 3, 2012 - On YouTube: SoMAS Lecture - Storm Surge From Superstorm Sandy: Causes and Impacts [More>](#)

November 27, 2012 - New York Sea Grant Relocates Great Lakes Office at SUNY Oswego [More>](#)

November 16, 2012 - SBU Researcher To Appear in PBS/Nova Superstorm Sandy Documentary [More>](#)

November 16, 2012 - In the News: Superstorm Sandy and the Discussion from SBU Experts that Followed [More>](#)

November 14, 2012 - New York Sea Grant to Assist Four Great Lakes Restoration Initiatives [More>](#)

November 2, 2012 - Stony Brook University Storm Surge Research Group Track Superstorm Sandy, Correct Inaccuracies [News>](#)

October 19, 2012 - NY Great Lakes Coastal Educators Honored for Excellence [More>](#)

October 15, 2012 - Mid-Atlantic Regional Ocean Research Plan [More>](#)

October 8, 2012 - Mid-Atlantic Sea Grant Programs Identify Key Ocean Research Needs for the Region [More>](#)

September 26, 2012 - NYSG Shares Resources, Offers Educational Opportunities at NY Metro Fall Festivals [More>](#)

September 26, 2012 - September 29th National Take Back Day: You Can Help Keep Drugs Out of Great Lakes [More>](#)

September 15, 2012 - Sea Grant Specialist Talks About the Fall Season's Great Boating Opportunities as part of Your News Now's "Discover Better Boating" Series [More>](#)

September 11, 2012 - Public Invited to Lake Ontario Visioning Workshops September 24-29, 2012 [More>](#)

September 5, 2012 - Publications Spotlight: Long Island's Dynamic South Shore (2012 Reprint) [More>](#)

September 5, 2012 - New E-Currents Now Online for Those Interested in NY's Coastal Science News [More>](#)

August 29, 2012 - Hurricane Isaac: NOAA Updates, Reflections on Irene and Katrina [More>](#)

August 28, 2012 - NYSG Partners in Mid-Atlantic, Great Lakes on Rip Currents Education [More>](#)

August 28, 2012 - New York Sea Grant in New York City [More>](#)

August 27, 2012 - As seen in NOAA *Coastal Services* magazine, New York Educators Bring Louisiana Wetlands Stewardship Back Home [More>](#)

August 27, 2012 - Brown and Red Tide in Long Island's Waters: Summer 2012 [More>](#)

August 18, 2012 - Sea Grant Specialist Talks About NYSG's New Invasive Species Launch Steward Program as part of Your News Now's "Discover Better Boating" Series [More>](#)

August 15, 2012 - Sea Grant and Cornell University Partner for Another Seafood Throwdown [More>](#)

August 13, 2012 - Great Lakes Underwater Presents Historic Weather, Shipwrecks, Scuba & Paddlers Program September 8 [More>](#)

August 13, 2012 - Declines on Long Island Sound Lobsters Being Studied [More>](#)

August 13, 2012 - NYSG Discover Clean & Safe Sailboat Widens Its Reach in 2012 [More>](#)

August 3, 2012 - Volunteers collect data with Long Island Sound Study on threatened, endangered species of Great Gull Island [More>](#)

July 31, 2012 - First-time GLOS St. Lawrence River forecasting technology will help boaters plan travel [More>](#)

July 21, 2012 - Sea Grant Specialist Talks About Tips for Buying a Boat as part of Your News Now's "Discover Better Boating" Series [More>](#)

July 20, 2012 - NYSG Discover Clean & Safe Sailboat visits Skaneateles July 27-29 [More>](#)

July 10, 2012 - New NY Sea Grant launch stewards now along local lakes and Salmon River [More>](#)

July 9, 2012 - NYSG dives into Metropolitan Waterfront Alliance's City of Water Days [More>](#)

July 3, 2012 - Seafood Throwdown Coming to the Grand Army Plaza Greenmarket [More>](#)

June 22, 2012 - NYSG Discover Clean & Safe Sailboat to be at Owasco Lake Day June 27 [More>](#)

June 22, 2012 - Teachers Wanted for Lake Ontario Field Workshop [More>](#)

June 16, 2012 - Sea Grant Specialist Talks About Trailer Maintenance as part of Your News Now's

"Discover Better Boating" Series [More>](#)

June 11, 2012 - National Sea Grant Communications Network Chair visiting Central NY to teach students about Social Media [More>](#)

June 8, 2012 - Just throw out your unwanted medicines? Great Lakes Sea Grant programs weigh in [More>](#)

June 8, 2012 - Volunteer to help New York State Parks and Long Island Sound Study; Efforts assist in protection of New York's State Parks [More>](#)

June 8, 2012 - NYSG educates boaters on safety this summer [More>](#)

June 7, 2012 - NY Sea Grant Discover Clean & Safe Sailboat Makes 1st Visit to Clearwater Festival June 16-17 [More>](#)

June 6, 2012 - Sea Grant Programs Educate About Rip Currents in the Great Lakes [More>](#)

June 6, 2012 - NYSG a sponsor of 1st Annual LI Green Infrastructure Conf & Expo on June 21 [More>](#)

June 5, 2012 - Rip Current Awareness Week is June 3-9: NOAA and Sea Grant Provide Resources [More>](#)

June 4, 2012 - Coast Guard Station Montauk hosts Safety At Sea training event [More>](#)

May 30, 2012 - NYSG and other volunteers make a dent in invasive water chestnut plants; Groups plan water chestnut pull at Port Ontario July 14 [More>](#)

May 30, 2012 - NOAA and Sea Grant research featured at mid-April 2012 symposium on harmful algal blooms in NY's coastal waters [More>](#)

May 23, 2012 - NOAA's 2012 National Hurricane Preparedness Week: May 27 - June 2; Rip currents on Long Island, Coastal flooding in New York City are concerns [More>](#)

May 23, 2012 - NYSG sets sail at Metropolitan Waterfront Alliance Conference, Reports on NYC Efforts [More>](#)

May 22, 2012 - Sea Grant Specialist Talks About Vessel Safety Exams as part of Your News Now's "Discover Better Boating" Series [More>](#)

May 15, 2012 - NYSG attends Metropolitan Waterfront Alliance's May 2012 Conference, Tracks NYC efforts [More>](#)

May 14, 2012 - 2012 "Discover Better Boating" Educational Television series begins May 19 [More>](#)

April 24, 2012 - NY Sea Grant Funds Lake Ontario Algal Bloom Research on Sodus Bay [More>](#)

April 23, 2012 - NOAA and FEMA's National Severe Weather Preparedness Week [More>](#)

April 18, 2012 - New York Sea Grant Extension partners with Great Lakes Research Consortium [More>](#)

April 17, 2012 - NYSG Urging April 28th Take-Back Participation to Keep Drugs Out of Great Lakes [More>](#)

April 17, 2012 - Now is the Time for NY's Marinas, Boaters & Anglers to Battle Hydrilla [More>](#)

April 6, 2012 - New Lake Ontario Fish Identification Guide is Most Accurate Aid for Anglers [More>](#)

April 5, 2012 - Stony Brook University to Receive Share of \$2.4 Million New York Sea Grant [More>](#)

April 3, 2012 - Northeast Sea Grant's Regional Social Science Research [More>](#)

March 30, 2012 - Great Lakes Research Consortium names NY Sea Grant educator Associate Director; Oswego to Host its First GLRC Conference March 30-31, 2012 [More>](#)

March 15, 2012 - Discover Clean & Safe Sailboat, New Watercraft Inspection Educator at Great Upstate Boat Show March 30-April 1 [More>](#)

March 15, 2012 - Nearly \$2.4 Million for New York Sea Grant in 2012-2013 [More>](#)

March 12, 2012 - New York Educators Help Restore Threatened Coastal Habitats in Louisiana and at Home [More>](#)

March 7, 2012 - NYSG's 2011 Impact Statements show the depth of programming and benefit to NY's Shoreline regions - from its coastal waters and communities to its youth, economy and educators. [More>](#)

March 1, 2012 - NYSG Educator Raises Awareness of Small Businesses, Byway Communities at White House Great Lakes Briefing [More>](#)

February 23, 2012 - Stony Brook University Hosts 11th Annual Bay Scallop Bowl [More>](#)

February 21, 2012 - NYSMEA and NYSG Re-Team for Habitat Restoration Efforts and Wetlands Loss Education [More>](#)

February 20, 2012 - Discover Clean & Safe Sailboat and New Watercraft Inspection Educator will be at 2012 Buffalo Boat Show February 22-26 [More>](#)

February 13, 2012 - Life-saving In-Water Demonstrations at 2012 Central NY Boat Show [More>](#)

February 8, 2012 - Students Needed for Aquatic Invasive Species Resource & Watercraft Inspection Program [More>](#)

February 8, 2012 - NYSG partners with NYSMEA for a Marine Science Share-A-Thon in New York City [More>](#)

February 6, 2012 - As the US Geological Survey confirms, November 2011's Trawl Workshop is an award-winning international exchange [More>](#)

February 1, 2012 - NY Sea Grant Specialist Speaking at International Conference [More>](#)

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New York Sea Grant Resource Sites

A full listing of these Resource Sites can be found at www.nyseagrant.org/resourcesites. You'll also find this link under "About NYSG" and "Fast Links," among other locations in the site navigation. Also, in an effort to better organize all of the content on the site, you can view the news on our site by categories at www.nyseagrant.org/currentsarchive. For those that prefer, "www.nyseagrant.org" can be substituted with "www.seagrant.sunysb.edu" as the two are interchangeable.

Aquatic Invasive Species: www.nyseagrant.org/ais

Botulism in Lakes Erie & Ontario: www.nyseagrant.org/botulism

Brown Tide Research Initiative: www.nyseagrant.org/btide

Great Lakes Boating & Marine Trades: www.nyseagrant.org/marina

Great Lakes Coastal Community Development Program: www.nyseagrant.org/ccd

Great Lakes Coastal Youth Education: www.nyseagrant.org/cyeducation

Great Lakes Coastal Processes & Erosion: www.nyseagrant.org/glcoastal

Great Lakes Sand Dunes & Wetlands: www.nyseagrant.org/lodune

Great Lakes Sustainable Recreational and Commercial Fisheries: www.nyseagrant.org/glsportfish

Great Lakes Underwater Cultural Resources/Diving: www.nyseagrant.org/glunderwater

Hard Clam Research Initiative: www.nyseagrant.org/hclam

Hudson River Estuary: www.nyseagrant.org/hriver

I FISH NY: www.nyseagrant.org/ifishny

Long Island Sound / Marine Education: www.nyseagrant.org/lisound

Long Island Sound Lobster Research Initiative: www.nyseagrant.org/lobster

Marine Coastal Hazards & Processes / Marinas: www.nyseagrant.org/marinecoastal

Marine Fishery Resource Center: www.nyseagrant.org/marinefish

Nonpoint Education for Municipal Officials (NEMO): www.nyseagrant.org/nemo

New York City: www.nyseagrant.org/nyc

Seafood Safety & Technology: www.nyseagrant.org/seafood

(Seafood Corner: www.nyseagrant.org/seafoodcorner)

Trending Topics

Green Tips for Coastal Living: www.nyseagrant.org/greentips

Hurricane Education: www.nyseagrant.org/hurricane

Rip Currents Education: www.nyseagrant.org/ripcurrents

Climate Change: www.nyseagrant.org/climate

Return Unwanted Medicines Education: www.nyseagrant.org/unwantedmeds

Youth Education Resources: www.nyseagrant.org/youtheducation

NYSG@40 (2011-2012): www.nyseagrant.org/nysgat40

Lake Guardian Teacher Training (2013): www.nyseagrant.org/lakeguardian

Living Shorelines Workshop (2013): www.nyseagrant.org/livingshorelines

NYSG Research: www.nyseagrant.org/research

NYSG Research Projects: www.nyseagrant.org/researchprojects

NYSG Extension: www.nyseagrant.org/extension

NYSG Education: www.nyseagrant.org/education

NY Coastlines: www.nyseagrant.org/nycoastlines

E-Currents: www.nyseagrant.org/ecurrents

Currents (News): www.nyseagrant.org/currents

Currents Archive (New) www.nyseagrant.org/currentsarchive

Press Releases: www.nyseagrant.org/press

Events: www.nyseagrant.org/events

Publications: www.nyseagrant.org/pubs

Staff: www.nyseagrant.org/nysgstaff

Proposals: www.nyseagrant.org/proposals

Grants & Policies: www.nyseagrant.org/grantspolicies

Related Sites: www.nyseagrant.org/relatedsites

Site Map: www.nyseagrant.org/sitemap

What Is NYSG: www.nyseagrant.org/whatisnysg

NYSG Strategic Plan: www.nyseagrant.org/stratplan

NYSG Videos (also featured on our YouTube channel): www.nyseagrant.org/videos

NYSG's Impact Statements: www.nyseagrant.org/successstories

NOAA / Sea Grant Focus Areas: www.nyseagrant.org/focusareas

Partner Web Sites

Many of these sites are hosted on the servers with NYSG's Content Management System. But, they are not part of the CMS. NYSG maintains NYSMEA, LI Sportfishing, BMPs, while others are updated by NYSG staff members who have access to our server.

Eastern Lake Ontario's Dunes and Wetlands: www.nyseagrant.org/glhhabitat/dune/dune.html
(hosted by NYSG; maintained by NYSG extension staff)

Long Island Sound Study: www.longislandsoundstudy.net
(not hosted and maintained by NYSG)

Long Island Sportfishing: www.longislandsportfishing.org or www.nyseagrant.org/nysportfishing

Marina Environmental Best Management Practices: www.nyseagrant.org/marinabmp

NY Invasive Species: www.nyis.info or www.aquaticinvaders.org
(not hosted and maintained by NYSG)

New York State Marine Education Association: www.nysmea.org or www.nyseagrant.org/nysmea

Oneida Lake Education Initiative: www.nyseagrant.org/oli/olei-home.htm
(hosted by NYSG; maintained by NYSG extension staff)

Seaway Trails: www.nyseagrant.org/seawaytrail/introduction.html
(hosted by NYSG; maintained by NYSG extension staff)

Travel Tips for Recreational Boaters, RV Owners, and Motorists along NY's Great Lakes Seaway Trail:
www.nyseagrant.org/crossborder/traveltips.html
(hosted by NYSG; maintained by NYSG extension staff)

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New Content to NYSG Twitter (@nyseagrant) and Facebook (/nyseagrant)

Hurricane Education / Other Coastal Processes Education

(includes NOAA, Sea Grant and related Partners' Response to Superstorm Sandy)

7 Jan Survey for bait & tackle shop owners, party/charter boat owners/captains to document #Sandy damages to fishing industry <http://tinyurl.com/a2ss3a2>

14 Dec @stonybrooku researchers provide @PBS w/ details on four concepts for #NYC storm barriers proposed by engineering firms <http://tinyurl.com/d35gq8m>

14 Dec On YouTube: @stonybrooku investigator on @PBS News Hour's "Protecting #NYC From Future Superstorms as Sea Levels Rise": <http://tinyurl.com/cbbfu95>

13 Dec On Regional News Network, @stonybrooku discusses superstorm #Sandy flooding in #NYC & the possibility of storm barriers <http://tinyurl.com/cnd8za9>

11 Dec On YouTube: @stonybrooku researcher discusses the causes of & impacts from #Sandy storm surge in #NYC, on #LongIsland: <http://tinyurl.com/cqcqg8f>

7 Dec #Sandy caused Old Inlet, Fire Island breach @nyseagrant pub details barrier island breach impacts <http://tinyurl.com/axudqht> pic.twitter.com/xEYP5CTQ

7 Dec @nyseagrant thanks #Sandy & other #FF/RT-ers/Partners: @SeaGrant, @SeaGrants, @SeaGrantNC, @NOAA, @stonybrooku, @stonybrookalum, @PBS

6 Dec As NY-ers remain home/begin returning home following #Hurricane #Sandy, @fema urges precautions: <http://FEMA.gov> <http://www.fema.gov/news-release/take-precautions-your-home-after-hurricane-sandy> ...

5 Dec @stonybrooku's Malcolm Bowman works w/ @CNN on #Sandy doc. More: <http://www.facebook.com/nyseagrant> ; Resources: <http://www.nyseagrant.org/hurricane> pic.twitter.com/DXfmv1xO

30 Nov Hover over satellite photos of the U.S. East Coast to see @ABCAustralia's before and after superstorm #Sandy damage: <http://tinyurl.com/d3vdzfw>

29 Nov Nearly post-#Hurricane season, we look back at @nytimes' late-Oct "Assessing the Damage From #Sandy" diagrams (pdf): <http://tinyurl.com/cyozgy1>

29 Nov Nov 30 ends what @NOAA calls a busy Atlantic Hurricane season, w/ 4 US land-falling storms-Beryl, Debbie, Isaac, Sandy: <http://1.usa.gov/SwmJPY>

29 Nov @NOAA's Environmental Visualization Laboratory offers a quick, animated look back at 2012's Atlantic Hurricane Season: <http://youtu.be/dmLYjs0kwnc>

23 Nov Thanks to some more @nyseagrant #Sandy #FF/RT-ers/Partners: @Nbcnews, @abc, @npr, @nytimes, @ap, @pbs, @boatinglocal, @BoatingTimesLI

23 Nov NYSG thanks #Sandy #FF/RT-ers/Partners: @SeaGrant, @NOAA, @stonybrooku, @stonybrookalum, @cornell, @ccecornell, @cceofsuffolk, @CCE_Disaster

21 Nov #NYC flood was foreseen: Now what?, asks @NBCNews. @stonybrooku discusses #Sandy aftermath, suggests what could be done <http://tinyurl.com/d47y9cf>

21 Nov @NPR talks w/ @stonybrooku researcher/others on #NYC's post-#Sandy reality, idea of barricading NY against a rising sea <http://tinyurl.com/ct3kneo>

20 Nov @ABC asks @stonybrooku researcher how much #Sandy-sustained damage may have been prevented w/ #NYC storm surge barriers <http://tinyurl.com/bsc4pvu>

20 Nov @NPR, @stonybrookku investigator discuss #Hurricane #Sandy Q&A-style: costs, preventive measures, can this happen again: <http://tinyurl.com/c6tsnvc>

19 Nov On YouTube: @stonybrookku's Bowman talks tsunami hazards, storm surges, latter of which applicable to #Hurricane #Sandy: <http://tinyurl.com/ch675wu>

19 Nov @nyseagrant @stonybrookku researcher to @nbcnews: #Hurricane #Sandy provides wakeup call for flood-risk cities like #NYC <http://tinyurl.com/boun3ms>

19 Nov @nyseagrant offers Rapid Response Mini-Grants for Important Coastal Issues (eg., Studies of #Hurricane #Sandy Impacts): <http://www.nyseagrant.org/proposals>

16 Nov Tonight, @stonybrookku researcher discusses "Storm Surge from Superstorm Sandy: Causes & Impacts": <http://tinyurl.com/aufd2ng> pic.twitter.com/WvHtNKuF

16 Nov Sunday's @PBS Nova #Sandy doc to examine if superstorms are becoming more frequent; @stonybrookku investigator featured: <http://tinyurl.com/clz8c7v>

16 Nov Plenty of post-#Sandy ideas by @stonybrookku researchers on MetroNY storm surge, coastal flooding: <http://tinyurl.com/aufd2ng> pic.twitter.com/nzujlYBD

16 Nov @stonybrookku scientists discuss #Sandy with @NBCNews, @abcnews, @nytimes, @AP, others; Talk at SBU Southampton tonight: <http://tinyurl.com/aufd2ng>

16 Nov Some more #Sandy, other NYSG #FF/RT-ers/Partners: @HealthNYGov, @DHSgov, @natlparkservice, @workingharbor, @RedCross, @causes, @CU_Chronicle

16 Nov Thanks to some recent NYSG #Sandy #FF/RT-ers/Partners @SeaGrant, @cornell, @amy_galford, @stonybrookku, @stonybrookalum, @NOAA, @CCE_Disaster

15 Nov @causes
Create an #emergency preparedness kit and you can unlock a \$1 donation to @RedCross from @PGE4ME: <http://bit.ly/UlL9Er> #family
Retweeted by New York Sea Grant

15 Nov @RedCross
We are continuing to provide real time locations of our feeding and supply trucks here: <http://newsroom.redcross.org> #Sandy
Retweeted by New York Sea Grant

15 Nov @fema
#Sandy-affected individuals who have a speech disability or hearing loss and use TTY can register at 1-800-462-7585 #NY #NJ #CT #RI
Retweeted by New York Sea Grant

15 Nov @FEMASandy
To minimize confusion about how to recover from #Sandy, contact @FEMA directly by calling 1-800-621-FEMA, or visiting <http://www.disasterassistance.gov>
Retweeted by New York Sea Grant

13 Nov @CCE_Disaster
@Cornell plans service trip to Staten Island Nov. 16-18 | Cornell Disaster Relief and Outreach <http://relief.cornell.edu/2012/11/08/join-a-service-trip-to-staten-island-nov-16-18/> ...
Retweeted by New York Sea Grant

14 Nov @CCE_Disaster
Hurricane Sandy, Relief Scams <http://itnews.cornell.edu/2012/11/08/hurricane-sandy-relief-scams/#.UKOyzhdTMME.twitter> ...
Retweeted by New York Sea Grant

14 Nov @nyseagrant revamps #Sandy, severe storms site with resources from @NOAA, @CCE_Disaster, @FEMA, @SeaGrant, others at: <http://www.nyseagrant.org/hurricane>

13 Nov @NOAA

After #Sandy, why should #NewYorkers care abt #sea level rise? A @NOAAClimate interview w/ a #climate impacts expert <http://1.usa.gov/U6AKSo>

Retweeted by New York Sea Grant

12 Nov @CCE_Disaster

New York City Trees Take on a "Super Storm"- 8000 trees lost <http://actrees.org/news/trees-in-the-news/newsroom/new-york-city-trees-take-on-a-super-storm/> ... via @Alliance4Trees

Retweeted by New York Sea Grant

13 Nov Statue of Liberty, Ellis Island closed indefinitely while @NatlParkService assesses post-#Sandy damage <http://fb.me/2p4UuUIhv> @WorkingHarbor

10 Nov Homeland Security @DHSgov

Help fight misinformation around #Sandy recovery efforts. Get the facts: <http://www.fema.gov/hurricane-sandy-rumor-control> ...

Retweeted by New York Sea Grant

10 Nov @HealthNYGov

When cleaning up after a flood, mixing certain types of products can produce toxic fumes. Check labels for warnings. <http://www.health.ny.gov/publications/7064/> ...

Retweeted by New York Sea Grant

11 Nov @fema

4 easy ways to find the closest Disaster Recovery Center (4) Text DRC & your ZIP code to 43362 Ex: DRC 08401 (std data rates apply) #Sandy

Retweeted by New York Sea Grant

9 Nov More #Sandy/other #FF/RT-ers/Partners: @nygovcuomo, @nyrp, @philiporton, @ctseagrant, @ncsg_katiem, @nytimes, @boatinglocal, @boatingtimesli

9 Nov Some #Sandy #FF/RT-ers/Partners: @NOAA, @NHC_Atlantic, @usNWSgov, @nasahurricane, @fema, @femaregion5, @redcross, @nysdhse, @epagov, @usda

9 Nov Thanks to some recent NYSG #FF/RT-ers/Partners @SeaGrant, @GenerationSUNY, @sunyempire, @cornell, @stonybrook, @ccecornell, @CCE_Disaster

7 Nov @GenerationSUNY

#SUNY News: SUNY Partners with American Red Cross on Storm Recovery <http://bit.ly/T3rFeG>

Retweeted by New York Sea Grant

6 Nov @fema

Check out: <http://www.serve.gov/sandy> for ways to help with #Sandy relief efforts. Cash is best, donate blood, & find more info!

Retweeted by New York Sea Grant

6 Nov @NOAA

How accurate was @NOAA's National #Hurricane Center forecast for #Sandy? This animation shows it was spot on: <http://youtu.be/e6uHAloTaUg>

Retweeted by New York Sea Grant

7 Nov @fema

For a one-stop-shop of #Sandy information, visit: <http://www.fema.gov/sandy>

Retweeted by New York Sea Grant

7 Nov @fema

For a list of shelters/warming centers in #NY, visit <http://www.dhse.ny.gov/oem/event/sandy/warming-centers.cfm> ... #noreaster cc: @NYSDHSES

Retweeted by New York Sea Grant

7 Nov @fema

If you're a #Sandy survivor and have questions, use our FAQ page as a resource <http://faq.fema.gov>

Retweeted by New York Sea Grant

8 Nov In wake of #Sandy, @PBS re-works/airs "@sesamestreet Gets through a Storm."

http://pbs.org/tv_schedules, kid-friendly tool kit <http://www.sesamestreet.org/hurricane>

7 Nov Thanks @stonybrook for featuring @nyseagrant news item on researchers tracking superstorm

#Sandy <http://tinyurl.com/c9kcv8h> pic.twitter.com/T76GenAZ

6 Nov @ctseagrant: @APAPsychiatric's English/Spanish tips 4 managing stress brought on by natural

disasters (eg #hurricanes): <http://tinyurl.com/2dtugbx>

2 Nov @ctseagrant

See our Sandy Aftermath page. Advice for Connecticut citizens. New section for shellfish growers.

<http://seagrant.uconn.edu/Sandy>

Retweeted by New York Sea Grant

31 Oct @USDA

Tips, assistance & response: USDA emergency information in the wake of Hurricane #Sandy

<http://www.usda.gov/hurricane>

Retweeted by New York Sea Grant

1 Nov @NYGovCuomo

For health questions related to #sandy cleanup, call NYS Hurricane Helpline: 888-769-7243 #NYS #NY

Retweeted by New York Sea Grant

2 Nov @fema

If you've been affected by #Sandy apply for assistance online at <http://www.disasterassistance.gov> or call 1-800-621-FEMA(3362) #CT #NY #NJ

Retweeted by New York Sea Grant

2 Nov @CCE_Disaster

Sesame Street Hurricane kit for kids

http://www.sesamestreet.org/cms_services/services?action=download&fileName=Hurricane+Kit&uid=4df4d228-9304-4663-9a5a-297bdd6f897d ...

Retweeted by New York Sea Grant

3 Nov @CCE_Disaster

Cornell Disaster Relief and Outreach <http://relief.cornell.edu>

Retweeted by New York Sea Grant

5 Nov Though power is returning in #NYC, #LongIsland, there are plenty of ways to pitch in post-#Sandy:

<http://www.nycservice.org>, <http://www.longislandvolunteercenter.org>

2 Nov @NYRP

View photos of "Sandy Devastates NYRP Parks & Gardens" on Facebook & learn how you can contribute to a greener #NYC.

<https://www.facebook.com/media/set/?set=a.10151077973506353.422070.71724736352&type=1> ...

Retweeted by New York Sea Grant

2 Nov @stonybrook, @nyseagrant on #Sandy <http://tinyurl.com/c9kcv8h> @NOAA, @NHC_Atlantic,

@usNWSgov, @nasahurricane, @fema, @CCE_Disaster, @philiorton

Nov 2 @stonybrook researchers tracked #Sandy, corrected inaccuracies along track to #nyc, #longisland:

<http://tinyurl.com/c9kcv8h> pic.twitter.com/eyAG8YWA

Nov 2 Some #Sandy #FF/RT-ers/Partners: @NOAA, @NHC_Atlantic, @usNWSgov, @nasahurricane,

@fema, @femaregion5, @epagov, @philiorton, @googlemaps

Nov 1 @nyseagrant-funded @stonybrook storm surge expert to appear on @RockCenterNBC tonight at 10 pm. A full report of #Sandy media tomorrow.

Oct 31 @fema

Get #Sandy info on your phone: <http://m.fema.gov> <http://m.cdc.gov> <http://redcross.org/mobile> <http://mobile.weather.gov>

Retweeted by New York Sea Grant

Oct 31 @NOAA

#Geospatial resources for #coastal managers trying to deal with aftermath of #Sandy: <http://go.usa.gov/YGgQ> Via @NOAAOcean #DigitalCoast

Retweeted by New York Sea Grant

Oct 31 @CCE_Disaster

New Hurricane #sandy CCE NY EDEN website w important links and resources at <http://eden.cce.cornell.edu/disasters/Pages/Hurricane-Sandy.aspx> ...

Retweeted by New York Sea Grant

Oct 31 @todayeco

Here's some tips to help you recover from Hurricane #Sandy. Please <http://todayeco.com/s/YzW4d> via @EPAGov @nyseagrant @DanielleVenton

Retweeted by New York Sea Grant

Oct 31 @NHC_Atlantic has animation of 31 #Sandy track advisories from its Oct 22 tropical depression state to landfall Oct 29: <http://tinyurl.com/cofzrgt>

Oct 31 @NASAHurricane

ATLANTIC- Post-Tropical Cyclone Sandy: Cloud Sat's View of Hurricane Sandy - NASA's CloudSat spacecraft... <http://fb.me/BVYw8SPA>

Retweeted by New York Sea Grant

Oct 31 @femaregion5

For those in #NY or #NJ affected by #Sandy make sure you're following @femaregion2 for @FEMA and listen to your state and local officials

Retweeted by New York Sea Grant

Oct 31 @EPAGov

Here's some information to help you cleanup and recover after Hurricane #Sandy. <http://go.usa.gov/YfWd>

Retweeted by New York Sea Grant

Oct 31 @CCE_Disaster

Long Island Power Outage Map <http://www.lipower.org/stormcenter/outagemap.html> ...

Retweeted by New York Sea Grant

Oct 31 @CCE_Disaster

What do do about flooding? Evidenced based guidance and tips here - <http://eden.cce.cornell.edu/disasters/Pages/Floods.aspx> ...

Retweeted by New York Sea Grant

Oct 31 @CCE_Disaster

22 % of NYC without power! CCE NY EDEN can help. <http://eden.cce.cornell.edu/otheremergencies/Pages/PowerOutages.aspx> ...

Retweeted by New York Sea Grant

Oct 31 While @nyseagrant preps post-#Sandy analysis w/ @stonybrook @CCE_Disaster, others, also keep tabs on reports so far at <http://www.facebook.com/nyseagrant>

Oct 31 As we work w/ @stonybrook researchers, other partners on post-#Sandy info, here's a look at Aug '11 track of #Irene: <http://tinyurl.com/4xgucnu>

Oct 30 As @nytimes reports, some initial assessments have been documented on #Sandy's wind/storm surge damage, power losses: <http://nyti.ms/UcNLKx>

Oct 30 @fema

What to do before, during, and after a #hurricane. On the web: <http://Ready.gov/hurricanes> On your phone: <http://m.fema.gov/hurricanes.htm> #Sandy
Retweeted by New York Sea Grant

Oct 29 @stonybrook researcher provides detailed update on #Sandy's track for #NYC and #LongIsland. Read the full report at <http://www.facebook.com/nyseagrant>

Oct 28 @googlemaps

New NYC-specific Hurricane #Sandy map features evacuation zones, open shelters, weather info and live webcams: <http://goo.gl/Nyxdx>
Retweeted by New York Sea Grant

Oct 29 @stonybrook researchers talk #NYC storm surge barriers, coastal flooding in @nytimes #Sandy <http://tinyurl.com/926c66s> pic.twitter.com/RO6eL54Z

Oct 29 @philiporton

Dangerous, Likely Recordbreaking #Sandy #Surge Coming to #NYC <http://wp.me/p1chAh-sl>
@nynjpawweather @liweatherman @nyseagrant @JeffSmithABC7
Retweeted by New York Sea Grant

Oct 28 @NOAA Get your local #Sandy weather online by typing in your zip code at <http://1.usa.gov/RnV4Se> ; @usNWSgov mobile site <http://1.usa.gov/RnV4Sf>

Oct 28 #NYC #LongIsland prepare for #Sandy. Be safe, prepared. Updates: @liweatherman, @nynjpawweather, @philiporton, @NYGovCuomo, @nytimes, @Revkin

Oct 28 Hurricane #Sandy could generate more storm surge in #NYC than #Irene. Updates: @NOAA, @NHC_Atlantic, @usNWSgov, @fema, @CCE_Disaster, @SBUEM

Oct 28 @philiporton

Sandy's Storm Surge Forecast Interpretation: Steady, record flooding possible <http://wp.me/p1chAh-sx>
@nynjpawweather @liweatherman @nyseagrant
Retweeted by New York Sea Grant

Oct 27 @philiporton

#Sandy Coastal #Flood Forecast Gets Bleaker (and Bleaker?) <http://wp.me/p1chAh-sq> @nynjpawweather @liweatherman @nyseagrant #nywx #njwx
Retweeted by New York Sea Grant

Oct 26 Make sure you're prepared for #Sandy. @nyseagrant has online #Hurricane resources education and safety suggestions: <http://www.nyseagrant.org/hurricane>

Oct 26 @philiporton has insights on #NYC storm surge concerns related to possible full moon / Hurricane Sandy combo next week: <http://www.facebook.com/nyseagrant>

Oct 26 @stonybrook researcher chats w/ @CBSNews #NYC coastal flooding preparations related to 'the perfect storm' scenario: <http://tinyurl.com/brnj46r>

Oct 19 @nyseagrant's popular 28-pg Long Island's Dynamic South Shore booklet has been revised, reprinted <http://tinyurl.com/9tww6er> pic.twitter.com/C77mNC5W

17 Sep @stonybrook researchers talk storm surge barriers in @nytimes #NYC coastal flooding concerns story <http://tinyurl.com/926c66s> pic.twitter.com/QbxT5c6T

6 Sep @NOAA, @usNWSgov say Hurricane Leslie brings high Rip Current risk alert to NY's ocean beaches: <http://tinyurl.com/9hrqv38> pic.twitter.com/F9275iJl

6 Sep @NOAA, @usNWSgov predict high rip current risk for NY's Atlantic Ocean beaches thru tonight. @nyseagrant's resources at <http://www.nyseagrant.org/ripcurrents>

30 Aug @nyseagrant-funded @stonybrook researchers in @AP story Year after [Hurricane] #Irene, New Yorkers Ponder Sea Barriers <http://tinyurl.com/d3pngva>

29 Aug Educators on @nysmea, @nyseagrant NOLA trip learned about Hurricane Katrina's impacts, which came 7 yrs after #Isaac: <http://tinyurl.com/6ozptyr>

29 Aug Hurricane #Isaac hits U.S. 1 year after Irene, which @nyseagrant-funded @stonybrook researchers tracked for @nytimes: <http://tinyurl.com/4xgucnu>

29 Aug #Isaac 1yr after Irene <http://tinyurl.com/4xgucnu> , 7yrs after Katrina <http://tinyurl.com/6ozptyr> ; Updates @NHC_Atlantic, @usNWSgov pic.twitter.com/8dSflvr8

28 Aug @NOAA, @usNWSgov predict hurricane-strength likely for Tropical Storm Isaac; @nyseagrant has resources and safety tips: <http://www.nyseagrant.org/hurricane>

24 Aug @NOAA @usNWSgov call for higher likelihood of above-normal hurricane season <http://tinyurl.com/8m8nlda> ; @nyseagrant resources <http://www.nyseagrant.org/hurricane>

@NOAA predicts near-normal '12 Atlantic hurricane season <http://tinyurl.com/cvfrf8a> ; NYSG has related edu resources <http://tinyurl.com/42qm9dn> #ImAForce 31 May

Sea Grant is a @NOAA partner helping prepare for Hurricane Season; Rip currents on LI, Coastal flooding in NYC concerns <http://tinyurl.com/bvcyxn8> 24 May

We've got @usnoaagov & @fema "National Severe Weather Preparedness Week" resources, ways you can participate #ImAForce: <http://tinyurl.com/6urmt9v> 24 Apr

It's @usnoaagov's National Severe Weather Preparedness Week. "Be a Force of Nature: Know Your Risk, Be Informed": <http://1.usa.gov/NSWPWeek> 23 Apr

NYSG-funded researchers address concerns over the risk of storm surges & sea level rise in & around the New York City: <http://tinyurl.com/88yb727> 3 Feb

NYSG in NYC

31 Jan @nyseagrant brings Community-Supported Fisheries to tonight's @CornellCALS Taste of #NYS in #NYC: <http://tinyurl.com/aadqgez> pic.twitter.com/lvZNm4X3

6 Oct @nyseagrant joins @NYCParks, @NYRP for today's Little Red Lighthouse Fest w/ #NYC #LISound info: <http://tinyurl.com/d3ob2a6> pic.twitter.com/gMX9RaQ2

5 Oct @nyseagrant at Sat's @NYCParks, @NYRP Little Red Lighthouse Festival w/ #NYC, #LISound resources <http://tinyurl.com/d3ob2a6> pic.twitter.com/lt1ux5bG

Sep 29 @nyseagrant offers some ways you can make a difference on National #Estuary Day and everyday: <http://tinyurl.com/2b5ayfl> pic.twitter.com/0WPrzt3T

Sep 29 @nyseagrant is at the table with #NYC resources for today's @APECofQueens Little Neck Bay Fest: <http://tinyurl.com/d3ob2a6> pic.twitter.com/IPNdgnGa

Sep 27 @nyseagrant at Sat's @APECofQueens Little Neck Bay Fest w/ #NYC resources on National #Estuary Day <http://tinyurl.com/d3ob2a6> pic.twitter.com/d6Bc910Q

Sep 25 Today, @NOAA Admin Lubchenco presents @QC_News w/ 2013 #NYC Literacy Grant Award. Details in @nyseagrant's Dec Currents <http://tinyurl.com/9t4serm>

Sep 24 At @Cornell 2day for @CornellCALS poster session on #NYC restoration sites project. More in Fall NY Coastlines. Sign up <http://www.nyseagrant.org/nycoastlines>

11 Sep @nyseagrant documents efforts w/ #NYC resource site, incl. storm surge research, recently-attended @mwalliance events: <http://tinyurl.com/ccf2obd>

23 Aug Attendees/supporters of @nyseagrant, @nysmea Share-A-Thon @Columbia help spawn #NYC sequel in Oct: <http://tinyurl.com/9dwgq72> pic.twitter.com/dbhUfS8F

22 Aug @nyseagrant, @nysmea value train-the-trainer approach to marine science, as seen at #NYC Share-A-Thon; 2nd event in Oct <http://tinyurl.com/9dwgq72>

Jul 27 By 4pm July 14, @MWAlliance says >25K people celebrated the potential of NY/NJ waterfronts at various harbor festivals pic.twitter.com/T91efSHF

Collecting data on #NYC Liberty Island for geo-spatial mapping partner project w/ @CornellICALS, @Cornell, @ccecornell pic.twitter.com/AxZPHKRy 25 Jul

NYSG provided @MWAlliance #CityofWaterDay attendees w/ postcards & fact sheets educating on rip currents, storm surges. pic.twitter.com/dLsJMman 17 Jul

NYSG Director on @Heritage_Radio re: Community Supported Fisheries at Bklyn #SeafoodThrowdown @GrowNYC @NYCGreenmarkets pic.twitter.com/ajMbtZWw 17 Jul

Our Hudson River Specialist & @CornellICALS intern visited #NYC to talk restoration sites w/ NYSG's Web Content Manager pic.twitter.com/E5WdXNRR 16 Jul

@nyseagrant appreciates your support, @NydiaVelazquez, of @MWAlliance's popular annual harbor fest #CityofWaterDay: <http://tinyurl.com/7bweu9q> 14 Jul

#SeafoodThrowdown happening at 11am! @nyseagrant @heritage_radio @applewoodn @ Grand Army Plaza Greenmarket <http://instagr.am/p/ND-L-Qgy6a/> 14 Jul

Get out there and enjoy #CityofWaterDay with @nyseagrant, @MWAlliance and many others. <http://www.cityofwaterday.org> for more pic.twitter.com/KwktKlgA 14 Jul

We invite you to join us tomorrow for a #seafoodthrowdown, #CityofWaterDay, Port Ontario #invasives weed pull. More at <http://www.nyseagrant.org> 13 Jul

@nyseagrant, @GrowNYC, @NYCGreenmarkets, others at Sat's Seafood Throwdown in Bklyn. See shopping local postcard (pdf): <http://tinyurl.com/7qc3w4d> 12 Jul
@MWAlliance #CityofWaterDay drew 25,000 people last year. On Saturday, NYSG offers info on rip currents, severe storms: <http://tinyurl.com/7bweu9q> 11 Jul

Last year, City of Water Day in #NYC drew 25,000 people. This Saturday, we've got info on rip currents, severe storms: <http://tinyurl.com/7bweu9q> 11 Jul

What's a Seafood Throwdown? In prep for Sat's Bklyn event w/ @nyseagrant, @GrowNYC, see NAMA's video clip from last yr: <http://youtu.be/g1VyFnWFifY> 10 Jul

NAMA, @GrowNYC, NYSG's Seafood Throwdown in Grand Army Plaza, Bklyn on Sat promotes Community Supported Fisheries #NYC: <http://tinyurl.com/btrcwfw> 9 Jul

NYSG has collected its research topics, educational publications, partner sites related to #NYC over the years at <http://www.nyseagrant.org/nyc> 21 May

NYSG toured the Hudson River along the southern end of #NYC at Metropolitan Waterfront Alliance's conference. Pics at <http://www.facebook.com/nyseagrant> 21 May

NYSG to participate in tomorrow's Metropolitan Waterfront Alliance conference; Resource Site tracks our #NYC efforts: <http://tinyurl.com/blu73rj> 17 May

@ILINSeaGrant: See the 15-second Dose of Reality spot on NYC Times Square's JumboTron through the end of this month: <http://tinyurl.com/6u4pldf> 19 Mar

Teachers, educators will join @NYSMEA, @nyseagrant at @Columbia tomorrow for classroom/outreach idea/activity sharing: <http://tinyurl.com/76cjcjp> 9 Mar

NYSG-funded College of Staten Island researchers on urban waterway restoration, look at toxic metals in the food chain: <http://tinyurl.com/7ktlh86> 15 Feb

Teachers, educators will join @NYSMEA, @nyseagrant at @Columbia on Mar 10 for classroom/outreach idea/activity sharing: <http://tinyurl.com/76cjjcp> 9 Feb

NYSG-funded researchers address concerns over the risk of storm surges & sea level rise in & around the New York City: <http://tinyurl.com/88yb727> 3 Feb

Tomorrow's @NYSMEA & @nyseagrant event for teachers and educators at @Columbia has been cancelled, will be rescheduled: <http://tinyurl.com/76cjjcp> 20 Jan

Teachers, educators will join @NYSMEA, @nyseagrant at @Columbia on Sat for a classroom/outreach idea/activity sharing: <http://tinyurl.com/76cjjcp> 18 Jan

Rip Currents Education

10 Sep @nyseagrant, @NJSeaGrant, @DESeaGrant, @MNSeaGrant, @stonybrook on Rip Currents in Great Lakes, Metro NY, Mid-Atlantic <http://tinyurl.com/cxlxofh>

7 Sep Rip Currents on LI Beaches is tonight's @stonybrook lecture; @NOAA, @usNWSgov alert through wknd: <http://tinyurl.com/9hrqv38> pic.twitter.com/pFxJyfix

6 Sep @NOAA, @usNWSgov say Hurricane Leslie brings high Rip Current risk alert to NY's ocean beaches: <http://tinyurl.com/9hrqv38> pic.twitter.com/F9275iJl

6 Sep @NOAA, @usNWSgov predict high rip current risk for NY's Atlantic Ocean beaches thru tonight. @nyseagrant's resources at <http://www.nyseagrant.org/ripcurrents>

Boating and Recreation Education

Sep 26 On YouTube: @nyseagrant specialist offers boat buying tips as part of Your News Now's "Discover Better Boating" Series: <http://tinyurl.com/bnsfsvt>

18 Sep @nyseagrant, partners grow Discover Clean & Safe Boating Campaign: central & western NY to Hudson <http://tinyurl.com/8vtyl92> pic.twitter.com/DNcHgkPJ

Jul 27 NYSG's 2012 Clean & Safe Sailboat visits Skaneateles' Antique & Classic Boat Show this wknd, w/ aquatic invasives edu: <http://tinyurl.com/cm9949g>

Sea Grant specialist talks trailer maintenance as part of Your News Now's "Discover Better Boating" Series: <http://tinyurl.com/dysvnxy> 19 Jul

Today, NYSG's Discover Clean & Safe Sailboat is at the 5th annual Owasco Lake Day in Emerson Park, Auburn, NY: <http://tinyurl.com/btrcwfw> 27 Jun

Sea Grant specialist talks vessel safety exams as part of Your News Now's monthly "Discover Better Boating" Series: <http://tinyurl.com/86xdoo3> 20 Jun

Follow NYSG on Facebook and check out pics from this month's getting-summer-ready Discover Better Boating video shoot: <http://www.facebook.com/nyseagrant> 15 Jun

This weekend, Discover Clean and Safe Boating Campaign is at Clearwater Festival, Croton Point Park, Croton-on-Hudson: <http://tinyurl.com/6qhsftl> 15 Jun

On YouTube: NYSG educates recreational users on boater safety, from late-May's National Safe Boating Week thru summer: <http://tinyurl.com/bp2ro6f> 11 Jun

Starting tomorrow, NYSG talks w/ boating industry professionals in 2012 Discover Better Boating educational TV series: <http://tinyurl.com/cl7238y> 18 May

Our Discover Clean & Safe sailboat, new watercraft inspection educator will be at Great Upstate Boat Show this weekend: <http://tinyurl.com/7hakqk6> 26 Mar

NYSG's 2012 Discover Clean & Safe Boating campaign makes a splash at Buffalo (<http://tinyurl.com/7lgmmm>) & CNY Boat Shows (<http://tinyurl.com/83mgurz>) 7 Mar

On YouTube: NYSG is at the Central New York Boat Show through this weekend, with in-water life jacket demonstrations: <http://tinyurl.com/83mgurz> 17 Feb

Learn life-saving techniques during NYSG's in-water flotation device demos at this week's Central New York Boat Show: <http://tinyurl.com/7mcvoaz> 15 Feb

Our free two-part young boater safety course offered with @USCGAux begins later this week at the Central NY Boat Show: <http://tinyurl.com/7wl997n> 14 Feb

NYSG will be at this week's Central NY Boat Show helping boaters ID ways to slow/prevent the spread of invasive species <http://tinyurl.com/8a4ry64> 13 Feb

We're teaming up with @USCGAux to offer a free young boater safety course at next week's Central New York Boat Show: <http://tinyurl.com/7wl997n> 6 Feb

We're at the 10th International Marina and Boatyard Conference talking aquatic invasives & ADA Accessibility Standards: <http://tinyurl.com/7dxxye9> 31 Jan

Marina & Boatyard Operators: Register for February 1st Clean Marina Webinar: <http://tinyurl.com/7cou8s7> @miseagrant, @ohioseagrant, @UWiscSeaGrant 27 Jan

Unwanted Medicines Education

Aug 2 @ILINSeaGrant's Pill Bottle Phil on sensible unwanted meds disposal. More: <http://www.unwantedmeds.org>, <http://www.nyseagrant.org/unwantedmeds> [pic.twitter.com/v6oQUJl8](https://twitter.com/v6oQUJl8)

Great Lakes Sea Grant progs, backed by an ongoing edu campaign, respond to recent report on unwanted medicine disposal: <http://tinyurl.com/7huanvo> 8 Jun

Experts say you don't have to wait for unwanted meds collection to dispose: <http://tinyurl.com/7w3z2ae>; NYSG has info, too: <http://tinyurl.com/7u4er9r> 17 May

NYSG's Coastal Youth Educator has some quick tips on how you can keep pharmaceuticals out of NY's waterways everyday: <http://tinyurl.com/7rvzo7k> 4 May

As seen in @TheBuffaloNews, NYSG-hosted State of Lake Erie Meeting focused on fishing trends, drug-free waters (pdf): <http://tinyurl.com/6wmnx4f> 26 Apr

NYSG urges participation in Saturday's 4th annual National Prescription Drug Take-Back Day, provides online resources: <http://tinyurl.com/8yjqcu6> 26 Apr

NYSG, other Great Lakes Sea Grant progs continue Dose of Reality edu to keep unused prescription drugs out of waterways <http://tinyurl.com/cesaj52> 17 Apr

@ILINSeaGrant: See the 15-second Dose of Reality spot on NYC Times Square's JumboTron through the end of this month: <http://tinyurl.com/6u4pldf> 19 Mar

@ohioseagrant, @ILINSeaGrant: NYSG's Helen Dosmke talks Lake Erie algal blooms, proper disposal of prescription drugs: <http://tinyurl.com/6vabehb> 10 Jan

NYSG's Helen Dosmke talks on NPR about Lake Erie's algal blooms and how to safely discard of prescription drugs: <http://tinyurl.com/6vabehb> 9 Jan

NYSG@40 Celebrations (2012)

Tune into @stonybrook's WUSB <http://wusb.fm> on Tues 7-9 pm for Walt Whitman Tribute; NYSG's related transcript: <http://tinyurl.com/c8r4w6y> 1 Jun

On YouTube: Poet George Wallace on Whitman at NYSG party: "He had intimate knowledge of working people like fishermen." <http://tinyurl.com/c8r4w6y> 6 Apr

On YouTube: Poet George Wallace on NYSG's 40th anniversary theme, a future of sustainability for NY's coastal resources <http://tinyurl.com/7a32ww4> 5 Apr

On YouTube: Sample music that NYSG's guests enjoyed during last fall's 40th anniversary celebration on Great South Bay: <http://tinyurl.com/6r4waet> 4 Apr

On YouTube: NYSG's Assistant Director reflects on the program's origins & its four decades of contributions to science: <http://tinyurl.com/7dvczst> 3 Apr

On YouTube: NYSG's stakeholders - from researchers to elected officials - at our 40th anniversary kick-off celebration: <http://tinyurl.com/dytkk9e> 2 Apr

NYSG kicked off its 40th anniversary last fall w/ a celebration at the Long Island Maritime Museum on Great South Bay: <http://tinyurl.com/dxce4r4> 30 Mar

On YouTube: Our Associate Director at @Cornell_Univ on NYSG's extension program, a bridge btw researchers-stakeholders: <http://tinyurl.com/d4twwry> 29 Mar

On YouTube: NYSG's origins & last year's series of 40th anniversary celebrations explored in this extended video clip: <http://tinyurl.com/7vyh5dx> 28 Mar

Since the 1970s, NYSG has funded over 600 research projects, as many graduate students, many in positions of influence: <http://tinyurl.com/87ova7> 27 Mar

Researchers, elected officials, anglers, educators attend our 40th anniversary Great Lakes lecture & reception series: <http://tinyurl.com/89vj3pb> 23 Mar

NYSG celebrates 40 years of "Bringing Science to the Shore," looks back at the @nytimes headline that started it all: <http://tinyurl.com/7rdfu77> 22 Mar

NYSG's Director discusses the program's 40th anniversary activities, newly-started research projects, visioning & more: <http://tinyurl.com/73qyqlm> 21 Mar

View NYSG's Winter'12 NY Coastlines in its print version/individual articles; Watch our 40th anniversary YouTube clips: <http://tinyurl.com/6uxewxx> 12 Mar

NYSG Associate Director kicks off @Cornell_Univ College of Ag & Life Sci 2012 Spring Semester Seminar Series tomorrow: <http://tinyurl.com/6lnzvjn> 30 Jan

NYSG/NYSMEA Restoration Education in Southern Louisiana (2012)

Jan 14 NY volunteers augment S. Louisiana restoration <http://tinyurl.com/a8jt3pl> ; @NOAA @coastalservice; More: <http://www.facebook.com/nyseagrant> pic.twitter.com/ZckgqH4z

11 Oct Thanks @coastalservice for coverage of @nyseagrant, @NYSMEA's bringing wetlands stewardship home: <http://tinyurl.com/98q8uv5> pic.twitter.com/gzvz2Jpl

Read new blog posts from 2 Bronx, NY educators on @NYSMEA & NYSG's '12 southern Louisiana restoration & education trip: <http://nysmea.blogspot.com> 7 May

As reported by @TBRNewspapers, @stonybrook researchers receive a share of NYSG's \$2.4M to fund research & edu studies: <http://tinyurl.com/bntjztp> 23 Apr

After @NYSMEA / NYSG's Louisiana restoration/wetlands trip, Smithtown teacher to help Sunken Meadow Park @TBRNewspapers <http://tinyurl.com/87t7jos> 20 Apr

Check out two new blog posts from an educator on @NYSMEA & NYSG's 2012 southern Louisiana restoration & education trip: <http://nysmea.blogspot.com> 18 Apr

New pics from @NYSMEA & NYSG's plant restoration/wetlands education southern Louisiana trip; Also Lower 9th Ward tour: <http://www.facebook.com/nyseagrant> 6 Apr

Final stop on @NYSMEA / NYSG's southern Louisiana trip is LUMCON, LA's university-based coastal science connection: <http://tinyurl.com/7mewgdz> 4 Apr

NYSG, @NYSMEA led NY educators late Feb to learn the value of maritime forest ridges in Port Fourchon, on Grand Isle: <http://tinyurl.com/87vzpsl> 2 Apr

@NYSMEA & NYSG's wetlands education and restoration trip to southern Louisiana was featured in @newsday's Sunday paper: <http://tinyurl.com/79q9emr> 19 Mar

NYSG & @NYSMEA led NY educators to learn about Louisiana's wetland loss & how it relates to NY's habitat loss issues: <http://tinyurl.com/7kqx6da> 14 Mar

@NYSMEA / NYSG educators explore NOLA, storm surge-protected by a \$14B, 350-mi ring of levees/flood walls/gates/pumps: <http://tinyurl.com/6ozptyr> 29 Feb

Educators on @NYSMEA / NYSG tour get to 'Center' of plant restoration in southern Louisiana, make parallels for NY opps <http://tinyurl.com/83prszl> 27 Feb

Meet the educators on this year's @NYSMEA/NYSG tour of southern Louisiana, and their revisited/new restoration efforts: <http://tinyurl.com/85938gb> 23 Feb

NYSG re-teams with @NYSMEA for a week of habitat restoration efforts and wetlands loss education in southern Louisiana: <http://tinyurl.com/7nxyq5u> 22 Feb

Requests for Proposals / Opportunities

30 Jan @nyseagrant hosts 2014-15 Biennial Research Call Q&A webinar this Monday. Info & presentation at <http://www.nyseagrant.org/proposals> pic.twitter.com/x386nEW3

28 Jan Tomorrow, @nyseagrant hosts the first of two free Q&A webinar sessions for its 2014-15 Biennial Research Call. Details <http://www.nyseagrant.org/proposals>

25 Jan Today's the application deadline for two 2013 NMFS-@SeaGrant Fellowships & 2013 @NOAA Coastal Management Fellowship: <http://www.nyseagrant.org/proposals>

Jan 23 Pre-proposals for Mid-Atlantic Sea Grant's Regional Research Request due Fri, Mar 15 Up to \$840K available. Info at: <http://www.nyseagrant.org/proposals>

Jan 15 @nyseagrant to host 2 free Q&A webinar sessions for its 2014-2015 Biennial Research Call in late Jan/early Feb. Details <http://www.nyseagrant.org/proposals>

Jan 22 @NorthBKBoatClub NYSG also to host 2 free Q&A web sessions for its 2014-15 Research Call in late Jan/early Feb. Details <http://www.nyseagrant.org/proposals>

Jan 22 @NorthBKBoatClub NYSG has limited funds each year to support special funding requests: <http://www.nyseagrant.org/proposals>, see "Out-of-Cycle Funding"

Jan 18 Today's the application deadline for 2013 @NOAA Climate & Global Change Postdoctoral Fellowships: http://www.vsp.ucar.edu/cgc/2013/2013_Program.html ... pic.twitter.com/8ZRHxOr6

Jan 17 Northeast Sea Grant Regional Social Science Research Project pre-proposals are due Fri, Feb 22. Approx \$350K available <http://www.nyseagrant.org/proposals>

19 Nov @nyseagrant offers Rapid Response Mini-Grants for Important Coastal Issues (eg., Studies of #Hurricane #Sandy Impacts): <http://www.nyseagrant.org/proposals>

8 Jan If you're a researcher looking for funding, check out @SeaGrant's new RFP map. New opportunities added when available: <http://1.usa.gov/VQzAvS>

8 Jan Pre-proposals for @nyseagrant's Biennial Research Call 2014-2015 now being accepted thru Friday, February 22, 2103 via <http://www.nyseagrant.org/proposals>

20 Dec @nyseagrant Director offers tips to potential '14 Knauss Marine Policy Fellowship applicants. Apply for that/other opps <http://www.nyseagrant.org/proposals>

18 Dec @nyseagrant is accepting applications for five fellowships through Jan-Feb '13. Deadlines vary: <http://www.nyseagrant.org/proposals> pic.twitter.com/4edOKDvb

12 Dec @NOAA Coastal Management Fellowship matches postgraduate students w/ state coastal resource agencies. Apply thru Jan 25 <http://www.nyseagrant.org/proposals>

12 Dec 2013 National Marine Fisheries Service-Sea Grant Fellowships in Population Dynamics for PhD students. Apply thru Jan 25 <http://www.nyseagrant.org/proposals>

11 Dec Grad students can apply thru Feb 1 for '13 Great Lakes Commission-Sea Grant Fellowship on env quality, eco development: <http://www.nyseagrant.org/proposals>

10 Dec '14 Knauss Fellowship open to graduate students w/ interest in ocean, coastal/Great Lakes resources & national policy: <http://www.nyseagrant.org/proposals>

10 Dec PhD students: apply for '13 Nat Marine Fisheries Service-Sea Grant Fellowships in Marine Resource Economics thru Jan 25 <http://www.nyseagrant.org/proposals>

NYSG has limited funds each year that are available to support special funding requests: <http://www.nyseagrant.org/proposals> , see "Out-of-Cycle Funding" 18 Jul

Submit your pre-proposals online by Friday for @nyseagrant, @ctseagrant Long Island Sound Study research call: <http://tinyurl.com/cpmwcns> 5 Jun

Pre-proposals now being accepted online thru June 8 for @nyseagrant, @ctseagrant Long Island Sound Study research call: <http://tinyurl.com/cpmwcns> 14 May

NYSG & @ctseagrant announce a Long Island Sound Study call for preliminary research proposals. Submit by June 8, 2012: <http://tinyurl.com/cpmwcns> 5 Apr

Deadline for graduate students to apply for 2012's Great Lakes Commission-Sea Grant Fellowship Program is next Tuesday: <http://tinyurl.com/8xa26ge> 24 Jan

Applications for 2012 NMFS-Sea Grant Graduate Fellowships in Marine Resource Economics are due next Friday, January 20: <http://tinyurl.com/6r6l7fz> 13 Jan

Graduate Students have until next Fri, Jan 20 to apply for the 2012 NMFS-Sea Grant Fellowships in Population Dynamics: <http://tinyurl.com/6mf4mp6> 11 Jan

Graduate students can apply for the 2012 Great Lakes Commission-Sea Grant Fellowship Program through January 31: <http://tinyurl.com/8xa26ge> 6 Jan

2013 Knauss Marine Policy Fellowship Prog open to grad students w/ interest in ocean, coastal, Great Lakes resources: <http://tinyurl.com/6ppzm3l> 4 Jan

General

Jan 11 Check out @nyseagrant's latest NY Coastlines <http://tinyurl.com/bgd4yoe> . E-sign up for future issues at <http://www.nyseagrant.org/nycoastlines> pic.twitter.com/kmuHblmF

21 Dec One final treat before @nyseagrant breaks for the Holidays - Our latest #NY Coastlines issue is online. Happy New Year: <http://tinyurl.com/d4u4wgw>

17 Dec Happy Holidays from @nyseagrant. And warm wishes for a bright New Year. Keep connected with us at <http://www.nyseagrant.org> pic.twitter.com/qIBhZC2R

8 Nov @nyseagrant joins @GenerationSUNY for two-day #SUNY #Systemness #NYC Conf, displays related efforts via poster #sunnycon pic.twitter.com/0vonv7hx

Oct 25 Thanks NYS Legislative Commission on Rural Resources for promoting @nyseagrant's e-lists. Sign up <http://www.nyseagrant.org/ecurrents> pic.twitter.com/YGhZmKWZ

5 Sep Thanks @PostStandard for keeping @nyseagrant "above the fold" in a recent Sunday edition. Sign up <http://www.nyseagrant.org/ecurrents> pic.twitter.com/usL5ry1G

5 Sep Preview @nyseagrant's inaugural issue of Currents <http://tinyurl.com/c4js2uq> ; Sign up for future issues of the e-newsletter <http://www.nyseagrant.org/ecurrents>

31 Aug @nyseagrant's first E-Currents is out: <http://tinyurl.com/8wj3v6m> . Sign up for our list in a few clicks: <http://www.nyseagrant.org/ecurrents> pic.twitter.com/S8i7hMMr

21 Aug A sneak peek at the masthead for our e-newsletter Currents, debuting by month's end. Sign up at: <http://www.nyseagrant.org/nycoastlines>

7 Aug Our inaugural issue of Currents, NYSG's e-supplement to NY Coastlines, surfaces later this month. Are you on the list? <http://www.nyseagrant.org/nycoastlines>

Some Additional NYSG Marine Efforts

30 Jan @Cornell grad student on Hudson Valley birdsong links to PCB, other contaminant exposure levels: <http://tinyurl.com/b499rye> pic.twitter.com/jVdSPdX1

25 Jan New York Bight a focus at Fall '12 NY Marine Sciences Consortium Research Symposium @stonybrookku: <http://tinyurl.com/b2tc54c> pic.twitter.com/wsMHR9U3

Jan 16 There's always something to do in your watershed to make a difference; #LongIslandSound Study: <http://tinyurl.com/2b5ayfi> pic.twitter.com/cbed0vLc

Jan 16 We revisit a 2-yr wetlands edu project w/ LI Sound Study's Educator, who leaves NYSG this week: <http://tinyurl.com/a8jt3pl> pic.twitter.com/c8EreS43

10 Jan @nyseagrant's Director talks @stonybrook's NY Marine Consortium Conf, attended by NYSG Asst Dir: <http://tinyurl.com/adxodl2> pic.twitter.com/AYj11Mqs

9 Jan @nyseagrant co-sponsors last Summer's 1st #longisland Green Infrastructure Conf @BrookhavenLab: <http://tinyurl.com/a9z7em3> pic.twitter.com/uJ8QK57I

21 Nov @cceofsuffolk launches Empire State In-Shell Bay Scallops @ Grand Central Oyster Bar #NYC. More: <http://www.facebook.com/nyseagrant> pic.twitter.com/NpBVaeAc

Oct 23 @BostonGlobe reports lawn fertilizers cause damage to marshes <http://tinyurl.com/9rmxv5n>. #LISound Study offers alternatives: <http://tinyurl.com/9lgcrvy>

18 Oct IFISHNY's Fall'12 newsletter has invasive Northern Snakehead, fluke, LI & #NYC fishing hotspots: <http://tinyurl.com/9rdk7re> pic.twitter.com/norwjv7Q

12 Oct Job Opportunity: @nyseagrant seeks a dynamic individual to serve as the Long Island Sound Study Outreach Coordinator: <http://tinyurl.com/9zvo5yt>

4 Oct 7th graders take sediment sample for a Hudson River Estuary Day event. More @nyseagrant efforts: <http://www.nyseagrant.org/hriver> pic.twitter.com/5Yu3oVTR

Sep 21 #CTDEEP studies #LISound lobster declines; @NOAA, @nyseagrant, @ctseagrant research has implicated series of stressors: <http://tinyurl.com/cwc7l89>

20 Sep @nyseagrant, @nysmea, @ccecornell collect data on endangered birds of Great Gull Island, #LISound: <http://tinyurl.com/947fdd8> pic.twitter.com/ploTu04j

15 Sep @GMENEGIO Hi Greg. Contact Barbara.Branca@stonybrook.edu for possible interest in westhampton's oyster festival on oct 6. Thanks.

14 Sep On YouTube: @nyseagrant-funded @stonybrooku researcher featured in "Brown Tide: Blight on the Bays" special report: <http://tinyurl.com/9glqns8>

13 Sep @stonybrooku researcher says red tide made 2nd earliest appearance since 1st showing in LI waters: <http://tinyurl.com/9qnals4> pic.twitter.com/AmxTqyrN

13 Sep Brown tide ID-ed from Shinnecock to Moriches Bay for 6th consecutive yr; @nyseagrant @stonybrooku researcher confirms: <http://tinyurl.com/9qnals4>

12 Sep Long Island Sound science/policy/outreach abstract submissions welcome for Feb 2013 ASLO Aquatic Sciences Mtg in NOLA: <http://tinyurl.com/98ehcgd>

20 Aug Thanks to @nyseagrant, @cornell's Seafood Throwdown chefs, judges, emcee Bonnie Grice. More pics <http://www.facebook.com/nyseagrant> pic.twitter.com/rfmCKrsa

17 Aug Today's Seafood Throwdown w/ @nyseagrant, @cornell, @ccecornell, @CCEofSuffolk. Here's video on July's Brooklyn event: <http://tinyurl.com/bsdxxn3>

16 Aug After July's tasty Seafood Throwdown <http://tinyurl.com/cpk4y56> , @nyseagrant, @CCEofSuffolk host one Fri <http://tinyurl.com/9w3ltjo> pic.twitter.com/eFLU9obc

15 Aug @nyseagrant, @cornell partner on Fri for Seafood Throwdown, a Community-Supported Fisheries-themed cooking competition: <http://tinyurl.com/9w3ltjo>

15 Aug Atlantic Sturgeon populations a @NYULMC researcher ID-ed to help manage this US endangered species <http://tinyurl.com/8g6hmln> pic.twitter.com/09jyH2zf

9 Aug NYSG-funded @NYULMC researcher IDs distinct Atlantic Sturgeon populations to help manage this U.S. endangered species: <http://tinyurl.com/8g6hmln>

8 Aug @stonybrooku researchers were awarded a share of \$820K to address low oxygen, red tide in LI Sound <http://tinyurl.com/8oub9he> pic.twitter.com/E5NQo6aw

8 Aug @nyseagrant @ctseagrant research examines hypoxia, red tide - serious threats to Long Island Sound's ecological health: <http://tinyurl.com/8oub9he>

NYSG's Spr/Sum '12 NY Coastlines has stories on LI Sound research, Lake Ontario fish trawl, NYC teacher training, more: <http://tinyurl.com/6vjoadq> 10 Jul

Sea Grant wishes you a safe and sunny holiday. Educate yourself about swimming free of rip currents at the shore: <http://www.nyseagrant.org/ripcurrents> 3 Jul

I FISH NY's Sum'12 Newsletter has saltwater fly fishing, lures, fishing thru summer weeds, LI and NYC fishing hotspots: <http://tinyurl.com/6raezhe> 29 Jun

Harmful Algal Bloom research funded by NYSG, @NOAA, @ENERGY, @NSF, @NIHforHealth featured in @WHOImedia Oceanus mag: <http://tinyurl.com/79f8zhk> 25 Jun

NYSG, @USCG, @USCGAux teamed for 3rd Safety-at-Sea training in Montauk; Uninspected Passenger Vessel operators targeted <http://tinyurl.com/7wuqpyl> 18 Jun

NYSG is a sponsor of 1st annual, water-themed Long Island Infrastructure Conference & Expo June 21 at @BrookhavenLab: <http://tinyurl.com/85cm8da> 7 Jun

It's Rip Current Awareness Week and @NOAA and @nyseagrant educate beachgoers about swimming safely this summer season: <http://tinyurl.com/87b2lwt> 6 Jun

IFISHNY will be at the 5th Annual Pine Barrens Discovery Day on Sat at Wertheim National Wildlife Refuge, Shirley, NY: <http://tinyurl.com/7pzq28o> 4 Jun

@NOAA, @nyseagrant, @stonybrook research featured at recent symposium on harmful algal blooms in NY's coastal waters: <http://tinyurl.com/7a3bn7h> 1 Jun

As seen in the Great Neck Record, NYSG's NEMO Program helps local officials comply with storm sewer system regulations: <http://tinyurl.com/coz74ab> 23 May

On YouTube: Safety-at-Sea is a @USCGAux award-winning prog, from its partners to fishermen/charterboat captains reached: <http://tinyurl.com/7mglyyz> 16 May

As seen on @boatinglocal, NYSG, @Cornell, @ccecornell, @NYInvasiveSpp urge boaters to prevent spread of hydrilla (pdf): <http://tinyurl.com/873oyay> 17 May

@USCGAux awards NYSG for safe-at-sea training. Over 100 commercial fishermen reached. 3rd event Thurs in Montauk (pdf): <http://tinyurl.com/6vu7zyp> 16 May

NYSG's Safety-At-Sea workshop garners appreciation from @USCGAux, NE Sea Grant Network; Third annual event Thursday: <http://tinyurl.com/c43msvz> 15 May

@Newsday reports today that @stonybrook researchers will receive a share of @nyseagrant's recent \$2.4M award (pdf): <http://tinyurl.com/crfrfx6> 9 May

Mentions from @sbstatesman, @BoatingTimesLI re: @stonybrook studies, part of \$2.4M grant to fund NYSG research & edu: <http://tinyurl.com/bntjztp> 25 Apr

NYSG's Long Island Sound Study Educator asks students at Under the Sea: What are you going to do to protect the Sound?: <http://tinyurl.com/6t239ba> 7 May

Thanks to @BoatingTimesLI for helping remind others that Long Island Sound is ours to protect, restore, and enjoy: <http://tinyurl.com/3k9jxcq> 25 Apr

With #EarthDay approaching, NYSG's has a variety of Green Tips for Coastal Living, for anglers, beachgoers, boaters ... <http://tinyurl.com/c57m372> 20 Apr

NYSG offers green, clean tips for recreational boaters, best management practices for marina operators @BoatingTimesLI: <http://tinyurl.com/89ukhv7> 19 Apr

New on NYSG-developed @Cornell_ Univ Seafood Health Facts site: customizable info on amount/source of seafood consumed: <http://tinyurl.com/brqe4bt> 16 Apr

New on NYSG-developed Seafood Health Facts Web site: customizable info based on amount and source of seafood consumed: <http://tinyurl.com/brqe4bt> 16 Apr

As seen in @newsday, @stonybrook researchers say a mild winter may bring more algal blooms, less shoreline erosion: <http://tinyurl.com/bvurz5x> 11 Apr

I FISH NY's event schedules for Long Island and New York City are now available for the 2012 spring - fall seasons: <http://tinyurl.com/d56m82z> 30 Mar

I FISH NY's Spring '12 Newsletter has info on trout, Cooperative Angler Diary Program, fishing hotspots on LI, in NYC: <http://tinyurl.com/6raezhe> 29 Mar

Last night, our Long Island Sound Specialist had students make a Sound "promise." See the pic, read the top pledge at: <http://www.facebook.com/nyseagrant> 28 Mar

I FISH NY seeks volunteers for the Spring Family Fishing Festival on Saturday, April 14th at Belmont Lake State Park: <http://tinyurl.com/7v7lhq5> 20 Mar

As reported in @PortJeffPatch, Mt. Sinai High School placed 2nd at @stonybrook 11th Annual Bay Scallop Bowl (pdf): <http://tinyurl.com/7ade25v> 15 Mar

As reported in @DalerPatch, Farmingdale High School landed in Top 8 at @stonybrook 11th Annual Bay Scallop Bowl (pdf): <http://tinyurl.com/76ltaer> 8 Mar

Bronx High School of Science students crowned champs for 2nd time in 11-year history of @stonybrook Bay Scallop Bowl: <http://tinyurl.com/6p4mfh9> 5 Mar

@stonybrook will host 80 students from 15 NY high schools as they compete in tomorrow's 11th Annual Bay Scallop Bowl: <http://tinyurl.com/6p4mfh9> 2 Mar

Cook a hearty stew w/ Cod, whose popularity as a lean white fish has carried over to pollock, monkfish, halibut (pdf): <http://tinyurl.com/857mhaf> 23 Jan

NYS Ext at @Cornell_Univ show benefits to NY shoreline- from coastal waters, communities to youth, economy, educators: <http://tinyurl.com/7t72za9> 16 Mar

Some Additional NYS Great Lakes Efforts

Oct 22 @nyseagrant Launch Stewards on @NYSDEC7 sea lamprey control efforts in Lake Ontario tributaries <http://tinyurl.com/8ddqklg> pic.twitter.com/ITbgnVBF

17 Oct Great Lakes Sea Grant programs join @EPAgov, @CDCgov, @US_FDA, @USGS for Type E Botulism manual: <http://tinyurl.com/d5c4k4r> pic.twitter.com/FIfF5fRC

16 Oct How do Great Lakes measure up to Large Lakes of the World? See @nyseagrant, @IAGLR's fact sheet: <http://tinyurl.com/7gptnhy> pic.twitter.com/hhrBT2o2

15 Oct A new brochure by @noaa @nyseagrant @cornell @ccecornell educates boaters on aquatic invaders: <http://tinyurl.com/8eeuv5f> pic.twitter.com/KCaCUTh8

10 Oct @nyseagrant Launch Stewards educate boaters to reduce aquatic invasives w/ watercraft inspection <http://tinyurl.com/8nb7nve> pic.twitter.com/WPHfI9RM

4 Oct @ohioseagrant in @ABC News story on toxic, human health-threat algae blooms: <http://tinyurl.com/8c7pu9a> @nyseagrant photos: <http://tinyurl.com/9pk6mmt>

4 Oct On Air @WRVO: @nyseagrant partners on new global observation technology for recreational boaters on St. Lawrence River: <http://tinyurl.com/d28bfz2>

3 Oct On Air @WRVO: @nyseagrant & @NYSDEC7 stationed college students at upstate NY boat launches for invasive species edu: <http://tinyurl.com/9ccx2r7>

Oct 2 On YouTube: @nyseagrant's specialist talks fall boating opps, part of Your News Now's "Discover Better Boating" Series: <http://tinyurl.com/9q7lq39>

Oct 1 On YouTube: @nyseagrant's Launch Stewards discuss what they do, how boaters can help reduce spread of invasive species: <http://tinyurl.com/9axc4nb>

Sep 28 Help @nyseagrant @ILINSeaGrant @MNSeaGrant @miseagrant @ohioseagrant @UWiscSeaGrant keep drugs out of the Great Lakes: <http://tinyurl.com/cwn6w7l>

Sep 25 On YouTube: @nyseagrant educator talks Asian Carp, an invasive fish that could have a strong impact on the Great Lakes: <http://tinyurl.com/cnb8nm2>

Sep 24 Lake Ontario visioning starts @TheBuffaloNews @PostStandard @SaveOurSodus @WayneCountyLife, @OswegoCoToday @WebsterPost <http://tinyurl.com/9kt9htk>

19 Sep Thanks to a @EPAGreatLakes grant, @nyseagrant & partners invite the public to a Lake Ontario visioning workshop series: <http://tinyurl.com/9kt9htk>

7 Sep On YouTube: Tomorrow's @SeawayTrail, @NOAA, @usNWSgov, @nyseagrant's GL Underwater; WWNY (<http://tinyurl.com/8mt4q4s>), YNN (<http://tinyurl.com/9vbexg8>)

6 Sep Discounted pre-reg for Sat's @SeawayTrail, @NOAA, @usNWSgov, @nyseagrant GL Underwater in Clayton, NY extended thru Fri <http://tinyurl.com/c8fkabd>

28 Aug Volunteers gathered over 350 lbs of invasive water chestnuts at Oneida Lake Rotary mid-July event: <http://tinyurl.com/9m8hhxx> pic.twitter.com/o8jrTsGb

27 Aug @Cornell Invasive Species Specialist on water chestnut in Oneida Lake, where lack of natural enemies allow it to thrive <http://tinyurl.com/9m8hhxx>

14 Aug Trawl scale models--incl largest one in world from Newfoundland--were at @nyseagrant, @usgs wrkshp <http://tinyurl.com/8onfpdt> pic.twitter.com/Ytl7nXRI

13 Aug @nyseagrant, @usgs brought together experts for a marine trawl design workshop at @Cornell Biological Field Station: <http://tinyurl.com/8onfpdt>

6 Aug Kayakers like this one at Pine Grove, Oswego County can help curtail spread of aquatic invasives: <http://tinyurl.com/bwqkb49> pic.twitter.com/JIIDBBj5

6 Aug Our Launch Stewards encourage kayakers to help control spread of aquatic invasives. Thanks for noticing, @SaveOurSodus: <http://tinyurl.com/bwqkb49>

Aug 1 On YouTube: NYSG on GLOS, @NOAA_GLERL partner Web site w/ real-time info for boaters on water depth & current strength: <http://tinyurl.com/comw995>

Jul 31 NYSG, GL Observing System, @NOAA_GLERL provide boaters & marina operators w/ real-time St. Lawrence River forecasting: <http://tinyurl.com/cv4u5vw>

Jul 30 NYSG's 2012 Launch Stewards article series starts with ways boaters can help keep waterways clean of invasive species: <http://tinyurl.com/ce9zwn5>

Jul 26 NYSG's Launch Stewards-from @sunyesf, @SUNYCantonNews, others-educate boaters re:vessels inspection, aquatic invasives: <http://tinyurl.com/d2egnef>

23 Aug Thanks to @NYSDECR7, @USGS for helping make our colorful Lake Ontario Salmon/Trout guide a success <http://tinyurl.com/cyedmzp> pic.twitter.com/m0mxgzw3

NYSG's Launch Stewards-from @sunyesf, @SUNYCantonNews, others-educate boaters re:vessels inspection, aquatic invasives: <http://tinyurl.com/d2egnef> 26 Jul

We invite you to join us tomorrow for a #seafoodthrowdown, #CityofWaterDay, Port Ontario #invasives weed pull. More at <http://www.nyseagrant.org> 13 Jul

This Saturday, NYSG partners on Port Ontario project to pull invasive water chestnut plants in Salmon River Estuary: <http://tinyurl.com/blvazvk> 12 Jul

NYSG's Spr/Sum '12 NY Coastlines has stories on LI Sound research, Lake Ontario fish trawl, NYC teacher training, more: <http://tinyurl.com/6vjoadg> 10 Jul

Sea Grant wishes you a safe and sunny holiday. Educate yourself about swimming free of rip currents at the shore: <http://www.nyseagrant.org/ripcurrents> 3 Jul

Teachers wanted for Lake Ontario workshop; Learn from @Cornell, @NYSDEC7, @USGS, @sunnyoswego, @nyseagrant specialists: <http://tinyurl.com/6qdfh2f> 2 Jul

NYSG and funded researchers from @sunyesf, @UBCommunity join @SaveOurSodus, others to keep algae at Bay in Sodus: <http://tinyurl.com/7t7eg5g> 22 Jun

On YouTube: Rip Currents in Great Lakes? Yes. @MNSeaGrant show swimmers how to escape these narrow channels of water: <http://tinyurl.com/d3wzp5e> 14 Jun

Volunteer this Sunday at Sunken Meadow State Park w/ @NYstateparks & Long Island Sound Study for an invasive weed pull: <http://tinyurl.com/bvksvj2> 8 Jun

It's Rip Current Awareness Week and @NOAA and @nyseagrant educate beachgoers about swimming safely this summer season: <http://tinyurl.com/87b2lwt> 6 Jun

NYSG partners again on Port Ontario volunteer project to pull invasive water chestnut plants in Salmon River Estuary: <http://tinyurl.com/blvazvk> 4 Jun

NYSG and @IAGLR's fact sheet features "Large Lakes of the World," which are also featured in an online database (pdf): <http://tinyurl.com/7gptnhy> 30 May

As heard on North Country Public Radio, NYSG, @Cornell, @ccecornell, @NYInvasiveSpp have resources on invasive Hydrilla <http://tinyurl.com/c7oznwz> 10 May

As mentioned by @SaveOurSodus, @nyseagrant funds Lake Ontario algal bloom (Microcystis) research on Sodus Bay: <http://tinyurl.com/75vno66> 9 May

NYSG funds @sunyesf, #UBuffalo study in Sodus Bay, Lake Ontario, which suffered from Microcystis algal blooms Aug '10: <http://tinyurl.com/6mx2pgv> 9 May

Thanks @SaveOurSodus for helping us show NY's marina operators, boaters, anglers how to prevent the spread of hydrilla: <http://tinyurl.com/7cgknky> 8 May

NYSG, @Cornell, @ccecornell, @NYInvasiveSpp educates NY's marinas, boaters, anglers to battle invasive hydrilla plant: <http://tinyurl.com/7gc53cf> 8 May

On YouTube: As seen on WBNG News, concerns are growing about Hydrilla's presence in Cayuga Lake, NY's Tompkins County: <http://tinyurl.com/7l5sqwf> 10 May

NYSG Extension at @Cornell and the Great Lakes Research Consortium partner to broaden their outreach and resources: <http://tinyurl.com/6qnr7pk> 4 May

@LASeaGrant turns invasive carp into nutritious meal for Haitian orphans <http://go.usa.gov/Vg7> ; Also, we have fact sheet <http://tinyurl.com/869x44j> 4 May

@Newsday reports today that @stonybrooku researchers will receive a share of @nyseagrant's recent \$2.4M award (pdf): <http://tinyurl.com/crfrfx6> 9 May

Mentions from @sbstatesman, @BoatingTimesLI re: @stonybrooku studies, part of \$2.4M grant to fund NYSG research & edu: <http://tinyurl.com/bntjztp> 25 Apr

With #EarthDay approaching, NYSG's has a variety of Green Tips for Coastal Living, for anglers, beachgoers, boaters ... <http://tinyurl.com/c57m372> 20 Apr

NYSG partners on brochure, fact sheet for boaters, marinas, anglers to prevent spread of invasive water weed Hydrilla: <http://tinyurl.com/7jr4emt> 13 Apr

New full-color fish ID guide for #salmon & #trout in #LakeOntario. Thanks @greatlakesinfo, @SaveOurSodus for mentions: <http://tinyurl.com/84jtpy4> 9 Apr

Great Lakes Research Consortium names NYSG Educator as Assoc Director. Nearly 350 GLRC faculty members conduct research <http://tinyurl.com/cezw5ds> 6 Apr

@ILINSeaGrant: NYSG's Asian Carp fact sheet on the invasive fish's prevalence in Great Lakes, Mississippi River basins: <http://tinyurl.com/869x44j> 20 Mar

\$2.4M for NYSG in 2012-13, incl research @stonybrook, @Cornell_Univ, @sunyesf on storm surges, seafood, algal blooms: <http://tinyurl.com/7k6hlxb> 15 Mar

As reported by @AP, NYSG official raises awareness of small biz, byway communities at White House Great Lakes Briefing: <http://tinyurl.com/7m7qtrm> 6 Mar

As @USGS confirms, NYSG's co-organized trawl workshop was an award-winning info exchange on food webs, fish management: <http://tinyurl.com/7ostf3z> 20 Feb

College and graduate students needed for NYSG's new aquatic invasive species resource/watercraft inspection edu prog: <http://tinyurl.com/7fyfc28> 17 Feb

@ohioseagrant: Researchers find algae grows under Lake Erie ice, spurs dead zones, impacts summertime lake conditions: <http://tinyurl.com/72jqcec> 16 Feb

On YouTube: As seen on a NYSG-featured news segment, little snow could mean low Lake Ontario/St. Lawrence River levels: <http://tinyurl.com/83rx74r> 10 Feb

On YouTube: NYSG provides insights on International Joint Commission's Lake Ontario/St. Lawrence River water level plan: <http://tinyurl.com/7mv2rul> 1 Feb

NYSG Ext at @Cornell_Univ show benefits to NY shoreline- from coastal waters, communities to youth, economy, educators: <http://tinyurl.com/7t72za9> 16 Mar



AMY C. BOYAJIAN

Long Island Sound Study Outreach Coordinator • New York Sea Grant
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EDUCATION

Ed.M., Science Education, May 2012
Rutgers, The State University of New Jersey, New Brunswick, New Jersey

B.S., Environmental Science, January 2007
Rutgers, The State University of New Jersey, New Brunswick, New Jersey

PROFESSIONAL EXPERIENCE

New York Sea Grant

Long Island Sound Study Outreach Coordinator
February 2013 – Present

- Develop new educational tools and programs designed to bring about behavior change related to protecting and restoring the natural resources of Long Island Sound and its watershed
- Coordinate the implementation of traditional Long Island Sound Study (LISS) outreach programs, education, and tools
- Provide leadership for the LISS Citizens Advisory Committee

Rutgers Cooperative Extension Water Resources Program

Program Associate
June 2008 – February 2013

- Assisted the Extension Specialist in Water Resources in assessing stakeholder needs as it pertains to water resources issues
- Assisted the Extension Specialist in Water Resources in the development and delivery of extension programming in water resources based upon stakeholder needs
- Assisted the Extension Specialist in Water Resources with preparing grant proposals to secure funding for water resources projects that integrate research, education, and extension
- Assisted the Extension Specialist in Water Resources in preparing extension materials needed for successfully delivering extension programming

Pennonni Associates, Inc.

Graduate Environmental Scientist
January 2007 – June 2008

- Participated in field work such as low-flow groundwater and potable water quality sampling, soil sampling, indoor air quality investigations, and environmental building surveys for

- asbestos, mold, lead-based paint, and hazardous materials
- Performed oversight for health and safety and mold remediation projects
- Prepared technical reports detailing site investigations, specifications/workplans, health and safety plans, Phase I Environmental Site Assessments, and Preliminary Site Assessments

PUBLICATIONS

- *Rain Garden Outreach Manual*, Rutgers University, March 2011
- *Rain Garden Manual of New Jersey*, Rutgers University, November 2010
- *Rain Garden Installation Services Directory of New Jersey*, Rutgers University, E326, August 2010
- *Rain Barrels Part I: How to Build a Rain Barrel*, Rutgers University, E329, March 2010

CONFERENCE PROCEEDINGS

- Boyajian, A., Obropta, C., Da Silva, R., Mellor, S., Haberland, M., Kinsey, S., McCann, M., Troiani, D., Kukola, R., Szkotak, R., and McGee, C. (2012) Stormwater Management in Your Schoolyard: Connecting Youth to Water in the Cooper River Watershed, Land Grant and Sea Grant National Water Conference, Portland, OR, USA, May 20-24, 2012.
- Yergeau, S., Boyajian, A., and Obropta, C. (2012) Evaluation of Soil Compaction in Rain Gardens, Land Grant and Sea Grant National Water Conference, Portland, OR, USA, May 20-24, 2012.
- Flahive DiNardo, M., Benham, B., Boyajian, A., Cummings, M., Crawford, D., Hoffman, L., Lawrence, J., Obropta, C., Pearson, B., Rusciano, G., Rusinek, T., and Thompson, J. (2011) Stormwater Management in Your Backyard: An Extension Initiative for NJ, NY and VA, NACAA Annual Meeting and Professional Improvement Conference, Overland Park, KS, USA, August 7-11, 2011.
- Flahive DiNardo, M., Obropta, C.C., Cummings, M., Rusciano, G. and Boyajian, A. (2010) Stormwater Management in Your Backyard: Train-the-Trainer for Master Gardeners, Land Grant and Sea Grant National Water Conference, Hilton Head Island, SC, USA, February 21-25, 2010.
- Flahive DiNardo, M., Obropta, C.C., Cummings, M., Rusciano, G., Boyajian, A., Benham, B., and Rusinek, T. (2010) Tri-State Teamwork, Bringing Stormwater Management to Your Backyard, Land Grant and Sea Grant National Water Conference, Hilton Head Island, SC, USA, February 21-25, 2010.
- Flahive DiNardo, M., Obropta, C.C., Cummings, M., Rusciano, G. and Boyajian, A. (2009) Rain Garden Training for Professional Landscapers, USDA CSREES National Water Conference, St. Louis, MO, USA, February 8-11, 2009.

AWARDS

New Jersey Governor's Environmental Excellence Award, Healthy and Sustainable Communities Category, "Camden SMART Initiative," January 2013

US EPA Environmental Merit Award, "New England Rain Garden Training Team," April 2012

NACAA Achievement Award, National 2nd Place Winner, Extension Education Poster Session Program, "Stormwater Management in Your Backyard: An Extension Initiative for NJ, NY, and VA," August 2011

NACAA Communications Award, National Finalist for Learning Module, *Rain Garden Outreach Manual*, August 2011

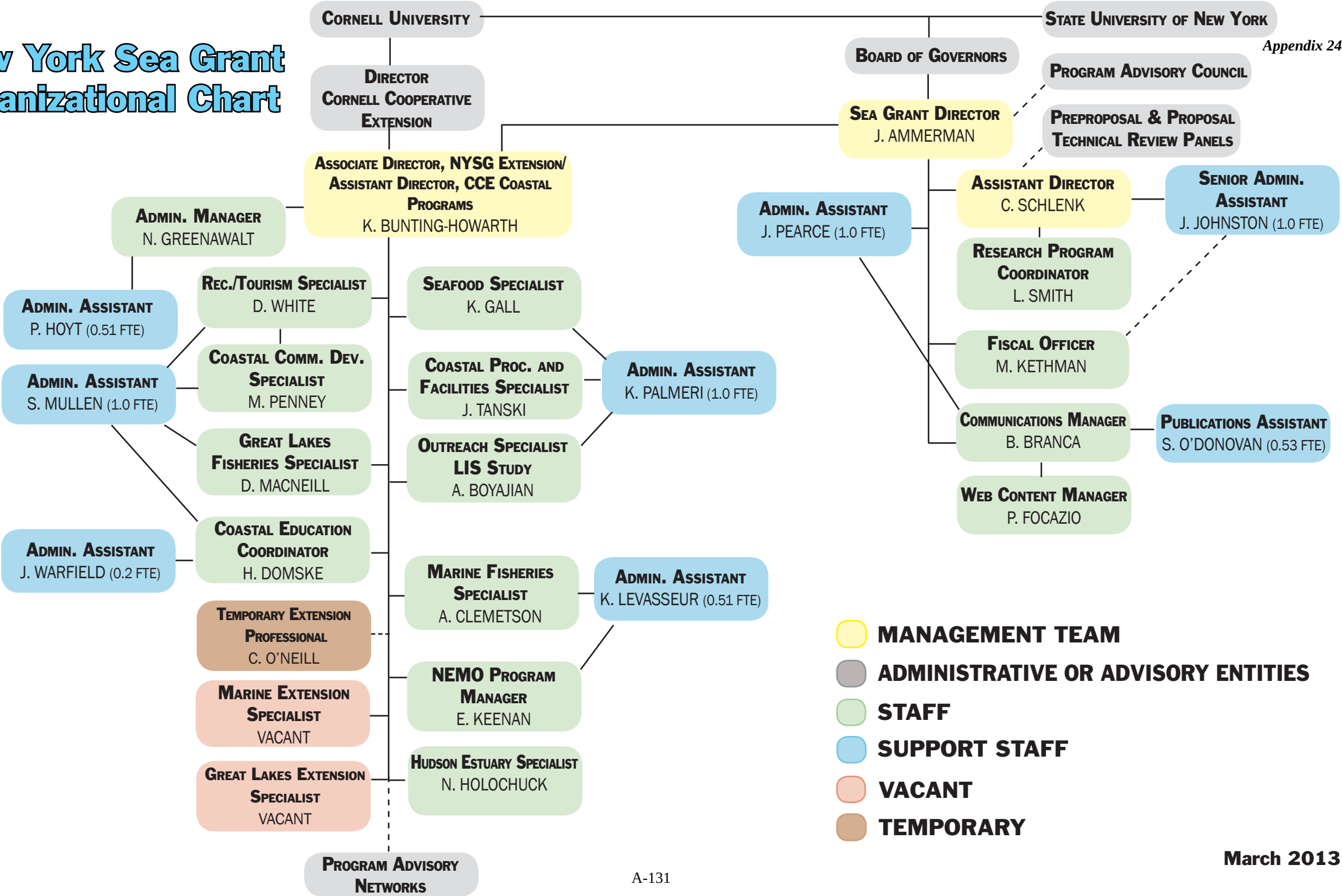
NJASLA Merit Award winner in Landscape Architecture Communications, *Rain Garden Manual of New Jersey*, January 2011

NJASLA Environmental Enhancement Award, Holmdel Village Elementary School Rain Garden Program, January 2011

US EPA Environmental Quality Award, “Stormwater Management in Your Backyard” Extension Education Program, April 2010

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New York Sea Grant Organizational Chart



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NEW YORK SEA GRANT PROGRAM ADVISORY COUNCIL 2013

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Richard P. Balla

Education

Bachelor of Science (1984); Major in Agricultural Engineering
Cornell University, Ithaca NY

Work Experience

U.S. Environmental Protection Agency (November 1984 to Present)

Current Position: Supervisory Environmental Engineer

Chief, Watershed Management Branch , Clean Water Division, U.S. EPA Region 2 (March 2013 to Present)
290 Broadway (24th Floor), 290 Broadway, NY NY 10007, 212-637-3788, balla.richard @epa.gov

Previous Positions

Environmental Engineer (Watershed Management Branch, Clean Water Division)

Peconic Estuary Program Manager: Since September 1994, I served as the coordinator of the Federal government's participation in the Peconic Estuary Program, one of only 28 "Estuaries of National Significance" designated by the EPA Administrator. I played a lead role in writing the Peconic Estuary Comprehensive Conservation and Management Plan (2001) and was the primary author of the Peconic Estuary Nitrogen Total Maximum Daily Load (2007) and Peconic Estuary Environmental Indicators Report (2005). I provide technical assistance and input and perform grant project officer duties on a wide range of topics to preserve, protect and enhance water quality, habitats and living resources.

New York State Nonpoint Source Coordinator: Since September 2007, I have served as the lead for oversight of New York State's implementation of its Nonpoint Source Management Program and for Federal grants funding implementation.

Acting Director, New York-New Jersey Harbor Estuary Program (February 2010 - April 2010)

During this temporary promotion, I performed the Program Director's duties for this complex urban ecosystem.

Acting Chief, Freshwater Protection Section (November 2002 – March 2003 & July 1996 – January 1997)

During these two details, I supervised a diverse staff of up to 11 technical professionals administering planning and implementation programs under the Clean Water Act, the Safe Drinking Water Act, the Great Lakes Critical Programs Act, and the Comprehensive Environmental Response, Compensation and Liability Act, as well as the Great Lakes Water Quality Agreement.

Chief, Water Quality Management Section (January 1992-September 1994)

As the Chief of this Section, I supervised a diverse staff of engineers and scientists, providing oversight of the Onondaga Lake, Lake Champlain, Clean Lakes and Nonpoint Source Management Programs, as well as administration of planning and implementation grants under the Federal Clean Water Act.

Environmental Engineer (November 1984- January 1992)

My duties included serving as the regional water quality standards coordinator expert and regional nonpoint source coordinator. I played a leadership role in implementing new provisions of the Federal Water Quality Act of 1987, including those requiring states to adopt or have Federal standards promulgated for toxic substances, and developing and implementing guidelines and funding guidance for developing nonpoint source assessment reports and management programs.

Honors and Awards

- Recipient of six EPA Bronze Medals for Commendable Service
- Recipient of three EPA Region 2 Distinguished Achievement Awards.

MAX PFEFFER, PH.D

Max Pfeffer, Professor of Development Sociology, is Senior Associate Dean in the College of Agriculture and Life Sciences at Cornell University. His responsibilities include faculty affairs, department and program reviews, sponsored research oversight, management of core research funds, and academic aspects of facilities and human resources.

Pfeffer's work concentrates on environmental sociology and sociological theory focusing on a variety of rural and urban communities, including rural/urban fringe areas. His expertise and research in key policy areas, including land use and environmental planning, rural labor markets, and rural-to-urban and international migration, have helped Cornell develop a reputation with policy makers for innovative solutions to pressing social issues. Research sites include rural New York, Mexico, and Central and South America.

Pfeffer received his bachelor's degree in sociology from the University of Colorado (1976), and his master's (1979) and doctorate (1986) degrees from the University of Wisconsin. An assistant professor at Rutgers from 1988-1993, he joined the Cornell faculty in 1993 as assistant professor in the department of rural sociology, became an associate professor in 1996, and professor in 2002. Pfeffer has served as associate director of both the Cornell University Agricultural Experiment Station and the Center for the Environment. From 2002-2004 Max served as Chair of the New York Sea Grant Board of Governors.

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GERALD A. BARNHART

Gerald (Gerry) Barnhart is the owner/proprietor of Victory View Vineyard in the Town of Easton in Washington County, New York. Barnhart is a founding member and current President of the Upper Hudson Valley Wine and Grape Association. Before beginning his current career as a vintner, Gerry worked for 29 years for the Division of Fish, Wildlife and Marine Resources in the New York State Department of Environmental Conservation (DEC), retiring in August 2007.

Barnhart holds an AAS degree in forestry from Paul Smith's College (1972) and a BS in fishery science from Cornell University (1974). He joined DEC as a regional fisheries biologist in 1979 and held various positions including Coldwater Unit Leader, Great Lakes Section Head, Assistant Director, and for the last 10 years of his tenure with DEC, Director of the Division of Fish, Wildlife and Marine Resources.

Gerry was a long-time member of the American Fisheries Society, the Wildlife Society and the Association of Fish and Wildlife Agencies. He has served as President of the New York Chapter of the American Fisheries Society; Secretary-Treasurer, Vice-President and President of the Northeast Association of Fish and Wildlife Resource Agencies; and as a member of the Executive Committee of the Association of Fish and Wildlife Agencies. Barnhart also chaired the Sustainable Wildlife Use Committee and Resolutions Committee of the Association of Fish and Wildlife Agencies.

Barnhart's primary professional interests include sustainable agriculture, strategic planning, performance-based management, integration of social and natural sciences, and landscape-scale natural resource conservation. He is an avid angler, hunter canoeist, hiker and aviator. He and his wife Mary live on a 115-acre farm in rural, upstate New York where they grow French-American hybrid grapes and manage habitats to support diverse flora and fauna. They have three grown children.

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ALEXANDER N. CARTWRIGHT, PhD

a. Professional Preparation

University of Iowa	Electrical & Computer Engineering	B.S., August 1989
University of Iowa	Electrical & Computer Engineering	PhD, May 1995
University of Iowa	Photonics & Quantum Electronics	Postdoctoral Scientist 1995

b. Appointments

University at Buffalo, The State University of New York, Buffalo, New York

University at Buffalo Faculty Appointments

Aug. 2005 – present:	Professor of Electrical Engineering, University at Buffalo (UB)
July 2009 – present:	Professor of Biomedical Engineering, UB
Aug. 2005 – present:	Adjunct Professor of Physics, UB
Aug. 2000 – July 2005:	Associate Professor of Electrical Engineering, UB
Aug. 1995 – July 2000:	Assistant Professor of Electrical Engineering, UB

University at Buffalo Administrative Positions

Jan. 2012 – present:	Vice President for Research and Economic Development
Jan. 2011 – Jan. 2012:	Vice President for Research
April 2011 – present:	Operations Manager, Research Foundation for the State University of New York
July 2010 – Jan. 2011:	Interim Vice President for Research
Oct. 2010 – present:	Acting Executive Director of the New York State Center of Excellence in Bioinformatics and Life Sciences
July 2009 – June 2010:	Chair, Electrical Engineering Department
July 2009 – June 2010:	Inaugural Chair, Biomedical Engineering Department
Aug. 2007 – July 2009:	Vice Provost for Strategic Initiatives
Aug. 2006 – July 2007:	Director of UB2020 Integrated Nanostructured Systems Initiative
Aug. 2002 – present:	Director, Institute for Lasers, Photonics and Biophotonics
Sept. 1999 – present:	Co-Director, Electronics Packaging Laboratory (EPL)
Sept. 2001 – Aug. 2008:	Director, National Science Foundation Integrative Graduate Education and Research Traineeship in “Biophotonics: Materials and Applications”
Dec. 1999 – Aug. 2002:	Deputy Director, Institute for Lasers, Photonics and Biophotonics University at Buffalo Research Center / Institute Membership
Aug. 2004 – present:	Member, Center for Unified Biometrics and Sensors (CUBS)
Dec. 1999 – present:	Member, Institute for Lasers, Photonics and Biophotonics
Sept. 1999 – present:	Member, Electronics Packaging Laboratory

c. Publications

1. Y. Huang, B. Qu, A. Jain, A. T. Kuhls-Gilcrist, A. H. Titus, A. N. Cartwright, D. B. Bednarek, S. Rudin, "Design, Characterization, and Modeling for a Modular High-Resolution Solid-State X-Ray Image Intensifier (SSXII)," *IEEE Transactions on Nuclear Science*, **60**, 20-29 (2013).
2. W. J. Kim, S. J. Kim, A. N. Cartwright, and P. N. Prasad, "Photopatternable transparent conducting oxide nanoparticles for transparent electrodes," *Nanotechnology*, **24**, 6, 065302 (2013).
3. X. Liu, X. L. Wang, B. Zhou, W. C. Law, A. N. Cartwright, and M. T. Swihart, "Size-Controlled Synthesis of Cu_{2-x}E (E = S, Se) Nanocrystals with Strong Tunable Near-Infrared Localized Surface Plasmon Resonance and High Conductivity in Thin Films," *Advanced Functional Materials*, **23**, 1256-1264 (2013).
4. V. Lee, R.V. Dennis, C. Jaye, X. Wang, D.A. Fischer, A.N. Cartwright, S. Banerjee, "In situ near-edge x-ray absorption fine structure spectroscopy investigation of the thermal defunctionalization of grapheme oxide," *Journal of Vacuum Science and Technology B*, **30** (6), 061206 (2012).
5. L. Schweidenback, T. Ali, A.H. Russ, J.R. Murphy, A.N. Cartwright, A. Petrou, C.H. Li, M.K. Yakes, G. Kioseoglou, B.T. Jonker, A. Govorov, "Optical Aharonov-Bohm oscillations in InGaAs quantum wells," *Physical Review B*, **85** (24), 245310 (2012).
6. M. C. Cheung, K. Y. Yung, H. Xu, N. D. Kraut, K. Liu, V. P. Chodavarapu, A. N. Cartwright and F. V. Bright, "Porous Nanostructured Encapsulation and Immobilization Materials for Optical Biosensors," *IEEE Journal of Selected Topics in Quantum Electronics* **18** (3), 1147-1159 (2012).
7. K. Liu, H. Xu, H. Hu, Q. Gan and A. N. Cartwright, "One-Step Fabrication of Graded Rainbow-Colored Holographic Photopolymer Reflection Gratings," *Advanced Materials* **24** (12), 1604-1609 (2012).
8. S. S. Nagesh, A. Panse, A. Jain, P. Sharma, C. Ionita, A. Titus, A. Cartwright, D. Bednarek and S. Rudin, "Real-Time Adaptive Correction for Varying Source-To-Image-Distance (SID) for a Novel Region of Interest (ROI) Fluoroscopy Dose Reduction Technique Involving Spatially Different Temporal Filtering," *Medical Physics* **39** (6), 3608-3609 (2012).
9. S. S. Nagesh, P. Sharma, V. Singh, A. Jain, C. Ionita, A. Titus, A. Cartwright, D. Bednarek and S. Rudin, "Phantom Studies of a Newly Developed Solid State X-Ray Image Intensifier (SSXII) for X-Ray Image Guided Neurovascular Interventions," *Medical Physics* **39** (6), 3894-3895 (2012).
10. L. Schweidenback, T. Ali, A. H. Russ, J. R. Murphy, A. N. Cartwright, A. Petrou, C. H. Li, M. K. Yakes, G. Kioseoglou, B. T. Jonker and A. Govorov, "Optical Aharonov-Bohm oscillations in InGaAs quantum wells," *Physical Review B* **85** (24) (2012).

d. Synergistic Activities

- Actively participating in UB outreach to high needs Buffalo Public Schools (lectures, demonstrations and field trips) and as co-PI on NSF Math Science Partnership with the Buffalo Public Schools

- Conference organizer for SPIE BIOS.
- Led the Development of Photonics Educational Tools
(<http://www.ee.buffalo.edu/faculty/cartwright/photonics>)
- Acts as Associate Editor, *Journal of Nanophotonics*

e. Collaborators and Other Affiliations

Collaborators and Co-Editors

W.A. Anderson, C.J. Basaran, F.V. Bright, J.A. Gardella, Jr., V. Govadinaraju, W. Hicks, H. Luo, B.D. McCombe, V. Mitin, A. Petrou, P.N. Prasad, S. Rudin, M.T. Swihart, E. Takeuchi, A.H. Titus, C.R. Wie (UB); T.J. Bunning (AFRL, WPAFB); V. Chodavarapu (McGill U); T.J. Dishongh (Intel); W.A. Doolittle (GaTech); J. Flynn (ATMI Corp.); M. Furis (UVT); J.D. Phillips (Univ. Michigan); W. Schaff (Cornell Univ.); E.F. Schubert (RPI); F. Shahedipour-Sandvik (Univ. at Albany)

Graduate Advisor and Postdoctoral Sponsor

A.L. Smirl (University of Iowa)

Thesis Advisor and Postgraduate-Scholar Sponsor

Previous PhD – Ke Liu (Litepoint, a Teradyne Company), Huina Xu (Unknown), Bin Qu (Animage LLC); DongHo Lee (Samsung Electronics); Maurice Cheung (Post-Doc, McGill Univ.); Fei Chen (Lexmark, NC); Vamsy Chodavarapu (Professor, McGill University, Montreal, Canada); Madalina Furis (Professor, University of Vermont, VT); Vincent Hsiao (Professor, National Chi Nan University, Taiwan); Daniel Kaputa (Lockheed Martin, NY); Sung Jin Kim (Professor, University of Miami); Heng Liu (KLA-Tencor, CA); Zhou Lu (Panasonic, MA); Paul Sweeney (Unknown); Ying Zhao (Analog Devices)

Previous Post-Doc – Sung Jin Kim (Professor, University of Miami); Fei Chen (Lexmark); Maurice Cheung (McGill Univ.); Hans Andreas Nickel

Current PhD: Xi Wang, Bin Zhou, Joseph Murphy, Tania Moein, Tianmu Zhang, Dingxin Ji (UB)

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LORRIE A. CLEMO, Ph.D

Lorrie Clemo serves as Provost and Vice President for Academic Affairs at the State University of New York at Oswego. She oversees all the instructional and academic programs of the college, including the College of Liberal Arts and Sciences, School of Business, School of Education, School of Communications, Media and the Arts, facilities such as Penfield Library, and administrative offices such as the Registrar's Office and Office of Institutional Research and Assessment.

Previously Clemo served as Chief of Staff and Deputy to the President where she directed the Office of the President and coordinated the four divisional units of the College. Other responsibilities include establishing institutional priorities, advising the president on strategic communications and institutional advancement activities, designing and monitoring the implementation of special projects, and analyzing public policy and legislative issues. She provided substantive and analytic information to the President and served as the President's representative on college and community initiatives.

In 2007-2008 Clemo served as an American Council on Education (ACE) Fellow at the University of Rochester where her focus was on strategic planning, leadership development, creating institutional distinctiveness, growth dynamics between undergraduate and graduate enrollment, and faculty diversity.

Previously Clemo served as Assistant to the President for Special Projects and Campus Communication. Clemo received her Ph.D. from the State University of New York at Binghamton. She is a tenured member of the Political Science Department where she also served as Director of the Public Administration and Public Policy Program. She has a record of scholarship that includes more than 40 paper presentations and publications. Nationally, Clemo has served as President of the NCAA Faculty Athletics Representatives Association.

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DANIEL J. DECKER, Ph.D

Professor and Director, Human Dimensions Research Unit (HDRU)
 Department of Natural Resources
 122B Fernow Hall
 Cornell University
 Ithaca, NY 14853
 607.255.5444
DJD6@cornell.edu

EDUCATION:

1986	Ph.D.	Cornell University
1976	M.Sc.	Cornell University
1974	B.Sc.	Cornell University

ACADEMIC RANKS (year achieved):

Professor:	1998
Affiliate Faculty, Colorado State University:	1993
Associate Professor:	1991
Assistant Professor:	1988
Senior Extension Associate:	1986
Research Associate:	1979

PRIMARY DEPARTMENTAL PROGRAM AREA/ AREA OF EXPERTISE:

Resource Policy and Management/Human Dimensions of Wildlife Management

PROFESSIONAL EXPERIENCE:

2009-present	Director, Human Dimensions Research Unit (HDRU), Department of Natural Resources (DNR)
2005-2009	Director, CALS Office of Land Grant Affairs; Sr. Advisor to CALS Dean
1993-present	Affiliate Faculty, Colorado State University
1982-2008	Co-leader, HDRU, DNR
2001-2005	Director, Cornell University Agricultural Experiment Station (CUAES); Associate Dean, CALS
1996-2001	Assoc. Director, Office for Research, CALS; Assoc. Director, CUAES
1993-1996	Department Chair, DNR
1992-1993	Assoc. Director, Office for Research, CALS; Assoc. Director, CUAES
1991-1992	Visiting Faculty, Colorado State University
1988-1991	Department Extension Leader, DNR
1986-1988	Program Develop. & Evaluation Specialist, Cornell Cooperative Extension
1982-1986	Research Associate, and Wildlife Extension Specialist, DNR
1979-1982	Research Associate, DNR

HONORS, RECOGNITIONS AND AWARDS (examples):

- Daniel J. Decker Undergraduate Land Grant Internship (recognition) (2009-2010)
- SUNY Chancellor's Award for Excellence in Faculty Service (2005)
- Member, CALS Alumni Assoc. Liberty Hyde Bailey Leadership Society (2004)
- Jack H. Berryman Institute for Wildlife Damage Management Award (1996)
- Distinguished Research and Extension Award, Gamma Sigma Delta (1994)

- Daniel L. Leedy Urban Wildlife Conservation Award, Nat'l Urban Wildlife Inst. (1993)
- Outstanding Wildlife Professional, NY Chapter-TWS (for HDRU group) (1992)
- John Pearce Memorial Award, NE Section-The Wildlife Society (1992)
- Wildlife Publication Award of The Wildlife Society (article) (1992)
- Young Alumni Achievement Award, CALS Alumni Association (1988)

PROFESSIONAL SOCIETIES 2008

- Wildlife Disease Association (2006-present)
- Society for Conservation Biology (2004-present)
- The George Wright Society (2003-present)
- Association of Natural Resource Extension Professionals (2002-present)
- International Assoc. for Society & Natural Resources (charter member [2002-present])
- The Wildlife Society (member 1976-present).

COMMITTEE ASSIGNMENTS 2008 (examples)

- Great Lakes Fisheries Commission Board of Technical Experts, Core Group (2009 – Present)
- Great Lakes/Northern Forest Cooperative Ecosystems Study Unit, Cornell University Technical Representative (2008 – Present)
- NY Cooperative Fish & Wildlife Research Unit Coordinating Cmte.
- Cornell Biological Field Station Advisory Cmte.
- NYS Fish and Wildlife Management Board, Faculty Advisor

PROFESSIONAL OVERVIEW AND OBJECTIVES

Develop a vision of “next-generation wildlife management.” A key feature of this pursuit is the articulation of a model of wildlife management that integrates human and biological dimensions in wildlife management and policy making, and presents a generalizable theory regarding how human attitudinal and behavioral considerations can be addressed effectively in these endeavors. This necessitates the study of problems and potentials for integration of human dimensions into wildlife management, and involves evolution of the philosophy of wildlife management within the wildlife management profession, as well as the development of stakeholder and community capacity-building processes to achieve effective community-based management. This will be accomplished through research to design new processes and approaches, pilot efforts in cooperation with state and federal wildlife agencies willing to apply new approaches for decision-making, and evaluation of such efforts for their improvement.

EXTENSION/OUTREACH RESPONSIBILITIES (SUMMARY) 2008

Translating research findings for natural resource professionals via publications, presentations, and workshops. Advisement to facilitate incorporating research insights into policy making and program planning, implementation, and evaluation. Primary beneficiaries are wildlife professionals in state and federal agencies (e.g., NYS Dept. of Environmental Conservation, Florida Fish and Wildlife Conservation Commission, and natural resource managers in the National Park Service). Develop improved approaches for (a) integrating human dimensions insight (theory and empirical data) into wildlife management and (b) citizen input and involvement in wildlife management.

HELENE R. DILLARD, Ph.D.

Professor of Plant Pathology
 New York State Agricultural Experiment Station
 Geneva, New York
 Phone: 315-787-2469
 E-MAIL: hrd1@cornell.edu

EDUCATION

<u>Year</u>	<u>Degree</u>	<u>Institution</u>
1984	Ph.D. (Plant Pathology)	University of California, Davis
1979	M.S. (Soil Science)	University of California, Davis
1977	B.S. (Biology of Natural Resources)	University of California, Berkeley

CURRENT RESPONSIBILITIES

Research (20%):	Professor - Fungal pathogens of vegetable crops
Administration (80%):	Associate Dean – College of Agriculture and Life Sciences
	Associate Dean – College of Human Ecology
	Director – Cornell Cooperative Extension

PROFESSIONAL OVERVIEW

Major projects have included studies on the epidemiology and management of anthracnose diseases with emphasis on *Colletotrichum lindemuthianum* on beans and *Colletotrichum coccodes* on tomatoes; biology and management of *Sclerotinia sclerotiorum* on beans and cabbage with an emphasis on cultural practice management and biological control; biological control of *Botrytis cinerea* on greenhouse tomatoes; epidemiology and sustainable management of Alternaria leaf spot on crucifers caused by *Alternaria brassicicola*; quantitative epidemiology and management of rust caused by *Puccinia sorghi* on sweet corn; epidemiology of aphid-transmitted viruses in snap beans; and epidemiology of Stewart's bacterial wilt of corn caused by *Erwinia stewartii*. Project foci for 2013 are on sustainable management of *Sclerotinia sclerotiorum* and *Botrytis cinerea* on snap beans and development of a risk management decision tool, biology and control of *Phytophthora capsici* on snap and lima beans, and epidemiology and control of Alternaria leaf spot on crucifer crops.

PROFESSIONAL EXPERIENCE

Faculty Fellow:	Atkinson Center for a Sustainable Future, Cornell University, 2012-present
International Professor:	College of Agriculture & Life Sciences, Cornell University, 2010-present
Associate Dean:	CALS and Human Ecology, Cornell University, Ithaca, 2002-present
Director:	Cornell Cooperative Extension, Cornell University, Ithaca, 2002-present
Associate Director:	Cornell Cooperative Extension, Cornell University, Ithaca, 2001-2002
Chair:	Department of Plant Pathology, Cornell University, New York State Agricultural Experiment Station, Geneva, 1997-2001
Professor:	Department of Plant Pathology, Cornell University, New York State Agricultural Experiment Station, Geneva, 1998-present
Associate Professor:	Department of Plant Pathology, Cornell University, New York State Agricultural Experiment Station, Geneva, 1990-1997
Assistant Professor:	Department of Plant Pathology, Cornell University, New York State Agricultural Experiment Station, Geneva, 1984-1990

HONORS AND AWARDS

2013	New York Farmers Medal
2006	Elected APS Fellow, The American Phytopathological Society
1999	Recognition of Outstanding Service as Senior Councilor-at-Large, The American Phytopathological Society
1997	Next Age Leadership Recognition Award, National Extension Leadership Development Class V
1992	Excellence in Extension Award, The American Phytopathological Society
1991	Special citation for Extension Faculty, New York State Association of County Agricultural Agents

PROFESSIONAL SERVICE

2010	Panelist, USDA/NIFACAP Competitive Grants Program, Oomycetes Pathosystems
2010	Plant Pathology Department Review, University of Kentucky
2009	University of California ANR Cooperative Extension System Review, UCD
2008	Panelist, USDA/NRI Competitive Grants Program, Plant Biosecurity
2007	Effective Interactions in Organizations (Cornell University EIO)
2005	Plant Pathology Department Review, North Carolina State University
2004	NYSAES/CALS Leadership Development Program
2004	Panel Reviewer: USDA/NRI Competitive Grants Program, Plant Biosecurity
2003-2004	Panel Director: USDA/ARS/OSQR
1996-1999	Councilor at Large, The American Phytopathological Society
1988-1991	Editor, Vegetable Section, Fungicide and Nematicide Tests

PUBLICATIONS—RESEARCH AND EXTENSION (Selected)

McGrath, M.T., Strauss, J., and Dillard, H. R. 2011. First report of *Phytophthora* blight caused by *Phytophthora capsici* on snap bean in New York. *Plant Disease* 95: 1028.

Roper, M., Seminara, A., Cobb A., Dillard, H.R., and Pringle, A. 2010. Dispersal of fungal spores on a cooperatively generated wind. *Proceedings of the National Academy of Sciences (USA)* : <http://www.pnas.org/content/early/2010/09/23/1003577107>

Camp, A.R., Milgroom, M.G., Meitz, J.C., McLeod, A., Fry, W.E., McGrath, M.T., Dillard, H.R., and Smart, C.D. 2010. Population structure and resistance to mefenoxam of *Phytophthora capsici* in New York. *Plant Disease* 94: 1461- 1468.

Shah, D.A. and Dillard, H.R. 2010. Managing foliar diseases of processing sweet corn in New York with strobilurin fungicides. *Plant Disease* 94: 213-220.

Nault, B. A., Shah, D. A., Straight, K. E., Bachmann, A. C., Sackett, W. M., Dillard, H. R., Fleischer, S. J., and Gildow, F. E. 2009. Modeling temporal trends in aphid vector dispersal and Cucumber Mosaic Virus epidemics in snap bean. *Environ. Entomol.* 38(5):1347-1359.

Strauss, J. and Dillard, H. R. 2009. First Report of *Sclerotinia sclerotiorum* on *Hibiscus trionum* in New York. *Plant Disease* 93:673.

Dillard, H. R., and Cobb, A. C. 2008. *Alternaria alternata* and *Plectosporium tabacinum* on snap beans: pathogenicity, cultivar reaction, and fungicide efficacy. *Plant Health Progress* doi:10.1094/PHP-2008-1212-01-RS.

Camp, A. R., Dillard, H. R., and Smart, C. D. 2008. Efficacy of *Muscodora albus* for the control of *Phytophthora* blight of sweet pepper and butternut squash. *Plant Disease* 92:1488-1492.

Shah, D.A., and Dillard, H. R. 2006. Yield loss in sweet corn caused by *Puccinia sorghi*: a meta-analysis. *Plant Disease* 90:1413-1418.

Shah, D.A., Dillard, H. R., Mazumdar-Leighton, S., Gonsalves, D., and Nault, B.A. 2006. Incidence, spatial patterns, and associations among viruses in snap bean and alfalfa in New York. *Plant Disease* 90:203-210.

Shah, D.A., Dillard, H.R., and Nault, B.A. 2005. Sampling plans for the incidence of aphid-transmitted viruses in snap bean. *Phytopathology* 95: 1405-1411.

FRANCIS JOSEPH DISALVO JR., Ph.D

Department of Chemistry
Cornell University
Ithaca, NY 14853

Tel. (607) 255-7238
FAX (607) 255-4137
email: fjd3@cornell.edu

WEB: <http://www.chem.cornell.edu/faculty/index.asp?fac=25>

Education: BS, Physics, 1966, MIT
PhD, Applied Physics, 1971 Stanford University

Professional Experience:

2007 -	Director, Cornell Center for a Sustainable Future
2004 -	Co-Director, Center for Future Energy Systems, NY CAT
2003-2009	Co-Director, Cornell Fuel Cell Institute
2000-2005	Director, Cornell Center for Materials Research
1996 -	John A. Newman Professor of Physical Science
1986-1996	Professor of Chemistry, Cornell University
1983-1986	Head, Solid State and Physics of Materials Research Dept., AT&T Bell Labs, Murray Hill, NJ
1981-1983	Head, Solid State Chemistry Research Dept., AT&T Bell Labs
1978-1981	Research Head, Chemical Physics Research Dept., AT&T Bell Labs
1971-1978	Member of Technical Staff, AT&T Bell Labs

Areas of Primary Scientific Interest:

Intermetallic Compounds; Fuel Cells; Electrocatalysts and Catalyst Supports; Nitride Compounds; Thermoelectric Materials; Electrical and Magnetic Properties; High Energy Density Battery Materials

Organizations and Honors:

Member of the National Academy of Sciences
Fellow of the American Association for the Advancement of Science
Fellow of the American Academy of Arts and Sciences
Fellow of the American Physical Society and Materials Research Society
APS International Prize for New Materials, 1991
Member of the American Chemical Society
NSF Traineeship, 1966-1970

Recent Professional Activities:

Basic Energy Science Advisory Committee (BESAC) at DOE, 2005 –
Council on Materials Sciences, DOE, 1999-2004
Solid State Sciences Committee, NRC, 2000-2004
NRC Panel on Assessment and Outlook of the NSF MRSEC Program, 2005
NRC Committee on Midsized Facilities, 2002-2004
Board of Trustees of the Gordon Research Conference, (1994-1999), Chairman of the Board, 1997
Numerous Professional and Government Agency Committees

Publications and Patents: 480+ papers published in collaboration with many talented colleagues and 12 patents/pending

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MICHAEL P. HOFFMANN, Ph.D.

Director and Associate Dean
Cornell University Agric. Experiment Station
College of Agriculture and Life Sciences
241 Roberts Hall

Professor
Department of Entomology
190 Insectary Building

Cornell University
Ithaca, New York 14853
t. (607) 255-2552 f. (607) 255-9499
Email: mph3@cornell.edu

Education

Ph.D. (1990) University of California, Davis, Entomology

M.S. (1978) University of Arizona, Entomology

B. S. (1975) University of Wisconsin at Green Bay, Ecosystems Analysis

Professional Experience

Director, Cornell University Agricultural Experiment Station and Associate Dean,
College of Agriculture and Life Sciences, 2005-

Associate Director, Cornell Cooperative Extension, 2003-2005

Director, New York State Integrated Pest Management Program, 1999-2005

Professor, Dept. of Entomology, Cornell University, July 2003-present

Associate Professor, Dept. of Entomology, Cornell University, July 1996-present

Assistant Professor, Dept. of Entomology, Cornell University, July 1990-July 1996

Staff Research Associate IV, Dept. of Entomology, Univ. of California, Davis, 1982-90

Staff Research Associate II, Dept. of Entomology, Univ. of Calif., Riverside, 1978-81

Current Administrative Responsibilities

Associate Dean and Director of the Cornell University Agricultural Experiment Station (80%): As Director, oversee the allocation of Federal Formula Fund research funding, respond to the needs of applied research and extension, and act as liaison to several state committees, programs, and agencies relevant to the mission of CALS, and the colleges of Human Ecology and Veterinary Medicine. As Associate Dean, serve as a member of the leadership team of the College of Agriculture and Life Sciences, contribute to strategic planning; help to determine the allocation of resources for college programs; provide advice on diverse college initiatives including invasive species, renewable energy, climate change; facilitate leadership development, and oversee coordination of farm and greenhouse/growth chamber facilities and personnel.

Department Affiliation

Professor of Entomology (20%): Responsible for the development and implementation of IPM strategies for vegetable crops. Program emphasis is on insect population dynamics, biological control, development and application of insect behavior modifying chemicals, and alternative pest management tactics.

Awards/Recognition

Entomological Foundation Professional Award for *Excellence in Integrated Pest Management*, 2006. Entomological Society of America, Eastern Branch.
 College of Agriculture and Life Sciences Faculty Leadership Development Program – 2006.
 Outstanding Extension Publication Award. Outstanding Book Award for 2003. The American Society for Horticultural Science,
 Environmental Quality Award 2002, US EPA, presented to NYS IPM Program

Professional Societies

Entomological Society of America
 International Organization of Biological Control
 New York Agricultural Society
 Sigma Xi

Significant Committees/Leadership Roles

Chair– Experiment Station Committee on Organization and Policy
 NE Region Integrated Pest Management Center Steering & Advisory Committee
 NY Farm Viability Institute, CALS Advisor
 NY Farm Viability Institute, Chair of the bioenergy producer review committee
 President’s Sustainable Campus Committee, Executive Committee
 Chair, President’s Sustainable Campus Committee Advisory Committee
 Council of Environmental Deans and Directors (NCSE)
 Atkinson Center for a Sustainable Future, Faculty Advisory Committee
 New York Sea Grant Board of Governors
 NYSAES Advisory Council
 Long Island Horticultural Research and Extension Center Management Committee
 NYS IPM Operating Committee

Competitive grants received

Over \$14 million awarded (PI and co-PI) in competitive grants in past 10 years.

Refereed publications (past 3 years)

Dixon, G., M. Deline, K. McComas, L. Chambliss & M. P. Hoffmann. Using comparative feedback to influence workplace energy conservation: A summative evaluation of the CALS Green energy conservation and sustainability initiative. *Environment and Behavior*. In review.

Gardner, J., T.-H. Yong, S. A. Pitcher, and M. P. Hoffmann. 2013. Overwintering of *Trichogramma ostrinae* (Hymenoptera: Trichogrammatidae) within target and non-target hosts. *Biocontrol Science and Technology*. DOI:10.1080/09583157.2012.761175

Gardner, J., M. G. Wright, T. P. Kuhar, S. A. Pitcher and M. P. Hoffmann. 2012. Dispersal of *Trichogramma ostrinae* in Field Corn. *Biocontrol Science and Technology* 22: 1221-1233.

Gardner, J., M. P. Hoffmann, S. A. Pitcher and J. P. Nyrop. 2012. Recurrent warming to improve cold storage of Trichogrammatids. *Biocontrol Science and Technology* 22: 261-270.

Gardner, J., M. P. Hoffmann, S. A. Pitcher and J. K. Harper. 2011. Integrating insecticides and *Trichogramma ostrinae* to control European corn borer in sweet corn: Economic analysis. *Biological Control* 56: 9–16

Kain, D. P., M. P. Hoffmann, J. Gardner, and A. Agnello. 2010. Physical barriers to prevent dogwood borer (Lepidoptera: Sesiidae) infestation of apple burrknots. *J. Entomol. Sci.* 45: 35-43

Crampton, L. A. G. M. Loeb, K. A. Hoelmer, and M. P. Hoffmann. 2010. Effect of insecticide regimens on biological control of tarnished plant bug, *Lygus lineolaris*, by *Peristenus* spp., in New York State apple orchards. *J. Insect Science* 10:36

Smyth, R. R., and M. P. Hoffmann. 2010. Seasonal incidence of two co-occurring adult parasitoids of *Acalymma vittatum* in New York State: *Centistes* (*Syrrhizus*) *diabroticae* and *Celatoria setosa*. *BioControl*. 55: 219-228. DOI 10.1007/s10526-009-9232-y

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ROBERT A. KRAUSHAAR, Ph.D

Associate Provost

Associate Vice Chancellor for Faculty & Professional Development

Dr. Kraushaar is the campus liaison for the eight colleges and institutes of technology, specialized colleges that have engineering and technical academic programs. In this capacity, he works with the campuses on such issues as enrollment and academic planning, articulation and transfer, student success, program assessment and selectivity, intercampus cooperation and articulation, and faculty development and scholarship. He also functions as the System liaison for the Technology Sector colleges to the Middle States Commission on Higher Education.

At a broader level, System-wide initiatives he is currently involved with include the development and supervision of a leadership institute, the Board of Trustee's initiative on student mobility, Board-appointed Distinguished Professorships and Chancellor's Awards, and the development of Professional Science Masters programs at sixteen comprehensive colleges and university centers. He is responsible for Project Win-Win and Access to Success, two nation-wide initiatives coordinated by the National Education Trust to improve access, retention and graduation rates among mainly minority and underrepresented students.

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WILLIAM P. TULLY, Ph.D., P.E.

Vice President of Academic Affairs and Provost
 State University of New York
 College of Environmental Science and Forestry
 Syracuse, New York

EDUCATION

Syracuse University: Ph.D. Civil Engineering, Applied Systems Analysis, Water Resources, 1978
 Northeastern University: M.S. Civil Engineering, Structures, 1966
 Northeastern University: B.S. Civil Engineering, 1964

PROFESSIONAL EXPERIENCE – ACADEMIC AND ADMINISTRATIVE

1985 – Present	Vice President of Academic Affairs and Provost, SUNY College of Environmental Science and Forestry
2000	Added appointment as Director of Joachim Center for Industry, Economy and Environment
1980	Dean and Professor of School of Environmental and Resource Engineering
1978	Added Appointment as Professor, Graduate Program in Environmental Science and Engineering Coordinator of Interdisciplinary Water Resources Graduate Program
1976	Professor
1971	Chairman of Forest Engineering Department (Reappointed in 1973, 1976 and 1978)
1968	Associate Professor
1966	Assistant Professor

PROFESSIONAL SERVICE ACTIVITIES (Selected)

- Engineers Forum on Sustainable Development
- Great Lakes Research Consortium, Board of Governors Member and Past Chair
- New York Sea Grant Institute, Board of Governors Member and Past Chair
- Syracuse Pulp and Paper Foundation, Board of Directors Member
- Universities Council on Water Resources, Institutional Member

PROFESSIONAL SOCIETIES (Selected)

- American Society for Engineering Education
- American Society of Biological and Agricultural Engineers
- American Society of Civil Engineers

RESEARCH AND SCHOLARLY INTERESTS

- Sustainable Systems
 - Renewable Materials, Energy and Water
 - Risk at the Interface of Policy and Science
 - Large Scale Water Resource Systems
- Engineering Hydrology

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MICHAEL E. WHITE, ESQ.

Michael E. White is Of Counsel to the firm Anthony E. Core, P.C., serving in the office of General Counsel for a number of related solid waste management companies and concentrates his law practice in areas of environmental law, municipal law, land use, litigation and natural resources law.

Michael E. White was the Executive Director of the Long Island Regional Planning Council. Prior to that appointment he was a partner in the firm of Jaspan Schlesinger Hoffman LLP in Garden City, New York where he headed the Environmental Law Practice Group and was part of the Municipal Law Practice Group.

Michael was the Long Island Chapter Chair of the New York League of Conservation Voters and remains a member of its statewide Education Fund .He is on the Board of Governors of the New York State Sea Grant Program, and served a term as its Chair. He is also the Chair of the School of Marine and Atmospheric Sciences Dean's Council and Adjunct Faculty of Environmental Law and Policy at Stony Brook University. Michael was a Commissioner on the Blue Ribbon Commission on Sustainability and the MTA, on the Suffolk County Wastewater Treatment Task Force and its Carbon Cap Commission, and is a member the Long Island Center for Healthcare Policy Studies, LI Carbon Footprint Steering Committee and L I Index Advisory Committee. Michael is the recipient of the Touro College Law Center Pro Bono Attorney of the year in 2004, the Old Westbury College Foundation Theodore Roosevelt Preservation Award in 2005 and a co- honoree with his wife Judy of the Cornell Cooperative Extension in 2008.

Prior to joining Jaspan Schlesinger Hoffman LLP, Michael was the managing partner of White & Kretzing P.C., which merged with JSH in 2002. He is admitted to practice in the Courts of New York, the Eastern and Southern District Federal Courts of New York, the U.S. Supreme Court, the U.S. Court of Appeals for the Federal Circuit, the Court of Federal Claims and the U.S. Court of Appeals for the Armed Forces. He received his Juris Doctor, from Touro College Law Center and has degrees in Environmental Studies and Earth and Space Science from Stony Brook University. Prior to his legal career, Michael served as an environmental planner in the Department of Environmental Control of the Town of Huntington, and then Director of that Department, was an environmental consultant in the private sector, worked in the Environmental Monitoring Division of the Suffolk County Department of Environmental Control and then with the Suffolk County Department of Health Services Water Quality and Drinking Water Supply Bureau and was a research scientist at the Marine Sciences Research Center of Stony Brook University. He is a former Chair of the Environmental Law Committee of the Suffolk County Bar Association as well as a former member of the Board of the Suffolk County Water Authority, the Long Island Regional Planning Board 208 Technical Advisory Committee and the Long Island Regional Ashfill Board.

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Minghua Zhang

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Employment:

2011-present	Professor and Dean School of Marine and Atmospheric Sciences Stony Brook University, State University of New York
2010-2011	Professor and Interim Dean School of Marine and Atmospheric Sciences Stony Brook University, State University of New York
2003-2010	Professor and Associate Dean School of Marine and Atmospheric Sciences Stony Brook University, State University of New York
2001-2010	Professor and Director Institute for Terrestrial and Planetary Atmospheres Stony Brook University, State University of New York
1997-2001	Associate Professor Institute for Terrestrial and Planetary Atmospheres Stony Brook University, State University of New York
1998-1999	Visiting Fellow Laboratory for Atmospheres NASA Goddard Space Flight Center
1990-1997	Assistant Professor Institute for Terrestrial and Planetary Atmospheres Stony Brook University, State University of New York
1988-1990	Post-doc Visiting Scholar Institute for Terrestrial and Planetary Atmospheres Stony Brook University, State University of New York
1984-1988	Research Assistant Institute of Atmospheric Physics Chinese Academy of Sciences

Education:

Ph.D., 1987	Institute of Atmospheric Physics Chinese Academy of Sciences
M.S., 1984	Nanjing Institute of Meteorology
B. S., 1982	Nanjing Institute of Meteorology

Research Interests:

- Climate modeling and climate feedback processes
- Development of physical parameterizations of clouds and convection in General Circulation Models
- Variational integration and synthesis of field experimental data
- Wave dynamics coupled with diabatic physical processes

Selected Research Highlights

1. Cloud and climate feedback processes

Published the first paper to reveal the cancellation of climate feedbacks from water vapor and temperature lapse rate (Zhang et al. 1994); Co-led the late stage of the FANGIO project with Bob Cess to evaluate feedback and forcing in climate models (Cess et al. 1991; Cess et al. 1993; Cess et al. 1996; Cess et al. 1997); Organized the first multi-model assessment of simulated clouds by using an ISCCP simulator (Zhang et al. 2005); Developed a framework to understand mechanisms of cloud feedbacks (Zhang and Bretherton 2008).

2. Synthesis of atmospheric field experimental data

Published the first paper to develop atmospheric objective analysis from field programs with multiple physical constraints (Zhang and Lin 1997; Zhang et al. 2001) to interface with numerical models; Developed integrated analyses for field experiments that have been widely used in the cloud-resolving modeling and GCM parameterization community (<http://atmgcm.msfc.sunysb.edu/iops.html>): TOGA-COARE, KWAJEX, ARM SGP, ARM NSA, ATM TWP-ICE, LBA, SCSMEX).

3. GCM physical parameterizations

Developed the cloud macrophysical parameterization scheme for the NCAR CAM (Zhang et al. 2003); Developed a convection triggering parameterization (Xie and Zhang 2000); Co-led the cloud-resolving model and single-column model study of the DOE ARM 2006 cloud intensive period (Xu et al. 2005; Xie et al. 2005); Participated in and contributed to the development of the Community Atmospheric Model (Collins et al. 2006; Gent et al. 2010).

4. Diagnostic study of climate change

Published one of the first two papers, independent to Vecchi et al. (2006), to reveal and explain the weakening of Walker circulation in the last fifty years and in a warmer climate (Zhang and Song 2006).

Honors

- 2010 Honorary Professor, Tsinghua University
- 2010 Honorary Professor, Institute of Atmospheric Physics, Chinese Academy of Science
- 2007 Nobel Peace Prize, shared with the Intergovernmental Panel on Climate Change (IPCC) and Al Gore.
- 2003 Elected Member, International Eurasian Academy of Sciences China Center
- 2001 Oversea Expert Assessor appointed by the President of the Chinese Academy of Sciences
- 1996 Young Faculty Career Award, National Science Foundation
- 1988: Young Scientist Achievement Award of the Year, Beijing Association of Science and Technology
- 1988 Outstanding Ph.D Award, Chinese Ministry of Education

Professional Activities

- Steering Committee Member, International Global Water and Energy Experiment (GEWEX) (2011-present)
- Co-Chairman, Atmospheric Model Working Group (AMWG) of the NCAR Community Climate System Model (CCSM) (2006-present)
- Chairman, DOE ACRF Review Committee (2011)
- Member, DOE Biological and Environmental Research Advisory Committee (BERAC) (2010-present)
- Leader, Joint project of CFMIP-GCSS study on cloud feedbacks (2009-present)
- Associate Editor, *Journal of Advances in Modeling Earth Systems (JAMES)* (2008-present)
- Associate Editor, *Journal of Climate* (2008-present)
- Member, NSF Climate Simulation Laboratory (CSL) Advisory Committee (2007-present)
- Member, DOE OBER Roadmap Writing Team (2010)
- Co-Chairman, Atmospheric Radiation Measurement (ARM) Working Group on Cloud Modeling and Parameterization (CPM), U. S. Department of Energy (1999-2005)
- Lead Author, US Climate Change Science Program (CCSP) Assessment and Synthesis Product (SAP3.1) (2006-2008)
- Member, Search Committee of JGR-Atmosphere Editors (2005-2007)
- Member, DOE ARM Climate Facility Board (2004-2007)
- Member, DOE ARM Science Team Executive Committee (2002-2004)
- Coordinator, Special Issue of *Journal of Geophysical Research* on “Toward Reducing Cloud-Climate Feedback Uncertainties in Atmospheric General Circulation Models” (2004-2005)
- Member, NASA Global Precipitation Mission (GPM) Science Team (2003-2008); NSF Climate Process Team (2003-2007); NASA Modeling and Analysis Science Team (2004-present); DOE ARM Science Team (2000-present)
- Member, Steering Committee of the DOE ARM CPM Working Group (1999-2009)

Member, American Geophysical Union, since 1991

Member, American Meteorological Society, since 1990

Other Professional Services

Reviewer for the Journal of Climate (over 50 times); Journal of Atmospheric Sciences; Monthly Weather Review, Journal of Geophysical Research-Atmospheres; Geophysical Research Letter; Quarterly Journal of the Royal Meteorology Society; Tellus; Advances in Atmospheric Sciences; Environmental Research Letters; Atmospheric Chemistry and Physics; Climate Dynamics; Science; Nature.

Reviewer for funding agencies of the National Science Foundation, National Administration for Space and Aeronautics; National Ocean and Atmosphere Administrations; Department of Energy; The European Union; the Chinese National Science Foundation

Initiated and led the application of the Stony Brook University to join UCAR

Reviewer, Tenure and Promotions for several universities

Funded Projects:

Current in 2011-2012

PI, DOE: "Continuous evaluation of fast Processes in climate models using ARM measurements", 7/1/2009-6/30/2014, \$903,200.

PI, NSF: Developing integrated data products to interface major field experiments with general circulation models. 10/01/08-09/30/12, \$498,578.

PI, NASA: Using satellite measurements to improve modeling of low clouds and their climate feedbacks. 12/15/08-12/14/12, \$862,030.

Co-PI: DOE, Nesting WRF within CCSM for regional climate modeling, 8/15/2009 -12/30/2012, \$479,000.

PI, DOE: Development of integrated ARM datasets and their application to improve climate models, 06/01/11 - 05/31/14, \$551,321.00.

PI, DOE: Improved Atmosphere-Ocean Coupled Modeling in the Tropics for Climate Prediction, 05/01/2007 - 07/30/2012, \$801,287.00.

co-PI, NSF CDI-Type II: Collaborative Proposal: The political and security impacts of abrupt climate change on modern populations: An integrated computational model, 05/01/2010 - 04/30/2013, \$602,058.

PI, NCAR: Regional prediction of climate change at decadal time scales, 05/01/2010 - 04/30/2013, \$201,500.

PI, DOE: Investigating the double ITCZ biases in coupled models, 06/01/2012 - 05/30/2015, \$736,944.

Teaching Activities

Undergraduate Courses:

1. Dynamic meteorology, ATM346
2. Introduction to atmospheric sciences, ATM205
3. Atmospheric Physics ATM348

Graduate Courses:

1. Numerical methods in atmospheric sciences MAR574
2. Climate dynamics MAR596
3. Atmospheric Radiation, MAR 572
4. Theoretical Meteorology I, MAR 593
5. Atmospheric Sciences Seminar, OCN694
6. General circulation of the atmospheres, Graduate Student Seminar

Graduate Dissertation or Honors Projects Supervised

<u>Name</u>	<u>Title</u>	<u>Status</u>	<u>Date Graduated</u>
Matthias Franz	Suppression and creation of chaotic behavior in a periodic forced Lorenz system	MS	9/93
Shaocheng Xie	Analysis of simulation biases from the NCAR CCM column model and the impact of the convection triggering function.	Ph.D	9/1998
Jun Xu	Laboratory measurements of aerosol properties	Ph.D	9/1999
Jialin Lin	Multi-scale analysis of convection using observational data	Ph.D	9/2000
Doreen Yu	Study of regional climate change in the last sixty years in the State of New York	BSH	6/2001
Wuyin Lin	Influence of convection on the variability of upper-tropospheric water	Ph.D	9/2002
Jun Zheng	Measurement and modeling of atmospheric radicals	Ph.D	5/2005
Jingbo Wu	Cloud resolving modeling of the ARM March 2000 Cases	Ph.D	7/2006

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Yue Li	Cloud radiative forcing over hurricanes	M.S.	7/2007
Hua Song	Changes of tropical circulation in a warmer climate	Ph.D	7/2009
Jun Huang	Incorporation of time covariance variational analysis	Ph.D	in progress
Ying Chen	Coupling the WRF with the CCSM	Ph.D	2012
Parama Murkerjee	Cascading of energy and enstrophy from convection	Ph.D	in progress
Shuaiqi Tang	Variational integration of heterogeneous data from multiple measurement platforms	Ph.D	in progress
Tingyin Xie	Climate droughts and its impact	Ph.D	in progress
Xin Xie	Cloud-climate feedbacks in global models	Ph.D	in progress
Jingyi Chen	Cloud microphysics	Ph.D	in progress

Graduate Student Exam Committees:

Owen Doherty (Riemer)	Ph.D.	In progress
Keyhong Park (Mak)	Ph.D.	In progress
Kelly Lombardo (Colle)	Ph.D.	2011 graduation
Yanjuan Guo (Chang)	Ph.D.	2010 graduation
Zhihui Wang	Ph.D.	2009 graduation
Jie Gong (Geller)	Ph.D.	2009 graduation
Hua Song (Zhang)	Ph.D.	2009 graduation
David Novik (Colle)	Ph.D.	2008 graduation
Keyi Chen (Riemer)	MS.	2008 graduation
Yuanlan Lin (Colle)	Ph.D.	2007 graduation
Xiaosong Yang (Chang)	Ph.D.	2007 graduation
Jae Lee (Hameed)	Ph.D.	2007 graduation
Tiehan Zhou (Geller)	Ph.D.	2006 graduation
Jingbo Wu (Zhang)	Ph.D.	2006 graduation
Jun Zheng (Zhang)	Ph.D.	2005 graduation
Matt Jones (Colle)	MS	2004 graduation
Taotao Qian (Cess)	Ph.D.	2003 graduation
Keeyoon Sung (Varanasi)	Ph.D.	2003 graduation
Yangang Zeng (Colle)	MS.	2003 graduated
Yuanxing Zheng (Waliser)	MS.	2003 graduation
Ling Wang (Geller)	Ph.D.	2003 graduation
Tomoko Matsuno (Geller)	Ph.D.	2003 graduation

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Moguo Sun (Cess)	Ph.D.	2003 graduation
Wuyin Lin (Zhang)	Ph.D.	2002 graduated
Qunjun Zou (Varanasi)	Ph.D.	2001 graduated
Jialin Lin (Zhang)	Ph.D.	1999 graduated
Wanru Wu (Geller)	Ph.D.	2000 graduated
Xuelong Zhou (Geller)	Ph.D.	2000 graduated
Yaping Zhou (Cess)	Ph.D.	8/1999 graduated
Bing Ye (Anthony Del Genio)	Ph.D.	1999 graduated, Columbia University
Jun Xu (Zhang)	Ph.D.	1998 graduated
Shaocheng Xie (Zhang)	Ph.D.	1998 graduated
Wei Shi (Hameed)	Ph.D.	1998 graduated
Xiaodu Jing (Cess)	Ph.D.	1998 graduated
William Shen (Geller)	Ph.D.	1997 graduated
Danny Luo (Cess)	Ph.D.	1997 graduated
Victor Dortsov (Geller)	Ph.D.	1997 graduated
Boris Khattatov (Geller)	Ph.D.	1996 graduated
Iqbal Pittalwala (Hameed)	Ph.D.	1996 graduated
Victor Chan (De Zafra)	MS	1996 graduated
Drew Shindell (De Zafra)	Ph.D.	1995 graduated
Minghang Chen (Cess)	Ph.D.	1995 graduated
Matthias Franz (Zhang)	MS	1993 graduated

Research Staff and Postdoc Supervised in 2007-2008:

Wuyin Lin , Eric Tromeur, Hailong Liu, He Zhang, Juanxiong He

Publications of Minghua Zhang

2012

1. He Juanxiong, Minghua Zhang, Wuyin Lin, Brian Colle, and Andrew M. Vogelmann, 2012: The WRF nested within the CESM: Simulations of a mid-latitude cyclone over the Southern Great Plains. *J. Adv. Model. Earth Syst.*, Submitted.
2. Liu, Hailong, Minghua Zhang, Wuyin Lin, 2012: An Investigation of the Initial Development of the Double-ITCZ Warm SST Biases in the CCSM. *J. Climate*, 25, 140–155. doi: <http://dx.doi.org/10.1175/2011JCLI4001.1>
3. Zhang, M. H. et al. 2012: CGILS: First Results from an International Project to Understand the Physical Mechanisms of Low Cloud Feedbacks in General Circulation Models, Submitted to BAMS.
4. Zhang, M., et al., 2012: The CGILS experimental design to study low cloud feedbacks in general circulation models by using Single-Column and Large Eddy Simulation models. , *J. Adv. Model. Earth Syst.*, 4, doi:10.1029/2012MS000182.
5. P. N. Blossey, C. S. Bretherton, M. Zhang, A. Cheng, S. Endo, T. Heus, Y. Liu, A. Lock, S. R. de Roode and K.-M. Xu, [Marine low cloud sensitivity to an idealized climate change: The CGILS LES Intercomparison](#). *J. Adv. Model. Earth Syst.*, Submitted 07/2012.
6. Neale, R. B. J. Richter, S. Park, P. H. Lauritzen, S. J. Vavrus, P. J. Rasch, and M. Zhang, 2012: The Mean Climate of the Community Atmosphere Model (CAM4) in Forced SST and Fully Coupled Experiments. *J. Climate*. Submitted
7. Weihua Yuan, Rucong Yu, Minghua Zhang, Wuyin Lin, Jian Li, Yunfei Fu, 2012: Diurnal cycle of summer precipitation over the subtropical East Asia in CAM5. *Journal of Climate*. doi: <http://dx.doi.org/10.1175/JCLI-D-12-00119.1>
8. He Zhang, Minghua Zhang, Qing-cun Zeng, 2012: Sensitivity of Simulated Climate to Two Atmospheric models: Interpretation of Differences between Dry Models and Moist Models. *Monthly Weather Review*, doi: <http://dx.doi.org/10.1175/MWR-D-11-00367.1>
9. Yuan, Weihua, Rucong Yu, Minghua Zhang, Wuyin Lin, Haoming Chen, Jian Li, 2012: Regimes of Diurnal Variation of Summer Rainfall over Subtropical East Asia. *J. Climate*, 25, 3307–3320. doi: <http://dx.doi.org/10.1175/JCLI-D-11-00288.1>
10. Fridlind, A. M., et al. (2012), A comparison of TWP-ICE observational data with cloud-resolving model results, *J. Geophys. Res.*, 117, D05204, doi:10.1029/2011JD016595.
11. Gent P. R., G. Danabasoglu, L. Donner, M. Holland, E. Hunke, S. Jayne, D. Lawrence, R. Neale, P. Rasch, M. Vertenstein, P. Worley, Z-L. Yang, and M. Zhang, 2011: The Community Climate System Model version 4. *J. Climate*, 24, 4973–4991. doi: <http://dx.doi.org/10.1175/2011JCLI4083.1>

12. Zeng, Xiping, Wei-Kuo Tao, Toshihisa Matsui, Shaocheng Xie, Stephen Lang, Minghua Zhang, David O’C Starr, Xiaowen Li, 2011: Estimating the Ice Crystal Enhancement Factor in the Tropics. *J. Atmos. Sci.*, 68, 1424–1434. doi: <http://dx.doi.org/10.1175/2011JAS3550.1>

2011

13. Weihua Yuan, Rucong Yu, Haoming Chen, Jian Li, Minghua Zhang 2011, Subseasonal characteristics of diurnal variation in summer monsoon rainfall over central eastern China. *Journal of Climate*, doi: 10.1175/2010JCLI3805
14. Liu, Hailong; Liu, Xiangcui; Zhang, Minghua, Wuyin Lin, 2011: A critical evaluation of the upper ocean heat budget in the Climate Forecast System Reanalysis data for the south central equatorial Pacific ENVIRONMENTAL RESEARCH LETTERS Volume: 6 Issue: 3, Article Number: 034022 DOI: 10.1088/1748-9326/6/3/034022 Published: JUL-SEP 2011.
15. Bony, S., M. Webb, C. Bretherton, S. Klein, P. Siebesma, G. Tselioudis, and M. Zhang, 2011: CFMIP: Towards a better evaluation and understanding of clouds and cloud feedbacks in CMIP5 models. *CLIVAR Exchanges*, No. 56, International CLIVAR Project Office, Southampton, United Kingdom, 20–24.
16. Minghua Zhang, 2011: Equilibrium and Transient Climate Response to Anthropogenic Forcing: the Impact of Atmospheric Feedback Processes. *Journal of the Transaction of Atmospheric Sciences*, 2011, Vol. 34, No. 3, p12-23.

2010

17. Lin, W. and M. Zhang, 2010: [Reply to comments on “Seasonal Variation of the Physical Properties of Marine Boundary Layer Clouds off the California Coast”](#) *Journal of Climate*, 10.1175/2010JCLI3483.1.
18. Zhang, M., C. Bretherton, M. Webb, and P. Siebesma, 2010: [CFMIP-GCSS Intercomparison of Large Eddy Models and Single Column Models \(CGILS\)](#), *GEWEX News*, Vol. 20, No. 2, May 2010
19. Liu H., W. Lin, and M. Zhang, 2010: [Heat Budget of the Upper Ocean in the South-Central Equatorial Pacific](#). *Journal of Climate*, Vol. 23, No. 7, 1779-1792.
20. Xie, S., T. Hume, C. Jakob, S. A. Klein, R. McCoy, and M. Zhang, 2010: [Observed large-scale structures and diabatic heating and drying profiles during TWP-ICE](#). *J. Climate*, 23:57–79.
21. Xu, K. M. A. Cheng, and M. Zhang, 2010: [Cloud-Resolving Simulation of Low-Cloud Feedback to an Increase in Sea Surface Temperature](#). *Journal of the Atmospheric Sciences*, Vol. 67, No. 3, 730-748.

2009

22. Lin, Wuyin, Minghua Zhang, and Norman Loeb NG, 2009: [Seasonal Variation of the Physical Properties of Marine Boundary Layer Clouds off the California Coast](#). *Journal of Climate*, DOI: 10.1175/2008JCLI2478.1.
23. Zeng X, W Tao, M Zhang, AY Hou, S Xie, S Lang, X Li, DO Starr, and X Li. 2009. [A contribution by ice nuclei to global warming](#). *Quarterly Journal Royal Meteorological Society*, 135, doi:10.1002/qj.449.
24. Lin, Wuyin, Minghua Zhang, and Jingbo Wu, 2009: [Simulation of low clouds from the CAM and the regional WRF with multiple nested resolutions](#). *Geophysical Research Letters*, 36, L08813, doi:10.1029/2008GL037088
25. Zeng, X., W.K. Tao, M. Zhang, A.Y. Hou, S. Xie, S. Lang, X. Li, D.O. Starr, X. Li, and J. Simpson, 2009: [An Indirect Effect of Ice Nuclei on Atmospheric Radiation](#). *J. Atmos. Sci.*, 66, 41–61.

2008

26. Zhang M, Bretherton C, 2008: [Mechanisms of Low Cloud Climate Feedback in Idealized Single-Column Simulations with the Community Atmospheric Model \(CAM3\)](#). Journal of Climate, DOI: 10.1175/2008JCLI2237.1
27. Bader D.C., C. Covey, W.J. Gutowski Jr., I.M. Held, K.E. Kunkel, R.L. Miller, R.T. Tokmakian and M.H. Zhang, 2008: [Climate Models: An Assessment of Strengths and Limitations](#). A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research [(Authors)]. Department of Energy, Office of Biological and Environmental Research, Washington, D.C., USA, 124 pp.
28. Schumacher C, Ciesielski PE, Zhang MH, 2008: [Tropical cloud heating profiles: Analysis from KWAJEX](#). Monthly Weather Review: DOI: 10.1175/2008MWR2275.1

Zeng X., W.-K. Tao, S. Lang, A. Y. Hou, M. Zhang, and J. Simpson, 2008: [On the sensitivity of atmospheric ensembles to cloud microphysics in long-term cloud-resolving model simulations](#). *J. Meteor. Soc. Japan*, **86**, 45-65.

2007

29. Zhang, X. H., W. Y. Lin, and M. H. Zhang, 2007: [Toward Understanding the Double ITCZ Pathology in Coupled Ocean-Atmosphere General Circulation Models](#), *J. Geophys. Res.*, **112**, D12102, doi:10.1029/2006JD007878.
30. Song, H., and M. Zhang, 2007: [Changes of the Boreal Winter Hadley Circulation in the NCEP–NCAR and ECMWF Reanalyses: A Comparative Study](#). *J. Climate*, **20**, 5191–5200.
31. Zeng, X., W-Kuo Tao, M. H. Zhang, C. P. Lidard, S. Lang, J. Simpson, S. Kumar, S. C. Xie, J. L. Eastman, C. L. Shie, and J. V. Geiger, 2007: [Evaluating Clouds in Long-Term Cloud-Resolving Model Simulations with Observational Data](#), *J. Atmos. Sci.*, **64**, 4153–4177.
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33. Schumacher, C., M. Zhang, and P. Ciesielski, 2007: [Heating structures of the TRMM field campaigns](#). *J. Atmos. Sci.*, **64**, 2593–2610.

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34. Zhang, M. H., and H. Song, 2006: [Evidence of Deceleration of Atmospheric Vertical Overturning Circulation over the Tropical Pacific](#), *Geophysical Research Letters*. **33**, L12701, doi:10.1029/2006GL025942.
35. Collins, D. W., P. J. Rasch, B. A. Boville, J. J. Hack, J. R. McCaa, D. L. Williamson, B. P. Briegleb, C. M. Bitz, S.-J. Lin, and M. H. Zhang, 2006: [The Formulation and Atmospheric Simulation of the Community Atmosphere Model: CAM3](#). *J. Climate*, **19**, 2144–2161.
36. Xie, S. C., S. A. Klein, M. H. Zhang, J. J. Yio, R. T. Cederwall, and R. McCoy, 2006: [Developing Large-Scale Forcing Data for Single-Column and Cloud-Resolving Models from the Mixed-Phase Arctic Cloud Experiment](#). *J. Geophys. Res.*, **111**, D19104, doi:10.1029/2005JD006950.
37. Xie, S., S. A. Klein, J. J. Yio, A. C. M. Beljaars, C. N. Long, and M. Zhang, 2006: [An assessment of ECMWF analyses and model forecasts over the North Slope of Alaska using observations from the ARM Mixed-Phase Arctic Cloud Experiment](#), *J. Geophys. Res.*, **111**, D05107, doi:10.1029/2005JD006509.

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38. Zhang, M. H., W. Y. Lin, S. A. Klein, J. T. Bacmeister, S. Bony, R. T. Cederwall, A. D. Del Genio, J. J. Hack, N. G. Loeb, U. Lohmann, P. Minnis, I. Musat, R. Pincus, P. Stier, M. J. Suarez, M. J. Webb, J. B. Wu, S. C. Xie, M. -S. Yao, J. H. Zhang, 2005: [Comparing Clouds And Their Seasonal Variations in 10 Atmospheric General Circulation Models with Satellite Measurements](#), *J. Geophys. Res.*, **110**, D15S02, doi:10.1029/2004JD005021.
39. Zhang, M. H., 2005: Cloud-climate feedback: lessons learned from two El Nino events, 332-348. In "Frontiers in Climate Modeling" by Kiehl and Ramanathan. Cambridge University Press, ISBN-10: 0521791324, 367 pp.
40. Zhang, M., S. Klein, D. Randall, R. Cederwall, and A. Del Genio, 2005: [Introduction to special section on Toward Reducing Cloud-Climate Uncertainties in Atmospheric General Circulation Models](#), *J. Geophys. Res.*, **110**, D15S01, doi:10.1029/2005JD005923.
41. Xu, K., M. Zhang, Z. A. Eitzen, S. J. Ghan, S. A. Klein, X. Wu, S. Xie, M. Branson, A. D. Del Genio, S. F. Iacobellis, M. Khairoutdinov, W. Lin, U. Lohmann, D. A. Randall, R. C. J. Somerville, Y. C. Sud, G. K. Walker, A. Wolf, J. J. Yio, J. Zhang, 2005: [Modeling springtime shallow frontal clouds with cloud-resolving and single-column models](#), *J. Geophys. Res.*, **110**, D15S04, doi:10.1029/2004JD005153.
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43. Xie, S., M. Zhang, M. Branson, R. T. Cederwall, A. D. Del Genio, Z. A. Eitzen, S. J. Ghan, S. F. Iacobellis, K. L. Johnson, M. Khairoutdinov, S. A. Klein, S. K. Krueger, W. Lin, U. Lohmann, M. A. Miller, D. A. Randall, R. C. J. Somerville, Y. C. Sud, G. K. Walker, A. Wolf, X. Wu, K.-M. Xu, J. J. Yio, G. Zhang, J. Zhang, 2005: [Simulations of midlatitude frontal clouds by single-column and cloud-resolving models during the Atmospheric Radiation Measurement March 2000 cloud intensive operational period](#), *J. Geophys. Res.*, **110**, D15S03, doi:10.1029/2004JD005119.

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44. Zhang, M. H., 2004: Cloud-climate feedback, how much do we know? In "Observation, Theory, and Modeling of Atmospheric Variability", edited by Zhu et al., World Scientific Series on Meteorology of East Asia, Vol. 3, World Scientific Publishing Co., Singapore, 2004, 632pp.
45. Lin, W. Y. and M. H. Zhang, 2004: [Evaluation of clouds and their radiative effects simulated by the NCAR Community Atmospheric Model CAM2 against satellite observations](#). *J. Climate*, **17**, 3302-3318.
46. Zhu, X., et al., and M. H. Zhang, 2004: Observation, Theory, and Modeling of Atmospheric Variability, World Scientific Publishing Co., Singapore, 2004, 632pp.
47. Xie, S., M. H. Zhang, J. S. Boyle, R. T. Cederwall, G. L. Potter, and W. Y. Lin, 2004: [Impact of a New Convective Triggering Mechanism on CAM2 Model Simulations: Results from Short-range Weather Forecasts](#). *J. Geophys. Res.*, **109**, D14102, doi:10.1029/2004JD004692.
48. Zhou, X., M.A. Geller, and M. Zhang, 2004: [Temperature Fields in the Tropical Tropopause Transition Layer](#). *J. Climate*, **17**, 2901–2908.
49. Lin, J. L., B. Mapes, M. H. Zhang, M. Newman, 2004: [Stratiform precipitation, vertical heating Profiles, and the Madden–Julian Oscillation](#). *J. Atmos. Sci.* Vol. 61, No. 3, pp. 296–309.
50. Xie S., R. T. Cederwall, M. Zhang, 2004: [Developing long-term single-column model/cloud system-resolving model forcing data using numerical weather prediction products constrained by surface and top of the atmosphere observations](#), *J. Geophys. Res.*, **109**, D01104, doi:10.1029/2003JD004045.

2003

51. Zhang, M., W. Lin, C. Bretherton, J. J. Hack, and P. J. Rasch, 2003: [A modified formulation of fractional stratiform condensation rate in the NCAR Community Atmospheric Model \(CAM2\)](#), *J. Geophys. Res.*, **108**(D1), 4035, doi:10.1029/2002JD002523.

52. Xie S., R. T. Cederwall, M. Zhang, J. J. Yio, 2003: [Comparison of SCM and CSRM forcing data derived from the ECMWF model and from objective analysis at the ARM SGP site](#), J. Geophys. Res., 108 (D16), 4499, doi:10.1029/2003JD003541.
53. Wang, P-H, P. Minnis, B. A. Wielicki, T. Wong, R. D. Cess, M. H. Zhang, L. B. Vann, G. S. Kent, 2003: [Characteristics of the 1997/1998 El Niño cloud distributions from SAGE II observations](#). J. Geophys. Res. Vol. 108 No. D1 10.1029/2002JD002501.

2002

54. Waliser, D. E., J. Ridout, S. Xie, and M. Zhang, 2002: [Variational Objective Analysis for Atmospheric Field Programs: A Model Assessment](#), J. Atmos. Sci., 59, 3436-3456.
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EDUCATION

Cornell University College of Agriculture and Life Sciences

Bachelor of Science in Wildlife Biology
Degree conferred May 1976

University at Albany

Masters of Science in Biodiversity, Conservation, and Policy
Degree conferred May 2002

Thesis topic: *An Assessment of Small Marshes Created under the 48-D Program and Implications for Compensatory Mitigation and Biodiversity Policy.*

Rockefeller College of Public Administration

Graduate courses and seminars in Public Administration: Administrative Law, Program Planning and Evaluation, Decision Making, Supervising, Working in Teams, Negotiation Principles and Skills.

Other Training

Numerous in-service training, including: Leadership Skills for Women, Comprehensive Management, Communication and Citizen Participation, Productive Communication, Negotiation and Litigation Skills, Conflict Resolution, Leadership and Empowerment, Facilitation skills, Negotiating through Change, Stimulating Creativity, Structured Decision-Making, and Strategic Visioning in the Public Domain.

CERTIFICATION

Certified Wildlife Biologist (1983) through the Certification of Professional Wildlife Biologists Program of The Wildlife Society.

WORK EXPERIENCE

September 2007 to present - Director, Division of Fish, Wildlife and Marine Resources; NYS Department of Environmental Conservation; Albany, NY.

- Provide oversight, leadership, and direction to the Division, encompassing 363 staff in five bureaus, at 34 facilities, and operating with a \$57 million budget.
- Lead the Division Management Team, comprised of the Asst. Director and five Bureau Chiefs, in leading and managing the Division, setting goals and objectives, establishing policies and protocols, and charting direction for the Division using principles of continuous improvement.
- Lead effort to define an updated vision statement for Division and to define key priorities for refocused Division program.
- Provide leadership in the Division, agency, and professionally on emerging fish and wildlife issues such as climate change and fish and wildlife health.
- Provide leadership and direction on revising the State Wildlife Action Plan for agency and state.

- Represent the Division and its programs at the agency level, in collaboration with other agencies, and in reconciling issues with other Divisions.
- Navigate Division through downsizing and fiscal austerity budgeting.
- Serve as a Division, agency, or state delegate or member, representing the interests of NY, the Division, and NY's fish and wildlife resources on the following boards, commissions, and committees:
 - Conservation Leadership Forum, co-chairing with US Fish and Wildlife Service and the National Marine Fisheries Service, developing a National Fish, Wildlife and Plant Climate Adaptation Strategy, 2009 – present.
 - Northeast Association of Fish and Wildlife Agencies, Executive Committee 2008-present, Treasurer, 2008-2011, Vice President, 2011-13.
 - Association of Fish and Wildlife Agencies: Climate Change Committee, 2008-present, Chair 2009-present; Ocean Policy Committee, 2010; Fish and Wildlife Health Committee, 2009-present.
 - Joint Task Force on Endangered Species Act Policy, in cooperation with the Association of Fish and Wildlife Agencies (northeast state representative), US Fish and Wildlife Service, and the National Marine Fisheries Service, 2010-present
 - Lake Champlain Fish and Wildlife Coordinating Committee, Chair 2008-2010.
 - Cornell Cooperative Fish and Wildlife Research Unit Coordinating Committee, Co-Chair, 2007-present.
 - Executive Committee for White Nose Syndrome interstate and interagency response and conservation coordination.
 - New York Sea Grant Board of Governors, 2008-present.
 - Cornell University College of Agriculture and Life Sciences Dean's Advisory Committee, 2008-present.
 - SUNY Cobleskill College Advisory Committee, 2008-present.
 - North Atlantic and Upper-Midwest/Great Lakes Landscape Conservation Cooperatives, steering committee member (both LCCs), Co-Chair NALCC 2010-present.
 - Blue Ribbon Panel on the Future of the Wildlife Profession and its Implications for Training the Next Generation of Wildlife Professionals, hosted by The Wildlife Society 2010-2011.
 - National Wetlands Award selection committee, sponsored by the Environmental Law Institute, 2010-2011.

July 2001 to 2007 - Landscape Conservation Section Head, NYS Department of Environmental Conservation; Division of Fish, Wildlife and Marine Resources, Albany, NY.

In addition to serving as Wetlands Program Manager, direct the Habitat Conservation Section.

- Supervised the Watershed Conservation Coordinator, and oversaw development of landscape level habitat conservation capacity within the Division.
- Supervised Aquatic Habitat Manager, and oversaw aquatic habitat unit, including stream protection program; Wild, Scenic and Recreational Rivers program; and other habitat conservation efforts.
- Supervised and oversaw the New York Natural Heritage Program.
- Coordinated with other Divisions and Bureaus on biodiversity and landscape level habitat conservation efforts and issues.
- Served as the Division representative to the Natural Resources Conservation Service's State Technical Committee and on several Conservation Program subcommittees for the Farm Bill.
- Served on Division team overseeing development of State Wildlife Grants-funded program

September 1983 to 2007 - Freshwater Wetland Program Manager, NYS Department of Environmental Conservation, Division of Fish and Wildlife, Albany, NY.

Served as agency's Wetlands Program Manager, and in special assignments.

- Developed, coordinated and administered the state's freshwater wetlands program, including developing, revising and promulgating regulations; reviewing and developing policies, guidance, and protocols; reviewing, developing and amending state and federal legislation; developing strategies for regulatory reform and continual program improvement.

- Coordinated DEC regional and division wetlands programs.
- Worked with other state and federal agencies on wetlands conservation issues; provided assistance to localities on local wetlands protection; coordinated with constituencies and stakeholders, landowners, and the public.
- Launched and lead a 13-agency federal/state Interagency Wetlands group.
- Assisted in 1990s with National Governor's Association Wetlands Policy and in the White House Interagency Wetlands Policy initiative.
- Secured and administered over \$1 million in federal wetlands grants and associated research and management projects.
- Prepared the State Wetland Conservation Plan (1990).
- Lead the Department's ecosystem working group for the Risk Assessment project of the Pollution Prevention Program.

April 1979 to August 1983 - Research Scientist. NYS Department of Environmental Conservation, Endangered Species Unit, Delmar, NY.

Served as the Endangered Species Reptile and Amphibians Specialist.

- Developed and implemented statewide research and management programs for endangered and threatened reptiles and amphibians. Conducted, coordinated, and supervised field surveys and research projects and prepared management plans.
- Oversaw program conserving federally-listed Chittenango ovate amber snail (COAS) and served as the federal Recovery Team leader for the COAS Recovery Team.
- Assisted Unit Leader in program planning, budget preparation, and administrative duties, and served in his absence.
- Supervised appropriate biological, technical, and regional staff.
- Assisted in developing a standardized set of criteria for listing endangered, threatened and special concern species in New York; rated reptiles and amphibians, and proposed new list of species.

December 1977 to April 1979 - Conservation Biologist. NYS Department of Environmental Conservation, Waterfowl Project, Wildlife Resources Center, Game Farm Road, Delmar, NY 12054.

- Implemented research projects on impacts of lead shot on waterfowl.
- Assisted in development and implementation of waterfowl hunter survey and made management recommendations for season adjustments.
- Supervised waterfowl banding station.
- Investigated the incidence of plastic pellet ingestion by waterfowl on the Hudson River.

AWARDS AND HONORS

- National Wetlands Annual Award for Leaders of Outstanding State Programs (1990), from the Environmental Law Institute and the Environmental Protection Agency
- Exemplary Achievement Award (1990) to New York's Wetlands Program by U.S. Fish and Wildlife Service.
- P.F. English Award (April 1976) from the Northeast Section of The Wildlife Society for outstanding student in wildlife biology in the northeast.

AVOCATIONS

- travel, bird-watching, cooking, reading, gardening, x-country skiing, hunting

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PATRICK HOOKER

Senior Director of Industry Development, Agribusiness

Empire State Development Corporation

Patrick Hooker is the Director of Agribusiness Development for the Empire State Development Corporation. As a member of the Strategic Business Division Pat works to retain and grow the agriculture, food, forestry and biofuels industries in support of Governor Cuomo's economic development objectives.

He has been involved with agricultural policy his entire career serving as the Commissioner of Agriculture, Director of Public Policy for the New York Farm Bureau, the Rural Affairs Advisor for the State Assembly Minority Leader, and as the Director of the New York State Senate Agriculture Committee.

Pat grew up in rural Madison County, working on a neighbor's dairy farm. In school, he was active in the Junior Holstein Club, as well as FFA, which he served as State FFA President and received his American Farmer degree. Pat received his Associate's degree from Morrisville State College and his Bachelor of Science degree in Agricultural Education from Cornell University.

Pat and his wife Karen have two children, Erika and Mitchell. Together, they own a 350 acre farm in southern Herkimer County, where they grow hay, keep horses and produce maple syrup.

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New York Sea Grant Strategic Plan 2014-2017

Technical Focus Areas for Assisting Stakeholders

Our Vision

Coastal decision-making will be influenced by science-based information and educated stakeholders.

Our Mission

“Bringing science to the shore” through high quality research, outreach, and extension.

Our Values

Excellence, Integrity and Responsiveness: New York Sea Grant (NYSG) values excellence, objectivity, integrity and responsiveness in basic and applied science, research, outreach and education to inform New York's coastal stakeholders.

Stewardship and Sustainable Development: NYSG values science-based decision-making that supports stewardship and sustainable development of New York's and the Nation's coastal resources.

Collaboration and Partnership: NYSG values liaisons and partnerships with and among coastal stakeholders to ensure inclusion of diverse perspectives for coastal problem solving.

Education and Continuous Learning for Positive Change: NYSG values formal and informal education of elementary, secondary, undergraduate, and graduate students and the general public to create the informed citizenry needed for wise coastal resource decision-making.

Professional Competence: NYSG values a well-educated and experienced staff whose desire for life-long education helps NYSG respond to high priority and emerging coastal resource needs with integrative, innovative, relevant and timely activities.

Introduction and Process

This is the new Strategic Plan for New York Sea Grant (NYSG) for the years 2014- 2017 as requested by the National Sea Grant Office. This Plan has been developed during 2012 with input from the Board of Governors, Program Advisory Council, academic researchers in New York, and NYSG staff and stakeholder groups early in the process. Members of the Board of Governors and Program Advisory Council were also invited to comment on a near-final draft

and most of their suggested changes have been incorporated. This plan draws upon the Strategic Plan of the National Sea Grant College Program (2014-2017) and other documents, but is focused on the needs of New York and its citizens.

The plan is structured around three Program Objectives and four Focus Areas. The Program Goals are unique to NYSG and provide a clear focus and ready shorthand (economics, environment, and education) for discussing the program and its goals with policy makers and stakeholders, particularly when conducting our work and seeking funding. The Focus Areas conform to the Focus Areas of the strategic plan of the National Sea Grant College Program (2014-2017), which simplifies the interactions with the National Sea Grant College Program and other state Sea Grant programs as well as reporting to the National Sea Grant Office. This is also important in helping the National Sea Grant College Program to become more of a focused national program which addresses the needs of the National Oceanic and Atmospheric Administration (NOAA) and the Nation (Report of the National Sea Grant Advisory Board on Sea Grant Research, August 2009). Though the Focus Areas are broad, they are tied together and do not exist in isolation. In addition to the above, the NOAA Strategic Plan, the National Ocean Policy and other plans and documents were consulted in developing this plan.

Background

Among the 33 programs of the National Sea Grant College Program, New York is the only state program bordering two Great Lakes and the open ocean and the only state program active in three different Sea Grant regions (the Northeast, the Mid-Atlantic, and the Great Lakes). More than 85 percent of New York's 19 million people live within a short distance of the State's 3400 miles of Great Lakes, estuarine and marine coastline. Prominent New York State coastal water bodies include the Hudson, St. Lawrence, and Niagara Rivers; Lakes Ontario and Erie; Long Island's estuarine bays; Long Island Sound; New York Harbor; as well as the New York Bight and the coastal Atlantic Ocean. With so much of the State's economy and population relying upon and impacting the State's marine and Great Lakes resources, there is a compelling need for informed management of the interactions between people and the ecosystems associated with these areas. As a university-based program committed to developing and extending peer-reviewed science and to having it used by decision makers, NYSG is well-positioned to assist all levels of government and private entities by "Bringing Science to the Shore." As a university-based Federal-State partnership, NYSG is jointly overseen by the State University of New York (SUNY) and Cornell University through a Board of Governors representing both Universities.

In a time of accelerating economic, environmental, and scientific developments, New York Sea Grant (NYSG) will serve as an important partner in helping New York's diverse coastal communities to respond to rapid economic and environmental changes. (The term coastal used throughout this document includes all the Great Lakes, estuarine, and marine coastlines mentioned above.) New York Sea Grant will support the development of objective, peer-reviewed scientific information about New York's coastal resources that is needed for current and future decision-making. It will also communicate the important results of these and other

scientific studies in forms useful to its stakeholders and partners in New York's coastal communities. These partners and stakeholders include coastal residents; coastal businesses and their workers; policy-making officials and staffs of municipal, State, and Federal governments and agencies; and teachers and students. Through the development and dissemination of this scientific research-based information, tools, and expertise, New York Sea Grant, working with these stakeholders and partners, will use an integrated approach to advance its three Program Objectives below.

Program Objectives

New York Sea Grant (NYSG) has three integrated Program Objectives which provide the direction to drive the program forward. All three Program Objectives are separately highlighted but are closely connected and do not stand alone. Some of the most important outcomes are those which lead to progress on more than one Program Objective simultaneously.

Coastal environmental sustainability NYSG will assist coastal communities in ensuring the long-term health, sustainability, and resilience of their coastal environments by providing information on the impacts of many different human interactions with the coastal environment, including recreational, commercial, and watershed impacts.

Coastal economic vitality NYSG will support coastal communities in protecting and promoting their economic vitality in a manner consistent with coastal sustainability through providing research and extension programming which addresses tourism, recreational activities, fisheries, and other sustainable waterfront businesses. This activity includes research and programs which provide information that may be used to minimize and mitigate environmental hazards, aid in job creation and retention, as well as promote cost-saving measures.

Coastal citizens' awareness and understanding NYSG will engage many sectors of coastal communities through education and training programs to measurably improve coastal awareness and literacy, as well as the understanding of sustainable coastal environments and economies. Teachers and students as well as many other coastal partners will be engaged by these efforts.

Within the over-arching major Program Objectives listed above, NYSG has four Programmatic Focus Areas. Aspects of each of these Focus Areas address the Program Objectives. Goals are then associated with each Focus Area. Learning, action and consequence outcomes for identified for each Goal. The outcomes are defined by the National Sea Grant Office as follows:

Learning (short-term) outcomes lead to increased awareness, knowledge, skills, changes in attitudes, opinions, aspirations or motivations through research and constituent engagement.

Action (medium-term) outcomes lead to behavior change, social action, adoption of information, changes in practices, improved decision-making or changes in policies.

Consequence (long-term) outcomes are long-term, and in most cases, require focused efforts over multiple strategic planning cycles. Consequence outcomes in a four-year strategic plan serve as reference points toward reaching focus area goals between the current and future strategic plans.

Annual work plans for research, extension, education, and communications will address the strategies for achieving these outcomes. Those specific strategies will also allow for New York Sea Grant's ability to respond to new and emerging issues within the four Focus Areas.

Technical Focus Area A. *Healthy New York Coastal Ecosystems and Habitats* (Estimated Level of NYSG Effort/Resources is 23%)

The ecosystems and habitats in New York range from the relatively pristine to significantly impaired in terms of their function and productivity. Some areas are still impacted today as a result of previous anthropogenic activities. In the world of today and tomorrow, human-related activities will continue to play a role in shaping our ecosystems and habitats. With increased human mobility and global economy, aquatic invasive species (AIS) also have the potential to cause major changes. Changing climate may also affect the distribution of aquatic species, as well as have other impacts due to deviations from current status in temperature, salinity, acidification, rainfall, storm events, and sea level. However, projections of ecosystem and habitat alterations due to climate change, in particular, must be considered in the context of the uncertainty that is a part of that evolving field. It is important to gain a scientific understanding of the dynamics and processes involved in ecosystem and habitat change and whether those processes might be slowed or prevented. Second, processes that might mitigate or repair negative changes must be identified and assessed when restored function is desired. Lastly, in some cases, prevention or mitigation of changes, or restoration to previous conditions, may not be possible. Then, managers and other stakeholders need new science-based information useful for managing new environments so New York's ecosystems and habitats can sustainably function.

NYSG Goal 1:

Protected, Restored and/or Enhanced Habitat and Ecosystems through reduction or mitigation of, or adaptation to, the impacts of a) aquatic invasive species, b) changes in aquatic communities due to ecosystem and climate change, and c) anthropogenic activities.

Learning Outcomes

- 1.1 Measures and tools are developed (through natural and social science research) to predict, prepare for, assess, and mitigate the effects of ecosystem changes on coastal habitat, including species loss.
- 1.2 Measures and tools are developed (through natural and social science research) to predict, prevent, prepare for, control or mitigate the introduction and effects of

- aquatic invasive species.
- 1.3 Techniques and methods for habitat management and restoration are developed, and ways to assess the effectiveness, sustainability, and costs of new and current methods are identified.
 - 1.4 Information, tools, and methods are developed to look towards what new ecosystem and habitat states might be as affected by AIS, climate and other changes, and anthropogenic activities.
 - 1.5 Stakeholders, decision-makers, and the public are informed about the tools, methods, rationale and costs for improving coastal habitat.
 - 1.6 Strategies are developed for coastally-located businesses and coastal construction activities to help them reduce their impact on nearby habitat and ecosystems.
 - 1.7 Resource managers and the public are educated about the potential habitat impacts of climate change and other ecosystem or land use changes.

Action Outcomes

- 1.8 Stakeholders use NYSG-developed or –provided tools and measures to plan for, reduce, manage, or mitigate the impacts of aquatic invasive species for the benefit of the habitat and ecosystem.
- 1.9 Stakeholders use NYSG-developed or -provided tools and measures to better plan for managing the effects of changes in species abundance and biodiversity.
- 1.10 If restoration is not cost-effective or achievable, then stakeholders agree on the best management of the changed habitat.

Consequence Outcomes

- 1.11 Habitats and their ecosystems are more resilient to change.
- 1.12 Habitats are protected, enhanced or restored.
- 1.11 Degraded ecosystem function and productivity are restored.

State Performance Measures for Healthy New York Coastal Ecosystems and Habitats

- S1. Number of Sea Grant measures, tools, and techniques developed to help ensure healthy New York coastal ecosystems and habitats.
- S2. Number of resource managers or coastal construction businesses incorporating techniques and methods based on information gained from NYSG.

National Performance Measures for Healthy Coastal Ecosystems

- N1. Number of Sea Grant tools, technologies and information services that are used by our partners/customers to improve ecosystem-based management.
- N3. Number of acres of coastal habitat protected, enhanced or restored as a result of Sea Grant activities.

Technical Focus Area B. *Sustainable New York Fisheries and New York Seafood Businesses, including Aquaculture*

(Estimated Level of NYSG Effort/Resources is 22%)

New York fisheries and seafood businesses are an important part of the New York State economy, worth about \$7.9B per year (1999). In addition, commercial fishing and fishing communities have historically been a significant way of life on Long Island, but are currently threatened. Recreational fishing is also very important in both the Great Lakes and around the New York City metropolitan area, including Long Island. (Recreational boating alone was a \$2B industry in New York in 2003.) Seafood safety, including HACCP training, is essential for New York seafood businesses which handle both New York and imported seafood products, especially as the seafood business becomes increasingly international. Finally, aquaculture has been underdeveloped in New York State and offers new opportunities for economic advancement in both coastal and inland communities.

NYSG Goal 2:
Sustainable Fisheries and Aquaculture for New York

Learning Outcomes

- 2.1 The causes and potential remedies for actual and predicted changes in populations and population dynamics of finfish and shellfish of economic importance to New York are determined through research.
- 2.2 Fisheries managers, fishermen, and the public better understand the causes and remedies for population changes in finfish and shellfish of economic importance in New York and adjacent waters. Comparable information is available for aquaculture operations.
- 2.3 Coastal communities are aware of threats to fisheries sustainability and economic stability, as well as appropriate steps (including new and alternative tools being successfully applied in other regions) to help reduce the threats.

Action Outcomes

- 2.4 Fisheries managers and related businesses evaluate shellfish and finfish management and restoration efforts.
- 2.5 Fisheries managers, and businesses accept the evaluation of shellfish and finfish management and restoration efforts and use it for decision-making.

Consequence Outcomes

- 2.6 The economically important shellfisheries and finfisheries in NY are sustainable.

NYSG Goal 3:
Safe, High Quality Seafood Products from Profitable New York Seafood Businesses

Learning Outcomes

- 3.1 Knowledge gaps on current issues, policies, regulations, or environmental conditions that could affect the quality and safety of products, or the productivity and

profitability of their individual seafood business or the seafood industry in New York are filled through appropriate research.

- 3.2 Develop and assess potential methods and tools to overcome technological, economic and regulatory barriers to the expansion of aquaculture.
- 3.3 Individuals from seafood businesses obtain the knowledge and skills that they need to build and manage an effective Hazard Analysis Critical Control Point (HACCP) based food safety plan and comply with the requirements of the Food and Drug Administration's (FDA) Seafood (HACCP) regulation.
- 3.4 Information to facilitate the potential expansion of coastal marine and Great Lakes aquaculture in New York State for human consumption is provided to stakeholders, including businesses and agencies.

Action Outcomes

- 3.5 Businesses, decision makers and other interested parties use information on current issues, policies, regulations, or other conditions that could affect the quality and safety of products, or the productivity and profitability of their individual seafood business or the seafood industry in New York.
- 3.6 State and federal food safety inspectors and businesses are trained in HACCP principles and the FDA Seafood HACCP regulations.

Consequence Outcomes

- 3.7 Consumers improve their health through increased consumption of safe and sustainable seafood products.
- 3.8 The New York seafood industry (including aquaculture) operates sustainably and is economically viable.

State Performance Measures for Sustainable New York Fisheries and New York Seafood Businesses, including Aquaculture

- S3. Number of Sea Grant measures, tools, and techniques developed to help ensure sustainable New York fisheries and seafood businesses, including aquaculture.
- S4. Number of recreational and commercial anglers who learn about sustainable fishing practices from NYSG.
- S5. Number of fisheries managers, recreational anglers, and other fisheries stakeholders who benefit from improved fisheries management attributable to information provided to them by NYSG.
- S6. Number of households educated by NYSG regarding the health benefits of seafood consumption.
- S7. Number of aquaculture interests (including scientists, businessmen and regulators) receiving assistance from NYSG regarding aquaculture.
- S8. Number of individuals in seafood businesses who will complete the Seafood HACCP Alliance Internet training course developed and managed by NYSG to update their HACCP based food safety program.
- S9. Number of individuals from the food industry who complete the Good Manufacturing practices internet training course developed and managed by NYSG.

National Performance Measures for Sustainable Fisheries and Seafood Businesses

- N4. Number of fishermen, seafood processors, and aquaculture industry personnel who modify their practices using knowledge gained in fisheries sustainability and seafood safety as a result of Sea Grant activities.
- N5. Number of seafood consumers who modify their purchases using knowledge gained in fisheries sustainability, seafood safety and the health benefits of seafood as a result of Sea Grant activities.

Technical Focus Area C. *Resilient New York Communities^{*} and Economies*

(Estimated Level of NYSG Effort/Resources is 36%)

With over 85% of New Yorkers living along the coast, the communities in which they live, work and play become a focal area for New York Sea Grant. The human and environment interface in the coastal area exemplifies the importance and complexities of the relationship between healthy environments and healthy economies—the synergies and the potential conflicts. As municipalities and businesses grow, human use of the landscape changes which in turn may adversely impact coastal resources. New York Sea Grant can assist local governments to grow in sustainable fashions which are protective of coastal resources, human health and the economy. In particular, the quality of our coastal waters can be most sensitive to human use. NYSG must help all types of communities to understand how their activities impact water quality and act in order to protect and improve it. Businesses located in the coastal zone have a unique relationship with these coastal resources as they may benefit from a healthy environment and improve the local economy while inadvertently damaging those same resources. NYSG should assist these stakeholders to cost effectively implement practices which will mutually benefit both their business and the environment. Additionally, concerns about flooding, erosion, and invasive species and how these threats may be affected by climate change loom while coastal audiences attempt to rebound from the recession of the past few years. NYSG is focused on assisting coastal communities and businesses with responding to and preparing for potential hazards. Promoting adaptation and resilience will be priorities.

**For the purposes of this Plan, communities are defined broadly to include governments, businesses, residents, visitors, and non-governmental organizations.*

NYSG Goal 4:

Robust and Sustainable Development of Coastal Business

Learning Outcomes

- 4.1 Tools, techniques and methods are developed to determine potential impacts on coastal resources from activities such as dredging, boating, construction and other economic activities.
- 4.2 Techniques are developed so that coastally-located businesses can cost-effectively reduce their impact on nearby habitat and meet regulatory requirements.
- 4.3 Tools, techniques and methods are developed (through natural and social science research) to assess economic impacts of coastal businesses on coastal economies.
- 4.4 Marine industry and local, state, and national decision makers have access to NYSG information and assistance in order to better understand the economic and ecological impacts of dredging (or not dredging).
- 4.5 Coastal tourism and other coastal resource-related-businesses (including aquaculture for bait, bait and tackle shops, marinas, waterfront construction, etc.) as well as local governments understand how their activities impact the coastal economy and ecosystem and ways to diversify income sources.

Action Outcomes

- 4.6 Marine industry and local, state, and national decision makers better identify and assess impediments to meeting dredging needs for navigation, and use NYSG information and assistance to start developing sustainable regional dredging and dredged material management plans and programs that are protective of coastal resources.
- 4.7 Coastal tourism and other coastal resource-related businesses (including aquaculture for bait), as well as local governments, maintain and build their economic viability in an environmentally sustainable manner and help create and retain jobs, and connect to new markets that will increase sales and income. Regional economic development council plans may assist in identifying these businesses.

Consequence Outcomes

- 4.8 Communities have diverse, healthy economies and industries that support working waterfronts.

NYSG Goal 5:

Effective Community Land Use Planning which Integrates Watershed Issues

Learning Outcomes

- 5.1 Tools, methods or practices are developed to assist municipal governments in the prevention of point and nonpoint source pollution.
- 5.2 Local decision makers and governments, including Nonpoint Source Education for Municipal Officials (NEMO) program participants, have knowledge about sustainable and cost effective community practices and how they impact coastal watershed issues which is supported in scientific literature.
- 5.3 Municipalities have access to and understand research regarding water supply, water demand and competing water uses including impacts of climate change.

- 5.4 Municipalities, non-profit organizations, businesses and the public know about watershed planning tools and best management practices available to reduce point and nonpoint source and stormwater pollution (and adapt to sea level rise or lake level changes, where applicable) and limit their effects on coastal habitats and water quality.

Action Outcomes

- 5.5 Coastal municipalities, including NEMO program participants, implement sustainable and cost effective community practices as they relate to coastal watershed issues.
- 5.6 Municipalities implement plans and/or policies which benefit ground and/or surface water quality through addressing nonpoint sources of pollution.

Consequence Outcomes

- 5.7 Quality of life in communities, as measured by economic and social well-being, improves without adversely affecting environmental conditions.

NYSG Goal 6:

Improved Coastal Water Quality through Community Efforts

Learning Outcomes

- 6.1 Techniques and tools are developed to better assess coastal water quality, water quality impairments, and harmful algal blooms and to identify and develop potential remedial measures.
- 6.2 Water quality data is interpreted to understand how (or how much) the expenditures for practices designed to create water quality improvements are benefiting the ecosystem and water quality.
- 6.3 Communities understand the relationship between the effectiveness and cost of water quality improvement practices.
- 6.4 Individual people who live, work or play in the coastal areas; governments; public health officials; utilities; coastal and watershed businesses; non-profit organizations; and/or managers of coastal areas and resources have knowledge about the causes and consequences of water quality impairments.

Action Outcomes

- 6.5 Individual people, who live, work or play in the coastal areas; governments; public health officials; utilities; coastal and watershed businesses; non-profit organizations; and/or managers of coastal areas and resources utilize research and extension resources to improve water quality, through implementing best management practices (BMPs) and taking other scientifically supported actions.
- 6.6 Communities work collaboratively to solve water and habitat impairments in shared waters, such as harbors and embayments.

Consequence Outcomes

6.7 Water quality improves.

NYSG Goal 7:

Improved Ability to Prepare for and Mitigate the Impacts of Existing and Future Coastal Hazards

Learning Outcomes

- 7.1 Tools and techniques are developed and/or used to improve the prediction and consequences of current coastal processes and hazards and those that might be affected by land-use and/or climate change.
- 7.2 Communities have research-based information and better understand how to predict and prepare for coastal hazards
- 7.3 Communities have access to natural and social science research which identifies, quantifies and increases the understanding of the impacts of climate change on coastal processes and hazards.
- 7.4 Coastal property owners and managers, community leaders, decision-makers, and contractors understand existing erosion and flooding hazards and how future conditions may be affected by land-use and/or climate change (and sea level rise, where appropriate) and have an increased awareness of sustainable innovative mitigation measures to address present and future hazards. In the Great Lakes region, these stakeholders understand the hazards as they may be related to lake level fluctuations and other natural coastal processes.
- 7.5 Federal, State and local agencies and governments have better information on regional coastal natural processes and resources and access to tools that can be used to help identify and evaluate appropriate long term strategies for addressing existing coastal hazards and potential hazards related to climate change.

Action Outcomes

- 7.6 Communities apply best available hazards and climate change information, tools and technologies in the planning process.
- 7.7 Decision-makers apply data, policies and regulations to hazard planning and recovery efforts.
- 7.8 Communities develop and adopt comprehensive hazard mitigation and adaptation strategies suited to local needs.
- 7.9 Residents take action to reduce the impact of coastal hazards on their life and property.
- 7.10 Communities adopt a comprehensive risk communications strategy that are employed before, during and after hazard events.

Consequence Outcomes

- 7.11 Communities effectively respond to hazardous events and climate change.
- 7.12 Communities are resilient and experience minimum disruption to life and economy following hazard events.

State Performance Measures for Resilient New York Communities and Economies

- S10. Number of Sea Grant measures, tools, and techniques developed to help ensure resilient New York communities and economies.
- S11. Number of businesses that benefit from alternative marketing programs.
- S12. Number of communities able to evaluate the use of sustainable economic and environmental practices due to information and programming provided by NYSG.
- S13. Number of communities who gained knowledge regarding new practices and techniques for responding to and preparing for coastal hazardous events.

National Performance Measures for Resilient Communities and Economies

- N6. Number of communities that implemented sustainable economic and environmental development practices and policies (e.g., land-use planning, working waterfronts, energy efficiency, climate change planning, smart growth measures, green infrastructure) as a result of Sea Grant activities.
- N7. Number of communities that implemented hazard resiliency practices to prepare for, respond to or minimize coastal hazardous events as a result of Sea Grant activities.

Technical Focus Area D. *Environmental Literacy and Workforce Development in New York*

(Estimated Level of NYSG Effort/Resources is 19%)

New York Sea Grant recognizes the importance that the next generation understands and appreciates the sciences, especially those related to our coastal environments. We will promote environmental education in schools, through formal and informal education programs. In addition, NYSG will continue to ensure that students are exposed to ocean and coastal sciences through education and providing for hands-on research and in-the-field training opportunities.

NYSG Goal 8:

Improved Ocean and Great Lakes Literacy among teachers, students and the public in order to increase environmental understanding, appreciation and awareness.

Learning Outcomes

- 8.1 Formal and informal educators are provided with innovative, professional development opportunities that transfer knowledge on how to infuse marine, estuarine, and Great Lakes information into their classrooms and programs.
- 8.2 Through partnership with state, regional and national education entities, formal and informal educator have increased awareness of the Ocean Literacy Principles and the Great Lakes Principles and improve knowledge of important ecosystem issues.
- 8.3 Informal and formal educators and youth have increased knowledge and appreciation of coastal water quality and habitat issues and climate change.

- 8.4 Lifelong learners are aware of and provided with informal science education opportunities focused on coastal topics.

Action Outcomes

- 8.5 Engagement professionals use environmental literacy principles in their programs.
- 8.6 Engagement programs are developed and refined using the best available research on the effectiveness of environmental and science education.
- 8.7 Formal and informal education programs incorporate environmental literacy components.
- 8.8 Formal and informal education programs take advantage of the knowledge of Sea Grant-supported scientists and engagement professionals.
- 8.9 Formal and informal educators, students and/or the public collect and use coastal, weather and climate data in inquiry and evidence-based activities.
- 8.10 Lifelong learners make choices and decisions based on information they learned through informal science education opportunities.
- 8.11 Educators work cooperatively to leverage federal, state and local investments in coastal environmental education.

Consequence Outcomes

- 8.12 Members of the public incorporate broad understandings of their actions' potential impact on the environment into personal decisions and are inspired to be good stewards of the environment.

NYSG Goal 9:

A Future Workforce Skilled in Science, Technology, Engineering, Mathematics and other disciplines critical to local, regional and national ocean and coastal resource needs.

Learning Outcome

- 9.1 Students and teachers are aware of opportunities to participate in science, technology, engineering, mathematics and active stewardship programs.

Action Outcomes

- 9.2 Graduate students are trained in research and engagement methodologies
- 9.3 Research projects support undergraduate and graduate training in fields related to understanding, utilizing and managing our coastal resources.

Consequence Outcomes

- 9.4 A diverse workforce trained in science, technology, engineering, mathematics, law, policy or other job-related fields is employed and has high job satisfaction.

State Performance Measure for Environmental Literacy and Workforce Development in New York

S14. Number of undergraduate and graduate students trained by NYSG.

National Performance Measures for Education and Workforce Development

N8. Number of Sea Grant facilitated curricula adopted by formal and informal educators.

N9. Number of people engaged in Sea Grant supported informal education programs.

N10. Number of Sea Grant-supported graduates who become employed in a career related to their degree within two years of graduation.

National Performance Measures that are Cross Cutting

N11. Economic (market and non-market; jobs and businesses created or retained) benefits derived from Sea Grant activities.

The New York Sea Grant Institute
of State University of New York
and Cornell University

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BYLAWS, RULES OF ORDER, AND FUNCTIONS FOR AND OF THE BOARD OF GOVERNORS

(Adopted September 1995)
Article I.A.1. amended April 2008
Article I.A.2. amended April 2008

In discharging its responsibilities for the governance of New York Sea Grant Institute, the Governing Board will exercise such powers as are or may be conferred upon it by law and by relevant administrative regulation of the Institute's sponsors, Cornell University and State University of New York, in conformity with the following Bylaws, Rules of Order, and Functions.

The Bylaws summarize the specific role, powers, authority, and general responsibilities of the Board. Over the years, these responsibilities have been more specifically outlined through the Board's actions, as reflected herein.

The Bylaws must be congruent with the federal policies of the National Sea Grant College Program.

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ARTICLE I Membership, Officers, and Committees

A. MEMBERSHIP

The members of the Governing Board shall control and manage the affairs of the Board and may adopt such rules and regulations for the conduct of their meetings and the management of the Board as they may deem necessary and appropriate, not inconsistent with these Bylaws.

1. Appointment or Designation

Board members are appointed by the Chancellor of the State University of New York or the President of Cornell University. The Chancellor and President each appoint five "senior" academic officials from SUNY and Cornell, respectively, plus one lay member. *Ex officio* New York State agency members of the Board include the Commissioners of the State Departments of Environmental Conservation and Economic Development. Each Commissioner is responsible for appointing his or her representative. The Board Chair may recommend individual appointees to the Chancellor, President, and Commissioners and may request input from others prior to doing so. The appointment of a new Board member must be made by the Chancellor, President, or Commissioner in a timely manner and in writing to the current Board Chair or New York Sea Grant Director. New York Sea Grant shall maintain sample documents to facilitate this process.

With Board approval, the Chair may request the Chancellor and President to add or remove *ex officio* New York State agencies as members.

2. Term

Members of the Board shall be appointed for a term of four years, that is, to serve through four annual meetings. The Board Chair shall notify the Chancellor, President, or Commissioner prior to the expiration of a Board member's term, with a copy to the Board member. The appointment for all members is renewable, and there is no limit to the number of reappointments. The process for appointment or reappointment is described in Bylaws section I.A.1.

Notification of resignation from the Board shall be made by the member in a timely manner to the Chancellor, President, or Commissioner, as appropriate, with a copy to the current Board Chair. The Board Chair shall then request a replacement in accordance with Bylaws section I.A.1.

If a member regularly fails to attend meetings, the Board Chair (in consultation with the NYSG Director) may request the Chancellor, President, or Commissioner to name a replacement who would start a new four-year term.

3. Conflict of Interest

All BOG members shall avoid real conflicts of interest, and shall strive to avoid perceived conflicts of interest, in carrying out their duties. Individual Board members are personally precluded from submitting proposals to NYSG under open competitions.

This condition is understood to carry the following meanings:

- a) It applies if NYSG is involved in selecting the submissions to be funded and subsequent funding will be administered by NYSG, regardless of the original source of dollars.
- b) It does not apply to other individuals from their institutions.
- c) BOG members may not be part of a submission (e.g., named as principal, co-principal, or associate investigator, consultant, etc.), regardless of whether funding for him or her is requested.
- d) It does not apply if NYSG specifically invites a proposal from the BOG member, or if his or her institution as part of a sole source activity or limited competition (e.g., as in the case of setting up a special program), or if NYSG merely serves to “pass-through” funds to the BOG member from another agency or office.
- e) It does not apply to collaborative activities to which NYSG may contribute support (e.g., meetings, symposia, workshops).
- f) It does not prevent NYSG from providing financial reimbursement to BOG members for travel or other expenses.

B. OFFICERS

The officers of the Governing Board shall consist of a Chair and Vice Chair, each of whom shall be a member of the Governing Board, and a Secretary. The Chair and Vice Chair shall serve for a term of two years.

The Chair shall appoint a nominating committee to recommend the next Chair and Vice Chair at Annual Meetings which occur in odd-numbered years. The Chair shall alternate between Cornell-designated Board members and SUNY-designated Board members. The Vice Chair shall not be from the same sector as the Chair. Recommendations will be presented, by the nominating committee, to the Board at the next even-numbered year Annual Meeting. The full Board shall vote regarding endorsement of the nominating committee’s recommendations.

1. Chair

The Chair shall preside at all meetings of the Governing Board. He or she shall sign official documents and communications of the Governing Board requiring signature and shall perform other and additional acts as are generally inherent in an office of this nature.

2. Vice Chair

The Vice Chair shall, in the absence or incapacity of the Chair, perform all the duties of that office.

3. Secretary

The Secretary, who shall be the Sea Grant director, shall keep the minutes of the Governing Board; shall attend to the serving of notice of all meetings, including those of the Executive Committee; shall attend to such correspondence as may be assigned to him or her; and shall perform all duties incident to the office and other such duties as the Governing Board may designate.

C. THE EXECUTIVE COMMITTEE

An Executive Committee (the "ExCom") shall be established and appointed by the current Board Chair at the beginning of his or her term. The functions of the ExCom are to provide a readily accessible forum for the discussion of problems or opportunities that might arise during the year, and to informally advise the Sea Grant director and make recommendations to the full Board. The ExCom shall direct its attention to both short-term and long-term issues and report its findings and activities to the Board, as a whole, for discussion and action. It shall provide a mechanism for increased contact between the Board and the Sea Grant director between Annual Meetings. At any Annual or Special Meeting, the Board may authorize the ExCom to perform specific functions to be reviewed annually.

1. Membership

The ExCom shall consist of the Board's Chair and Vice Chair, as well as a member from Cornell, a member from SUNY, and a member not employed by Cornell or SUNY. ExCom members shall serve for two years coinciding with the Board Chair's term of office. The Sea Grant director, although not a member of the ExCom, shall serve as the Secretary for this group and the primary liaison between the ExCom and the Sea Grant Institute.

2. Officers

The Board Chair shall serve as the Chair for the ExCom.

D. OTHER COMMITTEES

At any Annual or Special Meeting of the Board, the Chair shall have the authority to create and appoint members to temporary special-purpose committees (e.g., search committees, nomination committees). Once such a committee has performed its function, it shall sunset.

ARTICLE II Meetings

A. THE ANNUAL MEETING

To preserve Sea Grant's continuity and effectively maintain its established role, there shall be at least one meeting of the Board of Governors each year, and that meeting shall be called the Annual Meeting.

1. Location, Timing, and Notice

The Annual Meeting shall be held in the spring or early summer of each year at locations convenient to the membership. Written notice of the time and place of such meeting shall be given by the Secretary to each Board member at least six (6) weeks before the date fixed by the notice for such Annual Meeting. The Secretary shall arrange logistical details for the meeting.

2. Designees

Each member of the Governing Board may authorize and designate an individual to act in his or her place and stead at the Annual Meeting. Such designations shall be effective only for the specific meeting for which they are made and the powers of the designee to act at said meeting may be restricted to such extent as may be desired by the member of the Board making such designation. As indicated in Article II-C below, only a member may waive the giving of notice and lapse of time therefore for a meeting of the Governing Board.

3. Quorum

A simple majority of the Governing Board shall constitute a quorum for the transaction of business at the Annual Meeting.

4. Agenda and Briefing Book

The Annual Meeting shall be open for the consideration of any matter which may be properly brought to the attention of the Governing Board. Working with the Board Chair, the Sea Grant director shall develop an agenda for the Annual Meeting.

A briefing book shall be prepared by the Sea Grant director prior to each Annual Meeting. The sections it should contain are described in the *Governing Board Policies for the New York Sea Grant Institute* document. The director shall distribute the briefing book to all Board members at least one week in advance of the Annual Meeting.

5. Order of Business

The order for conducting business at each Annual Meeting shall generally be as follows:

- a. roll call of members;
- b. additions or changes to the agenda;

- c. reports of members of the Governing Board, Board officers, the Executive Committee, Sea Grant staff (including in particular the director's report of the financial status of the New York Sea Grant program and of its activities since the last meeting), and others invited to submit matters to it;
- d. unfinished business;
- e. new business;
- f. presentation and discussion of research or special themes;
- g. approval for ExCom to take action on specific issues; and
- h. adjournment.

6. Executive Session

Any member of the Governing Board may request an executive session at any time during an Annual Meeting. Such requests are to be made to the Governing Board Chair. In executive session, only Board members shall be involved and present.

7. Minutes

The minutes of each Annual Meeting shall be prepared by the Secretary and forwarded to the entire Board for review within thirty (30) days of the meeting date. After a thirty-day review period, the minutes shall be considered an official draft. The Chair shall transmit the official draft minutes to the President of Cornell University and the Chancellor of the State University of New York, for their information. The official draft minutes will be presented at the next year's Annual Meeting for approval by the Board.

B. SPECIAL MEETINGS

Special Meetings may be held at any time or place convenient to the members and may be called by the Chair upon his or her own initiative or upon his or her receipt of a written request therefore signed by at least three (3) members of the Governing Board.

1. Location, Timing, and Notice

Special Meetings may be held at any time of year at any location convenient to the membership. Written notice of the time and place of such meeting shall be given by the Secretary to each member at least seven (7) days before the date fixed by the notice for such Special Meeting. The Secretary shall arrange logistical details for the meeting.

2. Designees

Each member of the Governing Board may authorize and designate an individual to act in his or her place and stead at Special Meetings. Such designations shall be effective only for the specific meeting for which they are made and the powers of the designee to act at said meeting may be restricted to such extent as may be desired by the member of the Board making such designation. As indicated in Article II-C below, only a member may waive the giving of notice and lapse of time therefore for a meeting of the Governing Board.

3. Quorum

A simple majority of the Governing Board shall constitute a quorum for the transaction of business at Special Meetings.

4. Agenda and Briefing Materials

Special Meetings shall be open for the consideration of any matter which may be properly brought to the attention of the Governing Board. Working with the Board Chair, the Sea Grant director shall develop an agenda for said meeting in consultation with those who requested the Special Meeting.

Briefing materials shall be prepared by the Sea Grant director prior to said Special Meetings. The sections that should be contained in these briefing materials are described in the *Governing Board Policies for the New York Sea Grant Institute* document. The director shall distribute the briefing materials to all Board members at least two (2) days in advance of said Special Meeting.

5. Order of Business

The order for conducting business at each Special Meeting shall generally be as follows:

- a. roll call of members;
- b. additions or changes to the agenda;
- c. new business;
- d. approval for ExCom to take action on specific issues; and
- e. adjournment.

6. Executive Session

Any member of the Governing Board may request an executive session at any time during a Special Meeting. Such requests are to be made to the Governing Board Chair. In executive session, only Board members shall be involved and present.

7. Minutes

The minutes of each Special Meeting shall be prepared by the Secretary and forwarded to the entire Board for review within thirty (30) days of the meeting date. After a thirty-day review period, the minutes shall be considered an official draft. The Chair shall transmit the official draft minutes to the President of Cornell University and the Chancellor of the State University of New York, for their information. The official draft minutes will be presented at the next year's Annual Meeting for approval by the Board.

C. WAIVER

Notwithstanding any provision of the foregoing, a meeting of the full Governing Board may be held at any time and at any place within the state of New York, and any action may be taken thereat, if notice and lapse of time be waived in writing by each member of the Governing Board, personally.

D. EXECUTIVE COMMITTEE MEETINGS

The ExCom shall arrive at a consensus on resolution of, or recommendations regarding, issues as assigned and shall present them to the full Board for consideration and official action at the next Annual Meeting. If the Board wants to authorize the ExCom to take action on a specific issue, this shall be done at a full Board meeting. With exception of the two categories listed below, the ExCom will decide itself how to best conduct its business.

1. Designees

Each member of the ExCom may authorize and designate an individual to act in his or her place and stead at ExCom Meetings. Such designations shall be effective only for the specific meeting for which they are made and the powers of the designee to act at said meeting may be restricted to such extent as may be desired by the member of the ExCom making such designation.

2. Minutes

The minutes of each ExCom Meeting shall be prepared by the Secretary and forwarded to the ExCom Chair for review within thirty (30) days of the meeting date. After approval of the content by the Chair, the minutes shall be transmitted to all members of the ExCom. The approved minutes shall appear in the following year's Annual Meeting briefing book.

ARTICLE III **Major Functions**

The role of the Governing Board is to preserve New York Sea Grant's continuity and to establish its policies. Its major functions all contribute to the fulfillment of this role.

A. SELECTION AND EVALUATION OF SEA GRANT DIRECTOR AND APPROVAL OF SEA GRANT OFFICER POSITIONS AS RECOMMENDED BY DIRECTOR

Officers of New York Sea Grant include those persons whose titles contain the term "director". Current titles of officers include: director, associate director / extension program leader, and assistant director.

The Board shall approve creation and abolishment of the positions of officers as it deems appropriate or at the recommendation of the Sea Grant director. It does so through the process of approving creation or abandonment of the title. The Board does not hire or terminate employment of officers.

1. Responsibilities Regarding Appointment and Annual Review of Director

The director reports to the Board of Governors in matters of New York Sea Grant policy and operation and to the provost of SUNY Stony Brook in matters of Stony Brook employment policies and resources. The Board chair will work with the director to prepare an evaluation of the past year and a performance program for the coming year. These will be presented to the provost.

If it becomes necessary to replace the Sea Grant director, the Executive Committee will appoint a search committee responsible for identifying candidates, conducting interviews, and making recommendations to the Board as to a candidate(s) suitable to fill the position.

At the completion of the search process, in consultation with the Board, the Board Chair shall recommend a candidate or candidates to the Chancellor of the State University of New York and the President of Cornell University. Terms to be offered the new director will be negotiated between the Board Chair and appropriate administrators at the State University of New York, Cornell University, and the campus/department where the new director might be offered, or already hold, a faculty appointment.

Generally, the appointment would be for five (5) years and would follow agreed upon policies for annual review and reappointment evaluation which is the responsibility of the Board Chair. One (1) year prior to the end of an appointment, it is the responsibility of the Board to determine whether or not to recommend reappointment of the director, subject to approval by the Chancellor of the State University of New York and the President of Cornell University.

2. Responsibilities Regarding Interim Absence of Director

In the event the Sea Grant director plans to vacate the position, he or she shall recommend to the Board that the associate director or, if circumstances warranted, the assistant director be appointed to assume the duties of acting director for a specified duration. Approval from the Board Chair is necessary.

The Board shall initiate procedures at the institution where the Institute's main administrative offices are housed to ensure that the associate and assistant directors would be given signatory authority should either of them be required to assume acting director responsibilities.

In the event that the directorship of New York Sea Grant be unexpectedly vacated, the following shall occur:

- a. The associate director will notify the Governing Board Chair of the absence and circumstances thereof, with follow-up confirmation in writing.
- b. The associate director will notify New York Sea Grant's Program Monitor within the National Sea Grant College Program of the absence.
- c. Pending actions by the Governing Board, and the circumstances at the time of the vacancy, either the associate director or the assistant director will be appointed as the acting director. Appropriate documentation of the signatory authority for the acting director shall have been lodged with the Research Foundation of SUNY and with the National Sea Grant College Program.
- d. The acting director will assist the Governing Board Chair in preparing appropriate notifications of Board actions to replace the director in order to meet the requirements of the National Sea Grant College Program. These are set forth in the *Sea Grant Compendium* ("Green Book"), Section 2-A-1.

3. Responsibilities Regarding Position of Associate Director

The associate director (also program leader for the extension program) reports jointly to the Sea Grant director and the director of Cornell Cooperative Extension (CCE).

If the associate director's position becomes vacant, the Sea Grant director shall notify the Governing Board of his or her intention to refill the position or to restructure New York Sea Grant to accommodate the vacancy. A proposal for refilling the position would be developed jointly by the Sea Grant director and the CCE director, and would require approval of only the Board Chair. A proposal for restructuring would require Governing Board approval.

Annual review and reappointment procedures for the associate director shall be handled by the Sea Grant director and CCE director in accordance with Cornell University personnel policies and with input from the ExCom of the Board of Governors.

4. Responsibilities Regarding Position(s) of Assistant Director

Positions of assistant director in New York Sea Grant shall be filled by the director, in accordance with appropriate University policies, without action from the Board. Governing Board approval is required, however, for the creation or abandonment of such a position.

B. PRIORITIZATION OF PROGRAM CONTENT

The Board has the authority to endorse policies regarding program content as recommended by the Sea Grant director. Said policies are summarized in the document *Governing Board Policies for the New York Sea Grant Institute*.

C. ALLOCATION OF RESOURCES

The Board has the authority to set policies, and approve policy recommendations made by the Sea Grant director regarding allocation of New York Sea Grant funds. Said policies are summarized in the document *Governing Board Policies for the New York Sea Grant Institute*.

The Board shall conduct annual reviews of the Sea Grant budget whereby it approves the allocation of funds and reviews sources of funds, including matching funds. Information for said review shall be provided by the Sea Grant director's fiscal report in the Annual Meeting briefing book.

D. ESTABLISHMENT AND COORDINATION OF SEA GRANT POLICIES

VIS-A-VIS THE INSTITUTIONS

The Board shall define New York Sea Grant policies governing relationships with the institutions of Cornell University, State University of New York, and others. Said policies are summarized in the document *Governing Board Policies for the New York Sea Grant Institute*.

ARTICLE IV **Amendments**

These *Bylaws, Rules of Order, and Functions for and of the Board of Governors* may be amended or repealed by the Governing Board at any duly called Annual or Special Meeting of the Board; provided, however, that notice of any proposal to repeal or amend the same shall be given in writing to each member of the Governing Board not less than seven (7) days prior to the meeting at which action thereon is to be taken.

The New York Sea Grant Institute
of State University of New York
and Cornell University

121 Discovery Hall
Stony Brook University
Stony Brook, NY 11794-5001

GOVERNING BOARD POLICIES FOR THE NEW YORK SEA GRANT INSTITUTE

Current policies of the New York Sea Grant Institute are summarized within this document. These policies must be congruent with federal policies of the National Sea Grant College Program.

This document also serves as a companion piece to the *Bylaws, Rules of Order, and Functions for and of the Board of Governors* document.

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I. PRIORITIZATION OF PROGRAM CONTENT

Setting overall programmatic direction(s) for New York Sea Grant shall be the responsibility of the Sea Grant director in consultation with Sea Grant staff, the Program Advisory Council, the National Sea Grant College Program, and others, to be approved by the Governing Board.

The primary criteria for selection of all projects should be the quality of the research, extension, communications, education and training, or management activity; its relation to the objectives and to the plan of the development of New York Sea Grant; and effective utilization of the resources of the institutions of New York State.

II. BUDGET ISSUES AND RESOURCE ALLOCATION

The Board shall be responsible for reviewing and approving the general allocation of funds among the five basic activities of New York Sea Grant (research, education and training, extension, communication, and management).

A. SOURCES OF FUNDING

Data on all sources of funding will be presented to the Governing Board in the Annual Meeting's briefing book report of the Sea Grant director. Sea Grant is free to seek funding for appropriate activities from all federal, state, and private sources according to guidelines set out by the National Sea Grant College Program in the *Sea Grant Compendium* ("Green Book").

B. MATCHING FUNDS

The federal Institutional Proposal shall show matching funds of at least the 50% federal requirement for match.

If matching funds amounting to 33 1/3% of the total cost are not provided by a proposed research project, the Sea Grant director has the authority to reject the proposal on this basis alone.

Continued (i.e., subsequent year) or new funding of any Sea Grant project with which a principal investigator is affiliated will be withheld until his or her previous, outstanding match requirements are fulfilled or resolved. Ten (10) percent of any Sea Grant project's budget will be withheld from final payment, until all requirements have been met. If a project's proposed amount of matching funds is not met, the federal share of the project's award may be reduced retroactively.

C. ALLOCATIONS TO ACTIVITIES

In order not to disadvantage or discourage Sea Grant staff or other investigators from seeking additional outside funding for specific projects, and to provide for a reasonable distribution of resources among program elements, funding for the extension program shall be maintained at approximately 33% of Sea Grant's combined federal and state awards for general programmatic activities. Additional funds received for individual, special projects will be used to support those projects, regardless of how this may affect total funding allocated to different program elements; they will not be considered as part of the "base" used in the 33% calculation.

D. OTHER BUDGET POLICIES

1. Pertaining to the Research Program

- a. Principal and associate investigators with appointments providing 9 or more months of support annually are generally not allowed to receive more than 2 months' total salary from New York Sea Grant per year. Other eligible principal and associate investigators will generally be allowed to receive only up to 6 months' salary from New York Sea Grant per year. These guidelines may be relaxed under exceptional circumstances.
- b. Approval from New York Sea Grant is required for a project to incur 90-day pre-award costs.
- c. Purchase of equipment costing \$5,000 or more requires New York Sea Grant approval, if not described in the original proposal.
- d. Purchase of equipment within 90 days from the project's termination date requires New York Sea Grant approval.
- e. Foreign travel on a project requires New York Sea Grant approval, if not described in the original proposal.
- f. To help ensure the timely completion of New York Sea Grant funded projects, the normal duration of acceptable no-cost extensions should not exceed one-third of the project's original schedule. Under unusual circumstances this could be extended, but the case would have to be made after a demonstrated effort by the investigator to finish by the end of the "1/3-extension".
- g. Due to changes regarding health insurance availability for Scholars, the stipend level may now vary depending on the prevailing rates of the student's department at the time of proposal submission.

2. Pertaining to the Sea Grant Extension Program

A cost recovery policy was approved in which user fees are defined as those charges made to recoup the cost of materials and other support programs exclusive of professional salary time. In this way, the specific audience benefiting from an educational initiative will incur some of the costs for developing and presenting it. Revenues derived from programs for specific client groups should be used to service similar clients in the future.

To maintain Sea Grant's non-profit status, it is important that Sea Grant field staff do not intentionally seek to generate income (i.e., have revenues exceeding expenses). It is admissible for revenues to exceed the cost of single educational meetings if it is unintentional. Each Sea Grant extension specialist is required to keep written documentation of how "user" fees are formulated until audits occur. Audiences should be informed that meeting fees will be used to defray costs such as travel, room rental, handout materials, and refreshments. It is important to stress that these are not consulting fees.

III. POLICIES REGARDING THE CONDUCT OF ACTIVITIES

A. THE RESEARCH PROGRAM

1. Sabbatical Leaves for Research Personnel

An investigator planning a sabbatic leave or a leave of absence should inform Sea Grant as soon as possible. In general, New York Sea Grant does not support sabbatical research nor research activities while an investigator is on leave *unless* it is clearly beneficial to the investigator's research and the interests of Sea Grant to make such an award. Leaves taken without prior notification to Sea Grant while the grant is in effect may be the basis for immediate termination of support. New York Sea Grant will entertain arrangements for continued support of graduate students who are continuing their studies while an investigator is on leave, providing that adequate arrangements are made and confirmed in writing regarding the supervision of the student's research.

2. Documentation of Progress, Results, and Impacts

The assistance of a principal investigator in providing Sea Grant with timely and meaningful documentation of the impact of his or her work will be considered in evaluation of future proposal submissions. Furthermore, continued or new funding of any Sea Grant projects with which a principal investigator is affiliated will be withheld until previous progress, completion, and impacts/benefits reports requirements are fulfilled.

B. EDUCATION AND TRAINING

1. Awards for Graduate Study

The Governing Board favors Sea Grant Scholar Awards (née traineeships) over research assistantships, and calls for their establishment. The scholarships entail eligibility for tuition waiver, but are not in themselves such a guarantee.

2. Research Proposals Submitted by Graduate Students

Except as the Board may decide otherwise, research proposals submitted by graduate students independently of their faculty advisors are not to be accepted by Sea Grant.

C. THE EXTENSION PROGRAM

The Governing Board recommends that Sea Grant Extension's regional specialists develop appropriate relationships with a host campus to improve interrelationships between the community and the faculty, and believes that extension personnel will make a substantial contribution to the campuses on which this relationship exists. It is therefore recommended that State University campuses and Cornell University make space available for housing of Sea Grant Extension personnel in recognition of the contribution that these personnel will make in furtherance of community relations.

Additional relationships are urged between Sea Grant Extension personnel and local Cooperative Extension offices, which are also urged to meet Sea Grant Extension housing needs, as possible.

IV. BOARDS

A. BOARD OF GOVERNORS

Details regarding the intent and operation of New York Sea Grant's Governing Board are contained in the document entitled *Bylaws, Rules of Order, and Functions for and of the Board of Governors*. Additional policies regarding briefing materials for meetings are described below.

The briefing book for each Annual Meeting of the Board of Governors shall contain sections as follows:

- a. agenda;
- b. list of current Board members and officers;
- c. minutes of the previous Annual Meeting, and minutes of any Special Meetings and/or ExCom meetings since the previous Annual Meeting;
- d. reports (with summaries) from the director, associate director, and committees;
- e. action items; and
- f. appendices.

Briefing materials for Special Meetings of the Board of Governors shall contain sections as follows:

- a. agenda;
- b. short presentations (with summaries) of the action items that prompted said meeting; and
- c. appendices, if any.

B. ADVISORY BOARDS

The Sea Grant director shall seek external guidance from a broadly based Program Advisory Council, the policies for which must be approved by the Governing Board.

V. AMENDMENTS

These *Governing Board Policies for the New York Sea Grant Institute* may be amended or repealed by the Governing Board at any duly called Annual or Special Meeting of the Board; provided, however, that notice of any proposal to repeal or amend the same shall be given in writing to each member of the Governing Board not less than seven (7) days prior to the meeting at which action thereon is to be taken.