

COASTtoday

A Newsletter from the New Jersey Sea Grant Consortium

NJSGC Awarded Special NOAA Funding For Post-Sandy Storm Related Research



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The New Jersey Sea Grant Consortium (NJSGC) has received federal funding for two major projects that will address community climate adaptation and support work to increase awareness and implementation of the best possible ways to nourish beaches and dunes. Both proposals were prepared and submitted by NJSGC's Director of Research and Extension, Dr. Peter M. Rowe, who will oversee the implementation of both projects.

The community climate adaptation initiative award focuses on projects that best identify and address the vulnerabilities a coastal community may face adapting to climate change and would produce demonstrable outcomes by the end of the project period. It will also involve active partnership with local (county or municipal) leadership, and includes cooperation with relevant state, NOAA, and other Federal agencies, or other appropriate organizations. Only four out of twenty-six proposals submitted to the National Sea Grant Office were selected and will share the \$500,000 grant pool.

The NJSGC project selected includes a collaboration between coastal flooding scientists and Jersey City planners to develop and test several options for adapting the region's urban coasts to

flooding and sea level rise. The project will lay out a plan to leverage existing storm surge modeling to quantify the performance of a set of protective measures for Jersey City, including a variety of grey and green options such as storm surge barriers, deployable barriers, and wetlands. The framework can be utilized for many other U.S. coastal regions – anywhere that hydrodynamic models are already being used to simulate storm surges or map flood zones.

The dune project funded through a NOAA Sea Grant Sandy Rapid Response Fund initiative builds on initial data from beach surveys after the storm which show that communities with wide beaches or a mature dune system suffered less damage



than those communities with narrow beaches or no dune system. This outreach effort will include county workshops with community representatives, one-on-one meetings with coastal communities and the development of a dune manual to assist communities in their beach and dune nourishment planning. The NJSGC will partner with its Coastal Processes Specialist, Jon Miller, Ph.D. of Stevens Institute of Technology, Chris Miller of the USDA NRCS Cape May Plant Materials Center, Louise Wootton, Ph.D. of Georgian Court University and Michael Peek, Ph.D. of William Patterson University to implement the dune outreach program.





Summer Camp Explores Superstorm Impacts on Sandy Hook



This summer the young participants at New Jersey Sea Grant Consortium Marine Science Camp sessions got a first-hand look at how Sandy Hook's coastal environment rebounded from Hurricane Sandy last fall. During their field excursions to beaches at Sandy Hook Bay, the youngsters learned about sand and the structure and function of dunes and how the park's abundant natural features helped limit storm damage.

The first year-after-Sandy camp not only gave children a marine science foundation, through fun hands-on activities, but had counselors answering hurricane-related questions raised by the campers and pointing out what was or wasn't around before the storm. Ultimately the lesson learned at camp this year could help future generations better prepare for megastorms like Sandy.

This camp was showcased in a special feature article in the *Star-Ledger* on August 7th.

The Wright Stuff

Believe it or not many students, teachers, administrators and parents from the Ripley, Union, Lewis, Huntington (RULH) School District in Ohio got their first glimpse of the Atlantic Ocean this summer. It was all part of a special week-long program coordinated by the New Jersey Sea Grant Consortium (NJS GC), Wright State University of Ohio and Consortium research scientists.

From June 17th through June 21st, nearly two dozen 7th and 8th grade students became acquainted with the marine habitats of Sandy Hook and built a cohesive understanding of the science of the ocean, our dependence on coastal habitats, and the role and responsibilities humans have in their life-giving systems. The participants saw for themselves the effect of the forces of nature first hand when they visited areas severely affected by Superstorm Sandy and witnessed ongoing recovery efforts.

Each day involved outdoor instruction and inquiry-based exploration in



Sandy's Hook's maritime environments and local off-site destinations followed by hands-on learning activities and laboratory-style experiments in NJS GC's Sandy Hook lab.

The trip from Brown County, Ohio to Sandy Hook was funded by the National Science Foundation and the students' school district. The week was one part of a two-year effort between Wright State and the RULH School District to provide professional development opportunities for educators.

Fisheries Fellowship Awarded to New Jersey Student

Since 1999, the NOAA National Sea Grant Office and NOAA Fisheries have sponsored a Graduate Fellowship Program to support Ph.D. candidates in pursuit of careers in either population dynamics or marine resource economics, to increase available expertise in these fields, to foster closer relationships between academic scientists and NOAA Fisheries, and to accelerate career development of graduate students through real-world experience. Each fellow selected is required to work closely with an expert from NOAA fisheries who serves on the fellow's committee and provides access to research data sources and working/laboratory space in a NOAA fisheries research facility and on research vessels. Applications are submitted to and administered by the state Sea Grant Program.

The New Jersey Sea Grant



Consortium is pleased to announce that its candidate, Christopher Free at Rutgers Institute of Marine and Coastal Sciences, has been awarded a 3-year graduate fellowship in population dynamics. He and his advisor, Dr. Olaf Jensen, proposed work to evaluate specific fisheries population assessment methods. The work will be based on the rationale that many fisheries in the United States and around the world remain unassessed and unmanaged, not because they are unimportant economically or ecologically, but because insufficient resources and data exist to drive a complex stock assessment. Mr. Free's mentor will be Dr. Jonathan J. Deroba, Research Fishery Biologist at the National Marine Fisheries Service Northeast Fisheries Science Center in Woods Hole, Massachusetts. The total amount for the 3-year award, which begins in 2013 is \$115,500 including matching funds.

High School Students Experience Culture Stock

Working this summer with Dr. Peter Rowe, the New Jersey Sea Grant Consortium's Director of Research and Extension, students from the Marine Academy of Science and Technology (MAST) participated in the second year of a horseshoe crab culturing project. Tessa Vande Creek, Jane Bikker and Caitlin Loh collected fertilized eggs in early June from Horseshoe Cove at



Sandy Hook by digging into inter-tidal sand. After setting up a growth facility at New Jersey's Sea Grant Consortium's (NJSGC) headquarters, the students maintained a rotation schedule to conduct the project.

The students modified their approach based on last year's results. This year, one of the main focuses of the project was food concentration. They chose to use dry pellet food, which

provided the baby horseshoe crabs a complete diet. To prevent temperature spikes which were a major issue last year, the project was moved into the NJSGC's basement lab space. Their adjustments proved successful, since the survival rate tripled from 12 to 36.

While the culturing process is somewhat clear-cut, the procedures required an enormous attention to detail. This included keeping track of the mortality rate, counting molt cycles and keeping the horseshoe crab's aquatic environment clean. The students dedicated countless hours diligently caring for the horseshoe crabs. On August 26th, the surviving population of horseshoe crabs was released back into Sandy Hook Bay where they will hopefully begin their journey towards maturation.

The overall mortality rate was higher than the students would have liked but that's a vital part of the course of research. According to Dr. Rowe, the main purpose of the project is to help the students expand their scientific awareness through utilizing the scientific process.



Tweed Scholarship Fundraising Goes Hi-Tech

The New Jersey Sea Grant Consortium (NJS GC) is hoping to raise some additional funding through a newly created website: <http://www.gofundme.com/StewTweed-Scholarship> to help sustain its Stew Tweed Fisheries and Aquaculture Scholarship. In 2013, in response to the challenging economic climate and the escalating costs of higher education, NJS GC increased the monetary value of each award by \$500.00. The graduating high school senior now receives \$1,500 while the undergraduate/graduate award winner receives \$2,000 to use toward his or her education. Increasing the scholarship will require more innovative and focused fundraising in order for the project to meet its ten year survival goal. NJS GC is currently developing several special events and activities to support the fund but thought the user-friendly donation site would appeal to a broad range of people, especially in today's technology-oriented environment. Anyone who would like to make a donation in any amount, small or large, can go to the web page and make a safe secure contribution to the scholarship fund in less than a minute. The website also takes advantage of social



media opportunities and word-of-mouth marketing. One big advantage to using this web-based fundraising site is the fact that it can reach a large share of Stew's friends, family, former colleagues and support base further south in Atlantic and Cape May Counties and all along the Delaware Bay.

CURRENT EVENTS

Fishing for Feedback

The New Jersey Sea Grant Consortium (NJS GC) and Rutgers Cooperative Extension have partnered for a second season with Sea Salt Community Supported Agriculture (CSA) at B&B Farms in Galloway Township, New Jersey, to help expand regional markets for local New Jersey aquaculture products.

NJS GC will be creating and implementing tools this year to help assess the overall success of the project. Customer and producer satisfaction surveys will be conducted at the end of the season in late October to gauge the program's success among customers and identify areas for improvement as the program continues to develop into other CSAs next season.

The project began in 2012 when Sea Salt CSA offered its current shareholders the chance to purchase a seafood share in addition to their traditional shares of produce. This year, the program was extended further, allowing other New Jersey's coastal residents the opportunity to enjoy fresh, responsibly harvested, locally-sourced seafood and to simultaneously

support the livelihoods of small-scale fishermen and aquaculturists.

Because of legal and regulatory requirements associated with seafood distribution in New Jersey, the program coordinators chose to source all shares from certified seafood distributors that sell locally harvested and caught sustainable seafood. This expands local marketing opportunities for shellfish producers in New Jersey.



22 Magruder Road
Fort Hancock, NJ 07732
732-872-1300
Fax 732-291-4483
<http://www.njseagrants.org>

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