



# Building Partnerships for Coastal Resilience in Barnegat Bay, NJ



**Bari Greenfeld**  
U.S. Army Corps of Engineers, Institute for Water Resources

Restore America's Estuaries Summit  
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- Established in 1969 to help the USACE Civil Works Program analyze emerging water resource issues
- Not part of USACE Headquarters, or any specific Division or District
- Creative and forward-looking
- Provide research, problem-solving, and collaborative planning
- Decision-makers at all levels within USACE come to IWR for insight into a host of economic, environmental, and social challenges

## IWR Coastal Initiatives

- Reduce coastal flood risks due to urbanization, erosion, sea-level rise, and severe storms
- Use a systems approach to build coastal resilience
  - Increase regional collaboration
  - Share expertise across disciplines
  - Maximize environmental and economic benefits



# Systems Approach to Geomorphic Engineering (SAGE)

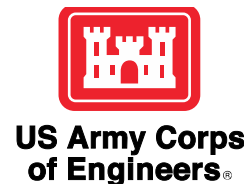
- Promotes the integration of green and gray solutions for coastal protection
- Understands shoreline changes in the context of natural coastal processes
- Builds partnerships to research, plan, design, and fund projects that increase the resilience of coastal communities





# SAGE is a community of practice

- Collaborative effort between federal and state agencies, non-governmental organizations, academia, and private business & engineering firms



Among others...





## National Work Groups

- Science and Engineering
- Metrics
- Policy
- Finance
- Communications





## Regional Pilots

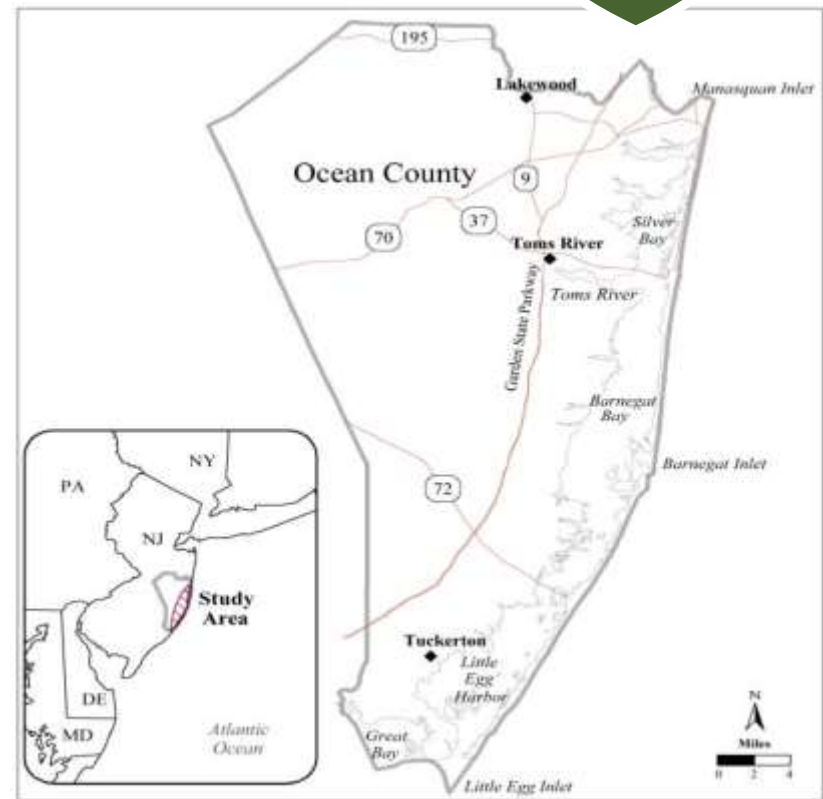
- Develop communities of practice that advance a regional approach to living shorelines and other natural features
  - Expand knowledge base of practitioners
  - Demonstrate the value of collaboration
  - Lead to increased number of projects
- Locations:
  - San Francisco Bay
  - Barnegat Bay
  - Chesapeake Bay





# Barnegat Bay, New Jersey

- 75 mi<sup>2</sup> estuary, located in Ocean County
- Situated between the mainland and barrier islands
- Part of the National Estuary Program since 1995
- Open shallow water environment with ecologically valuable eelgrass beds
- Surrounded by freshwater and saltwater wetlands





## Issues

- Wetland loss and shoreline erosion
- Reduced habitat for important species
- Shallow and poorly flushed, with high nutrient load
- Point and non-point source pollution
- Impacted by Hurricane Sandy





## Barneгат Bay SAGE Pilot

- Coordinated with stakeholders to understand existing work in the region
- Assembled a Community of Practice
- Developed a regional strategy that identifies priority areas and funding needs
- Received a FHWA Green Infrastructure Grant to conduct research in one of the priority areas



# Project Partners

- USACE- Institute for Water Resources
- USACE- Philadelphia District
- Stockton University Coastal Research Center
- Barnegat Bay Partnership
- New Jersey Department of Environmental Protection- Division of Fish & Wildlife
- New Jersey Department of Transportation- Office of Maritime Resources
- Jacques Cousteau National Estuarine Research Reserve
- Rutgers University Marine Field Station





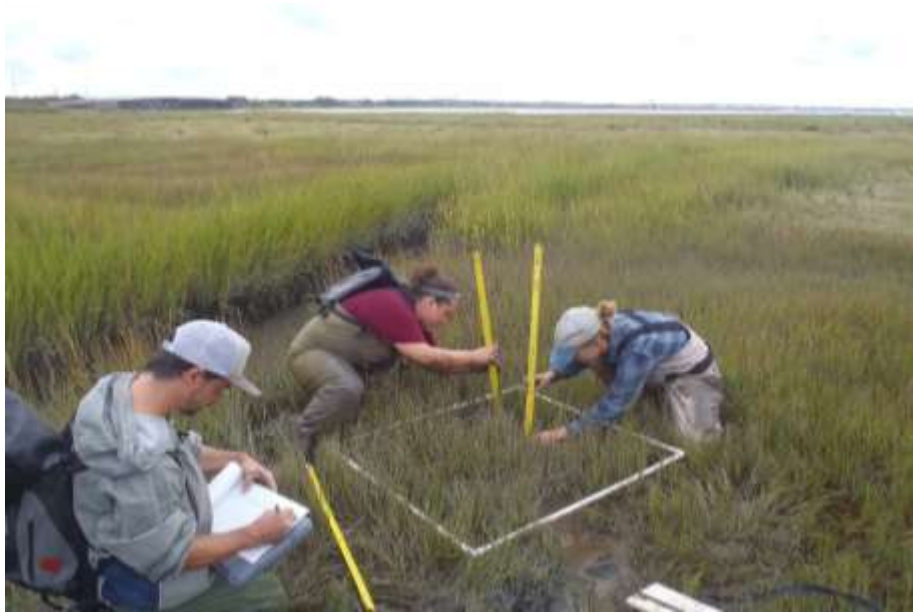
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# Great Bay Boulevard Project

- Investigate physical conditions that initiate flooding
- Determine influence of the natural wetland system in protecting the highway
- Provide recommendations for use of green infrastructure solutions to lessen frequency and severity of flooding







# Questions?

Bari Greenfeld  
Institute for Water Resources  
U.S. Army Corps of Engineers  
[Bari.N.Greenfeld@usace.army.mil](mailto:Bari.N.Greenfeld@usace.army.mil)

**SAGE Website:**  
<http://sagecoast.org/index.html>

