

New Jersey
Sea Grant Consortium
ANNUAL REPORT
2019



Extension

Coastal Resilience

Coastal Community Resilience Specialist Dr. Thomas Herrington continued working with coastal residents to improve their understanding



of present and future climate change impacts. Dr. Herrington partnered with ISeeChange.org to create an app for residents to document and map coastal flooding in their

community in real-time, which allowed the community to establish a local nuisance flood tide elevation for communicating possible flood events. Dr. Herrington is also working with professors at Monmouth University's School of Social Work to better understand the co-production of community science and improve Sea Grant's engagement with citizens for the collection of actionable science data.

Marine Recreation and Tourism

Marine Recreation Extension Agent Michael Danko continued partnerships with NJDEP Division of Fish and Wildlife, Marine Trades Association of



New Jersey, Monmouth County Health Department, Ocean County Planning Department and others to provide funds from the New Jersey Clean Vessel Act Program to marinas for installing, operating,

and maintaining pumpout facilities. Coastal water quality continues to improve and recreational boaters are now provided the necessary pumpout services to improve overall watershed function to coastal estuaries.

Shellfish Aquaculture

Aquaculture Program Coordinator Lisa Calvo worked collaboratively with educators at Upper Township Middle School and Lower Township Regional High School in Cape May County, New Jersey to provide



students experiential learning opportunities on an oyster farm. The authentic experiences presented a platform for learning about sustainability, aquaculture, bay ecology, and aquaculture-related career paths.

Stormwater Management

Water Resources Extension Agent Sara Mellor organized a Department of Public Works Rain Garden training session at the Long Branch Public Library in September, where staff learned how to

install a 280 square foot rain garden that will treat 29,200 gallons of stormwater annually at the Ocean Township Community Pool. Following excavation and



preparation, the rain garden was planted by volunteers from the Whale Pond Brook Watershed Association with plants purchased by the Ocean Township Environmental Commission. The prime location makes this installation a great demonstration project for what homeowners can do on their own property!

Living Shorelines

Coastal Processes Specialist Jon Miller worked with a group of students and professors from Stevens Institute of Technology and Rutgers University on the

development of a conceptual design for an urban ecosystem island off the coast of Bayonne that would incorporate several living shorelines techniques. Extension agents continue



working with staff from The Nature Conservancy and Partnership for the Delaware Estuary to evaluate the costs and effectiveness of several recently constructed living shorelines projects.

Coastal Hazards

Mid-Atlantic Coastal Storms Fellow Laura Lemke continued working with Coastal Processes Specialist Jon Miller on the development of an



erosion potential of approaching storms, and recently published an article on her work in Shore and Beach. Former Coastal Ecosystems Extension Agent Amy Williams also presented "Sharks vs. Rip Currents" at many schools, libraries, and festivals throughout the state to raise awareness of beach safety and ocean hazards.

Communications

State of the Shore

The 17th annual State of the Shore media event was held in Asbury Park in May. Coastal Processes Specialist Dr. Jon K. Miller and NJDEP Commissioner Catherine R. McCabe reported on beach conditions, coastline forecasts, and important pre-summer updates. Former Coastal Ecosystems Extension Agent Dr. Amy Williams also spoke about rip current safety. The event drew considerable press coverage and attention.



New Jersey's "Favorite Beaches" Survey and Ceremony

Several thousand voters participated in NJSGC's "Favorite Beaches" poll, with



Ocean City remaining the top overall victor. A public boardwalk ceremony attracted dozens of bystanders and press associates prior to the July Fourth holiday. Representatives from Monmouth and Ocean counties were also recognized during a live "sneak peek" radio broadcast on 94.3 "The Point."

Jersey Shore Photo Contest Calendar

NJSGC's revamped "Jersey Shore" photo contest debuted with the "Favorite Beaches" poll. After dozens of entries and thousands of votes, the Top 12 images were used to create NJSGC's 2020 calendar. The competition which embraced natural elements of the state's beautiful coastline, garnered vast social media promotion. A downloadable desktop version is available (free of charge) on the NJSGC website.



Research Awards

OMNIBUS RESEARCH 2018-2020

Impacts of thin layer sediment deposition on salt marsh ecosystems

Dr. Kenneth W. Able - Rutgers, The State University of New Jersey

Atlantic and Gulf Shellfish Seed Biosecurity Collaborative (Aquaculture NSI)

Dr. David Bushek - Rutgers, The State University of New Jersey

Establishing shellfish hatchery biosecurity certification standards to facilitate interstate transport of shellfish seed (Aquaculture NSI)

Dr. David Bushek - Rutgers, The State University of New Jersey

River plumes as a control on microplastic entry into the food chain

Dr. Nicole Fahrenfeld - Rutgers, The State University of New Jersey

Enhancing Bivalve Aquaculture through Species Improvement and Diversification (Aquaculture NSI)

Dr. Ximing Guo - Rutgers, The State University of New Jersey

Optimizing fishing regulations for New Jersey's multi-species recreational bottom fishery to improve economic outcomes and angler satisfaction

Dr. Olaf P. Jensen - Rutgers, The State University of New Jersey

Innovative Restoration Aquaculture of Freshwater Mussels in the Tidal Freshwater Zone of the Delaware Estuary Watershed for Water Quality Improvement (Aquaculture NSI)

Dr. Danielle Kreeger - Partnership for the Delaware Estuary, Inc

Measuring dune, beach, and nearshore response to an extreme event: Atlantic City, New Jersey

Kimberly McKenna - Stockton University

Interactions among horseshoe crabs and intertidal oyster farms in the Delaware Estuary

Dr. Daphne Munroe - Rutgers, The State University of New Jersey

Quantifying the effects of a changing climate on summer flounder recruitment

Dr. Malin Pinsky - Rutgers, The State University of New Jersey

"Green" retrofit of stormwater BMPs for pollution prevention in urban coastal communities of New Jersey

Dr. Dibyendu Sarkar - Stevens Institute of Technology

Developing Indices of Vulnerability to Climate Change for Ground Fishing Communities in the Northeast (NOAA/National Marine Fisheries Service)

Dr. Kevin St. Martin - Rutgers, The State University of New Jersey

Engaging Undergraduates in Fisheries Population and Ecosystem Dynamics

Dr. John Wiedenmann - Rutgers, The State University of New Jersey

Assessing the Susceptibility of Atlantic Sea Scallops and Surf Clams to Ocean Acidification Using Glider-based Coastal Monitoring and Larval Transport Models (Mid-Atlantic Ocean, Coastal, and Estuarine Acidification Graduate Research Fellowship)

Elizabeth Wright-Fairbanks - Rutgers, The State University of New Jersey

Education

K-12 Education



In 2019, NJSGC educators facilitated marine and coastal science learning experiences for close to 19,000 K-12

students from throughout the State of New Jersey as well as from parts of Pennsylvania and New York. Over 250 visiting school districts took part in field trips that provided outdoor learning



experiences designed to develop understanding and awareness of marine and coastal ecosystems. Programs are correlated to

New Jersey Student Learning Standards to supplement formal instruction in schools.

Ocean Fun Days

Celebrating its 16th year in 2019, Ocean Fun Days continues to be NJSGC's premier public outreach event drawing approximately 15,000 visitors over a 2-day period in May. Hosted at Island Beach State Park and Gateway National Recreation Area – Sandy Hook in conjunction with New Jersey Natural Gas, visitors to this family-friendly event are treated to free field trips, laboratory activities and presentations



from NJSGC and its partners. A variety of exhibitors shares environmentally-relevant information and encourages stewardship of New Jersey's coastal resources.

Community Partnerships

NJSGC continues working with diverse audiences and partners, including the Central Jersey Chapter of North

American Association of Negro Business and Professional Women's Association, Inc.



Educators worked with 35 minority students from Asbury Park in an effort to develop environmental literacy, provide career awareness, and encourage workforce development.

Professional Development & Student Research

NJSGC collaborates with extension agents and scientists to help develop curriculum. New ocean acidification material was produced and shared with over 175 educators at conferences/workshops in 2019.



Approximately 40 graduate and undergraduate college students were also supported with NJSGC funds across the research portfolio. Students supported by NJSGC-funded research gain valuable real-world experience that prepares them for careers in ocean and coastal sciences. Skills

learned such as experimental design, field methods, lab techniques, and data management and analysis enable students to collaborate with scientists and professionals in stakeholder-driven research that addresses NJSGC's areas of focus.

Omanjana Goswami (Rutgers University – Newark) represented NJSGC as part of the 2019 John A. Knauss Fellowship Program.



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