



Fall 2022

2023 Jersey Shore Photo Contest printed calendar is available

A beautiful 2023 calendar which contains winning photos from the Jersey Shore Photo Contest has been printed. It was designed by Rory Joyce, Communications Associate at New Jersey Sea Grant Consortium.

To receive a copy, please email Samantha Kreisler, Communications Specialist at skreisler@njseagrants.org

The winning photos will also be available as downloadable desktop calendars. Visit njseagrants.org and click on Desktop Calendars.

Sea Grant Staff on the Move

Sea Grant Week attended by New Jersey Sea Grant

This Fall New Jersey Sea Grant Consortium employees Dr. Peter Rowe, Michael Danko, Diana Burich, and Samantha Kreisler attended Sea Grant Week in Cleveland, Ohio. Cleveland is a thriving Great Lakes city that has transformed from its industrial past to a regional center for arts, entertainment, and outdoor recreation. This city has weathered many storms: from a burning river that inspired the Clean Water Act of 1972 to Superstorm Sandy in 2012, and has worked hard to recover and become more resilient. It's an inspiring story that made a perfect setting for Sea Grant Week 2022.

The week brought opportunities for networking, building partnerships, and connecting with Sea Grant colleagues from across the country from Guam to Puerto Rico. Outcome-oriented breakout sessions and workshops offered a chance to share best management practices, grow professionally, and strengthen existing communities of practice.

The schedule also included excursions designed to showcase Sea Grant partners, Ohio Sea Grant's work across the state, and of course a chance to get to know Cleveland and Lake Erie better.



NJSGC's Diana Burich addressed the conference attendees.



Samantha Kreisler (left) and Brooke Carney of the National Sea Grant Program participate in a Walking Tour of the Lower Cuyahoga River Area of Concern (AOC).



Welcome Reception for Sea Grant Week.



Samantha Kreisler (left) stands with Stephanie Díaz Pérez of Puerto Rico Sea Grant.



Assistant Director of Extension Michael Danko (left), Communications Specialist Samantha Kreisler, Education Director Diana Burich, and Director Peter Rowe at Sea Grant Week in Cleveland, Ohio.

Sea Grant Staff on the Move

NJSGC Communications Specialist Samantha Kreisler attends Sea Grant Academy

This past September, staff members from 34 different Sea Grant programs across the United States, including our very own Communication Specialist Samantha Kreisler, attended Sea Grant Academy. The second stretch of a week-long training event, hosted by Oregon Sea Grant, took place in Jekyll Island, Georgia. The first session took place in Annapolis, Maryland March of 2022.

The Sea Grant Academy program was created as a professional development workshop to give Sea Grant employees important training and background information in a variety of fields, advancing working knowledge, and the advancements of all Sea Grant programs. Samantha had the opportunity to hear from a variety of non Sea Grant presenters including Ben Carswell, Director of Conservation

and Sustainability of the Jekyll Island Authority and Victoria Smalls, Executive Director of the Gullah Geechee Cultural Heritage Corridor. In addition, presentations from employees of the University of Georgia Marine Extension and Georgia Sea Grant included Director Mark Risse, Associate Sea Grant Director Mona Behl, Associate Marine Education Director Anne Lindsay, Public Service Assistant & Associate Director Bryan Fluech, Shellfish Lab Director Tom Bliss, and Educator and Intern Coordinator Nina Sassano. The group also had the chance to learn about and explore the UGA Marine Extension and Georgia Sea Grant's education program and the island's natural beauty and culture on field trips like trawling and beach walk.



Samantha taking part in a Virtual Reality education exercise.



The Sea Grant Academy group counts and sorts shrimp, fish, and other marine organisms as part of a trawl education program.



Tom Bliss, Shellfish Lab Director at University of Georgia Marine Extension and Georgia Sea Grant showing the group oyster's from the shellfish lab.



View of Driftwood Beach. The beach and its iconic driftwood which was once a maritime forest, formed as a result of decades of erosion.



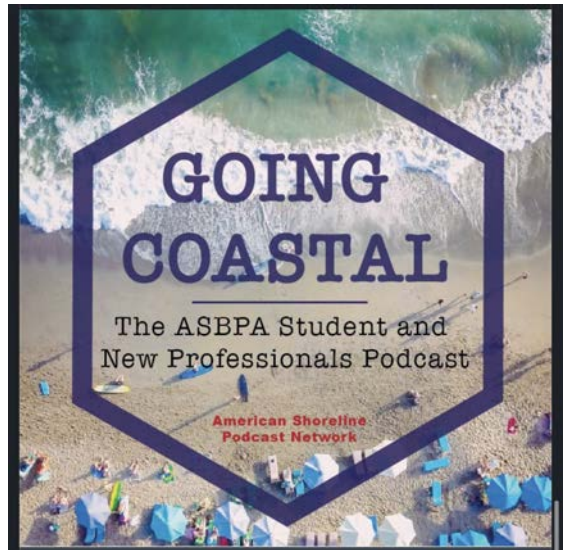
View from the Sea Dawg trawler.

NJSGC in Your Community

Dr. Jon Miller, Research Associate Professor at Stevens, and the New Jersey Sea Grant Coastal Processes Specialist lead a webinar entitled Living Shorelines in the Decade Since Sandy: Lessons Learned and Implications for Future Design on October 24, 2022. During this he reviewed the progress made over the past decade along both coasts and offers a perspective on how the lessons of the past can inform projects of the future. The full recording can be found here: https://www.youtube.com/watch?v=fkp52_NrVTo&feature=youtu.be. He also presented at the Northeast Shore and Beach Preservation Association's event Hurricane Sandy – 10 Years Later and the NJ Association of Floodplain Management: Hurricane Sandy 10th Anniversary: Progress Made and Ongoing Challenges.

Urban Coast Institute Associate Director and NJSGC Coastal Community Resilience Specialist Dr. Tom Herrington was the featured speaker on Sept. 26 in a webinar series offered through the Rutgers Cooperative Extension entitled "Weathering the Storm: Increased Resiliency a Decade After Superstorm Sandy." Dr. Herrington delivered the presentation "Beyond Recovery from Sandy: Setting the Stage for Future Community Resilience." See video at: <https://www.youtube.com/watch?v=4WTS2Fuc2zw>.

On October 25-27, 2022 at the Hard Rock Casino and Hotel in Atlantic City the **New Jersey Association of Floodplain Management (NJAFM) held their annual conference**. This year's theme was Hurricane



Dr. Jon Miller has been running an incredible podcast called "Going Coastal" with a recent episode featuring the University of Hawai'i Sea Grant Program. Give the podcast a listen here: <https://www.coastal-newstoday.com/curator/jon-miller-heather-wade-and-marissa-torres>

Sandy 10th Anniversary: Progress Made and Ongoing Challenges featuring speeches from Dr. Jon Miller and Laura Kerr.



Audience of the NJAFM 2022 Conference.



Dr. Miller presenting on Living Shorelines in the Decade Since Sandy: Lessons Learned and Implications for Future Design.



Laura Kerr presented on the New Jersey Coastal Resilience Collaborative.

NJSGC in Your Community



NJSGC Education Staff Mindy Voss (left) and Julie Lang attend the New Jersey Science Convention on October 18th and 19th, 2022. The New Jersey Science Convention is a professional development opportunity in the Mid-Atlantic area for science educators, including teachers, administrators, and student interns. The theme of this year's conference was "Helping All Students Find Their Voice."

Dr. Jon Miller and Dr. Tom Herrington presented at the Northeast Shore and Beach Preservation Association's (NSBPA) Conference on October 6-7, 2022 in Atlantic City, NJ.



Dr. Tom Herrington presented at the conference.

Snacks with Scientists took place on Friday, October 21 at High Technology High School (HTSH) in Lincroft. The event, organized by the school's female students, is an annual HTHS event that brings female-identifying STEM professionals and female-identifying middle school students together. The goal of this event is to open young women to the world of STEM and help reduce the ever-widening gender gap in STEM careers. NJSGC staff participated as STEM mentors: Diana Burich (Director of Education), Laura Kerr (Coastal Resilience Specialist) & Kanesha Jones (NJSGC Board of Trustee Member).



Pictured above, top to bottom, Kanesha Jones, Diana Burich, and Laura Kerr teach groups of students at Snacks with Scientists.

Dr. Daphne Munroe is investigating the relationships of horseshoe crabs, red knots and shellfish farms in the Delaware Estuary

The Delaware Bayshore is a critical stopover site for several globally declining shorebirds, including the *rufa* subspecies of the red knot (*Calidris canutus rufa*). Shorebirds visit Delaware Bay during their northward spring migration where they forage on lipid-rich eggs deposited by spawning horseshoe crabs (*Limulus polyphemus*) to gain enough weight to reach breeding grounds in the Arctic. Horseshoe crab abundance, and consequently the eggs they lay, declined relative to historic abundances in the 1990s and was associated with declines in shorebird populations.

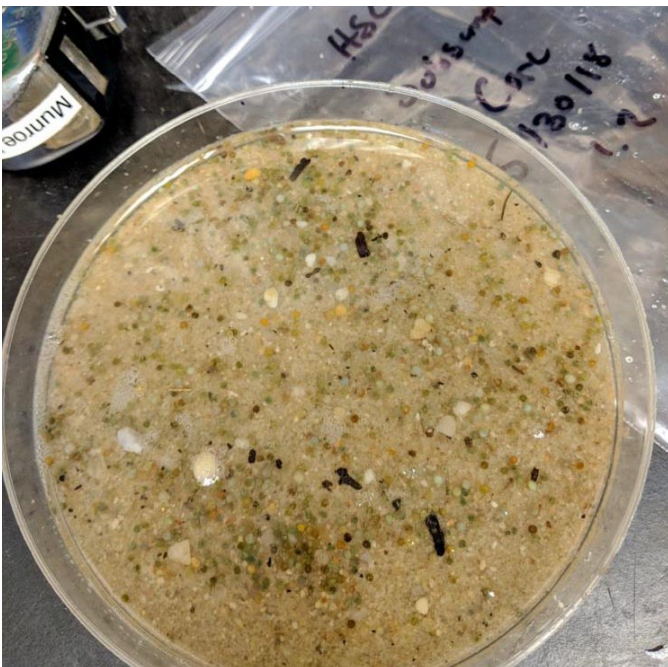
The low crab egg availability, coupled with potential climate change-induced seasonal shifts in red knot breeding and crab spawning, placed additional pressure on red knots needing to refuel quickly while stopping in Delaware Bay. Oyster aquaculture along the lower Delaware Bay occurs within some portions of the tidal flats used by migratory shorebirds and horseshoe crabs. The co-location in time and space of these two iconic and ecologically important species and oyster farm activities present a unique



socio-economic-ecological interaction that needs to be understood for co-management of the wild species and farms activities.

Previous New Jersey Sea Grant funded projects have separately examined interactions of birds and oyster farms, and horseshoe crabs and oyster farms. The studies showed that birds responded most strongly to the presence of other shorebirds rather than farms, and that crabs were able to pass through farms to access spawning habitat. While both projects contributed important information about direct interactions of farms on these species, they did not address three-way ecological interactions among oyster farms, horseshoe crabs, and red knots. It is understood that red knot distribution in the Cape Shore region will be influenced by the distribution of horseshoe crab eggs, a high-quality food resource. It is also evident that horseshoe crab migration to spawning beaches is not impeded by farms. Thus, it is expected that the distribution of high-quality red knot food resources – crab eggs on the surface of the beach – should not be affected by the presence of farms. This project aims to address whether oyster aquaculture, either the farm gear or the human activities on the farm, disrupts the bird's ability to exploit these important egg resources.

Dr. Daphne Munroe is a Rutgers Associate Professor working at the Haskin Shellfish Laboratory. Her research is entitled Spatial and Temporal Patterns in Shorebird Distribution in Relation to Horseshoe Crab Eggs. Also working with her on this project were Dr. Brooke Maslo, Dr. David Bushek and Elizabeth Bouchard, all at Rutgers.



Fall into Fellowships

The application period for the 2024 Knauss Marine Policy Fellowship is now open.

The application period for the 2024 Knauss Marine Policy Fellowship is now open. The fellowship provides a one-year, paid experience for highly qualified early career professionals to work on issues related to coastal, marine and Great Lakes science and policy in offices within the executive or legislative branch of government in Washington, D.C.

Graduate students interested in marine, coastal, and Great Lakes science and policy should explore the information about the fellowship as soon as possible and reach out to New Jersey Sea Grant Consortium at least one month prior to the February 16, 2023 deadline.

To be eligible for the 2024 fellowship (which lasts February 1, 2024 through January 31, 2025),

- A student must be enrolled towards a degree in a graduate program at any point between the onset of the 2022 Fall Term (quarter, trimester, semester, etc.) and February 16, 2023;
- The student's graduate degree program must be through an accredited institution of higher education in the United States or U.S. Territories;
- Students are eligible regardless of nationality; domestic and international students at accredited U.S. institutions may apply; and
- Applicants must have an interest in ocean, coastal and

Great Lakes resources and in the national policy decisions affecting those resources.

Please share this opportunity with colleagues, friends and potential applicants!

Learn more about becoming a Knauss Fellow

Get started on your application with:

- 2024 Knauss Fellowship Student Guide
- Student Applicant Guide to Sea Grant Fellowships

**"Knauss 101" Zoom Session
with NJSGC's Director
Dr. Peter Rowe**

December 14, 10:00 am Eastern Time

Join NJSGC's Dr. Peter Rowe for a "Knauss 101" Information Session. Learn about the fellowship, NJSGC, and ask questions during the Q&A.

For more information, please contact skreisler@njseagrant.org

Interested persons should "register in the link below".

#NJSGC

The National Marine Fisheries Service (NMFS)-Sea Grant Joint Fellowship Program in Population and Ecosystem Dynamics and Marine Resource Economics

is designed to help Sea Grant fulfill its broad educational responsibilities and to strengthen the collaboration between Sea Grant and the National Marine Fisheries Service (NMFS). Since 1990, Sea Grant and NMFS have partnered to train students through this joint fellowship program in two specialized areas: population and ecosystem dynamics as well as marine resource economics. Population and ecosystem dynamics involve the study of fish populations and marine ecosystems to better assess fishery stock conditions and dynamics. The NMFS-Sea Grant Joint Fellowship Program in Population and Ecosystem Dynamics and Marine Resource Economics places Ph.D. students in research-based fellowships that provide support for up to three years. The program is designed to fulfill workforce development needs identified by the NOAA National Marine Fisheries Service (NMFS) and since 1999, has provided opportunities for 159 Ph.D. students.

The goals of the NOAA Fisheries/Sea Grant Fellowship Program are:

To encourage qualified applicants to pursue careers in either population and ecosystem dynamics and stock assessment or in marine resource economics

To increase available expertise related to these fields

To foster closer relationships between academic scientists and NOAA Fisheries

To provide real-world experience to graduate students and accelerate their career development.

Get started on your application with:

2023 NMFS-Sea Grant Fellowship Student Guide
Student Applicant Guide to Sea Grant Fellowships

Applications from eligible PhD students are due to NJSGC by 5PM on January 25, 2023. Interested candidates should contact Dr. Peter Rowe, Executive Director NJSGC for more details. Please forward this opportunity to interested PhD students.

Fall into Fellowships

Application Now Open for 2023 Coastal Management and Digital Coast Fellowship Program

The NOAA Office of Coastal Management (OCM) offers the Coastal Management and Digital Coast Fellowship Program. This on-the-job education and training in coastal resource management and policy is offered to postgraduate students and provides assistance to state coastal zone management agencies and NOAA partners.

For the 2023 fellowship, applicants must be U.S. citizens who will complete a master's or other advanced degree at an accredited U.S. university between August 1, 2021, and July 31, 2023. A broad range of degrees are applicable to the

fellowship because the projects are varied among the host organizations. This two-year opportunity offers a competitive salary, medical benefits, and travel and relocation expense reimbursement. More eligibility requirements, descriptions of the projects, and guidance on how to apply can be found at coast.noaa.gov/fellowship (or view this flyer for more information).

Applicants for the 2023 Coastal Management and Digital Coast Fellowship Program must submit to the New Jersey Sea Grant Consortium by Friday, January 27, 2023 5pm local time. Please note you must be a New Jersey student to submit to NJS GC. New Jersey students are encouraged to contact Dr. Peter Rowe at NJS GC with any questions or concerns.

Support the Consortium

In 2021-2022, contributions from important donors like you allowed us to:

- Continue funding ocean, climate, and social science research to further promote sustainable fisheries and aquaculture, enhance healthy coastal ecosystems, and create an environmental literate workforce throughout the Garden State.
- Provided nearly 20,000 schoolchildren from over 30 different legislative districts the opportunity to experience unique hands-on experiential learning through our robust education programs.
- Disperse nearly 65,000 NJ Fish and Wildlife marine recreational fishing regulation cards and posters to over 260 marinas throughout the State, from over 24 different legislative districts.
- Influenced more than 150 marinas to have operating pumpout stations (including nine pumpout boats) thanks to NJS GC's involvement with the New Jersey Clean Vessel Act Program.

We're looking forward to the bright future ahead of the Consortium as we move forward into our 54th year. In 2022 NJS GC not only continued, but also created several new outstanding programs and projects, including:

- Piloting a novel Aquaculture Student Apprenticeship Program to provide students with an understanding of shellfish aquaculture to create a foundation for a career in the emerging field of shellfish farming.
- Hosted major public outreach events, including: Ocean Fun Days, State of the Shore, NJS GC's annual Favorite Beaches ceremony, and our revamped "Jersey Shore" photo contest.
- Created a new feature section in the COASTodian Newsletter called "Research Spotlight" focusing on NJS GC's groundbreaking and innovative coastal, ocean, and climate research.

- Hosted a Professional Development Workshop intended for elementary school teachers looking to build confidence in teaching climate science in their classrooms.
- And much more to come in 2023!

With your support we can continue to work hard to promote the wise use of New Jersey's marine and coastal resources through research, education, and outreach. The New Year is just around the corner. Can we count on you to support our mission to steward New Jersey's marine and coastal environment? To make a year-end, tax-deductible contribution to NJS GC for 2022, please click [HERE](#) or kindly address your contribution to:

Deborah Meehan Quinn
New Jersey Sea Grant Consortium
22 Magruder Road
Fort Hancock, NJ 07732



Checking In with 2020 Knauss Fellow Michael Acquafredda

Michael Acquafredda, was a 2020 Knauss Fellow with the NOAA Ocean Acidification Program (OAP), where he advanced domestic and international ocean acidification policy. Following his fellowship, Michael continued his work with OAP as a postdoctoral researcher and then as a program specialist via The University Corporation for Atmospheric Research. During his time with OAP, Michael developed and managed funding opportunities, worked as a Secretariat member for the Global Ocean Acidification Observing Network (GOA-ON), coordinated GOA-ON's Pier2Peer scientific mentorship program, organized two multi-day international virtual conferences (OA Week 2020 & OA Week 2021), advanced efforts to build resilience in the production and distribution of CO₂-in-seawater certified reference materials, and organized international capacity building activities in the Pacific Islands region.

Previous to his Knauss Fellowship opportunity, Acquafredda earned a BS in Biology from Tufts University and a PhD in Ecology & Evolution from Rutgers University. During his time at Rutgers, Michael studied sustainable aquaculture at the Haskin Shellfish Research Laboratory. His dissertation focused on ways that aquaculture opportunities can be expanded in the northeastern United States through ecologically-sound diversification. Specifically, Michael studied Atlantic surfclam (*Spisula solidissima*) farming techniques, the surfclam's vulnerability and resilience to ocean warming via selective breeding, and bivalve polyculture.

Now, as Postdoctoral Research Associate with the National Research Council, Acquafredda is conducting research at the James J. Howard Marine Sciences Laboratory of the NOAA Northeast Fisheries Science Center. Here, he is studying ways to make finfish aquaculture more sustainable by studying integrated multi-trophic aquaculture (IMTA), the practice of cultivating multiple aquatic species from different parts of the food chain in close proximity to one another. Excessive amounts of fish excrement can pollute waterways and IMTA is one strategy for turning farmed fish wastes into resources. Specifically, Mike is studying the feasibility and sustainability of an IMTA system involving striped bass (*Morone saxatilis*), sandworms (*Nereis virens*), and sea beans (*Salicornia bigelovii*). In September, Mike and his INFISH intern, Jiyahna Price of Bethune-Cookman University, wrapped up one experiment, where they tested the effect of stocking density on the growth and nutrient utilization of sea beans (also called pickleweed or sea asparagus) when they were exclusively fertilized with fish wastewater. Preliminary results suggest that sea beans may be a commercially viable candidate for co-culture with aquacultured marine fishes.



Jiyahna Price, NOAA 2022 IN FISH Intern and Michael Acquafredda, in front of experimental design for the Effect of Stocking Density on the Growth and Nutrient Utilization of Sea Beans (*Salicornia bigelovii*) in a Simulated Integrated Multi-Trophic Aquaculture (IMTA) System.

Two photos of green aquatic plants: Experimental design for the Effect of Stocking Density on the Growth and Nutrient Utilization of Sea Beans (*Salicornia bigelovii*) in a Simulated Integrated Multi-Trophic Aquaculture (IMTA) System.



Congressman Frank Pallone, Jr. announces NOAA Lab at Sandy Hook will receive \$480,000

On July 22, 2022 Congressman Frank Pallone, Jr. announced that the James J. Howard Marine Sciences Laboratory at Sandy Hook will receive \$480,000 to support research on the effects of environmental change on marine habitats and fisheries surrounding Sandy Hook. Pallone secured the funding in a federal spending bill that President Biden signed into law. Pallone was joined by many from Sandy Hook including NJSGC's Dr. Peter Rowe and Dr. Richard W. Spinrad, who serves as the Under Secretary of Commerce for Oceans and Atmosphere and National Oceanic and Atmospheric Administration (NOAA) Administrator. They also toured the facility, which is part of NOAA's Northeast Fisheries Science Center.

The funding will be used to hire additional researchers, who will address the impacts of environmental change on marine habitats and fisheries in the area. The funding will also provide lab space for students from nearby underserved communities and help promote diversity, equity, and inclusion in the scientific community.

Dr. Peter Rowe remarks "New Jersey Sea Grant Consortium is excited that Pallone is supporting the Howard lab. This will allow the consortium and the Howard lab to work together and further to support coastal science and professional development in New Jersey. Congressman Pallone has always been a huge supporter of NOAA and Sea Grant and these important funds are important to continued knowledge and experts to support our state's marine and coastal ecosystem as well as its economic viability."

"Scientists at the Howard NOAA lab are doing important research to protect our coastal habitats for years to come and help us understand the effects of a changing environment on wildlife. That's why I secured federal



Congressman Pallone toured the Lab with NOAA Administrator Richard W. Spinrad.

funding to continue this critical work for our state's marine habitats," said Pallone. "With this funding, the lab will be able to expand its research capability and further its efforts to promote diversity and inclusion. I'm grateful to Dr. Spinrad, who joined me today in New Jersey for this announcement, and I want to thank all the scientists at the lab whose cutting-edge research helps our understanding of marine habitats right here in New Jersey."

"Our nation benefits greatly from our staff at NOAA's Sandy Hook Lab, who conduct highly valuable research in ecology, aquaculture, and the effects of environmental change on marine habitats and resources. This work benefits coastal communities and the broader blue economy," said Rick Spinrad, Ph.D., NOAA Administrator. "I thank Congressman Pallone for his steadfast support of NOAA's Sandy Hook Lab and its important research on ocean acidification and climate change impacts on economically important fish and shellfish off New Jersey."