



Innovative “Living Shoreline” Approaches in New York and New Jersey

Jon K. Miller, Ph.D.

Davidson Lab Assistant Director - Coastal Engineering,
Assistant Director NJ CPTAS,
NJ Sea Grant Coastal Processes Specialist



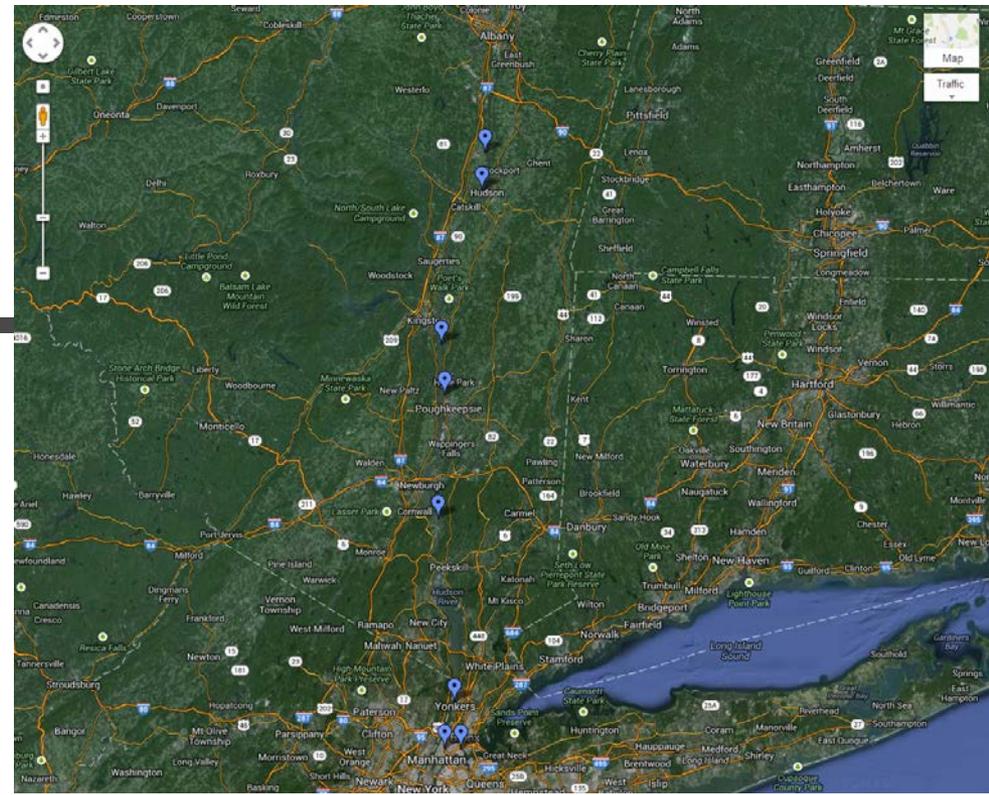
Where are we at?

New York

- Hudson River Sustainable Shorelines Project
- Research Plan for NYC Green Shoreline Infrastructure
- NYSG Living Shorelines Workshop

New Jersey

- Living Shorelines General Permit
- Engineering Guidelines for LS Projects
- DELSI Project
- Projects in Conceptual Design Phase



HRNERR, NYS DEC, Stevens, Cary Institute, and many others...

HUDSON RIVER SUSTAINABLE SHORELINES DEMONSTRATION SITE NETWORK



Mid-Atlantic Living Shorelines Summit
Cambridge, MD – December 10-11, 2013



Habirshaw, NY



Esopus Meadows

NY

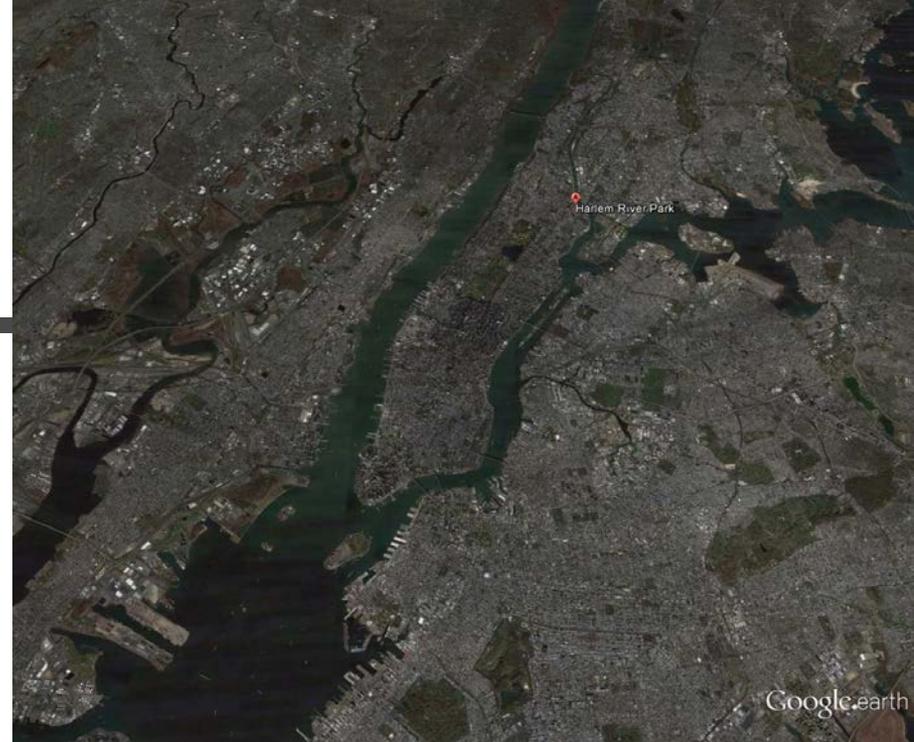




Sustainable Shorelines Products

- Literature Reviews (engineering & ecology)
- Comparison of natural vs. engineered shoreline ecology
- Demonstration Site Network
- Physical Forces Analysis
- Forensic Analysis (underway)
- All available at:

<http://www.hrner.org/hudson-river-sustainable-shorelines>



NYC Parks, NYC EDC, MWA, Stevens, SeArc, many others...

URBAN ENVIRONMENTS



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NYC Dept. of Parks and Recreation Designing the Edge

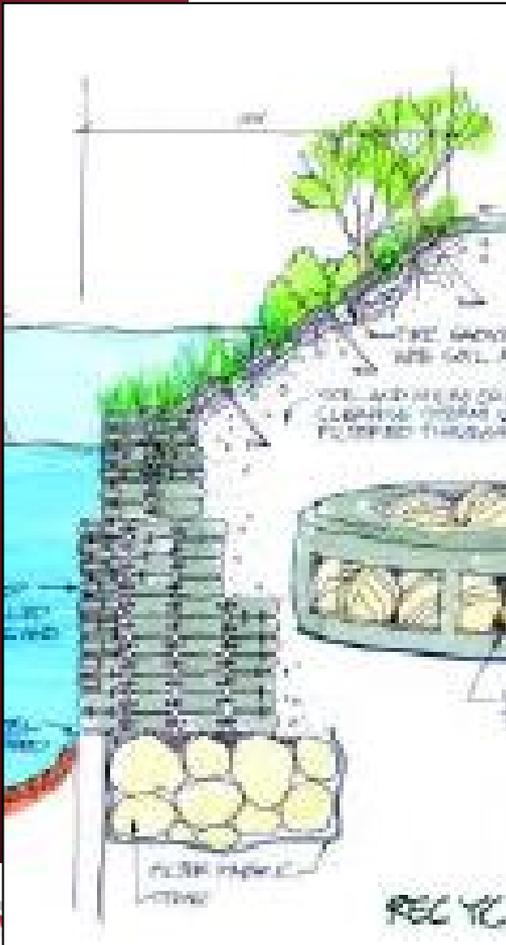


Objectives:

- Improve ecological value of urban shore
- Modify the waterfront edge to enhance safe access to the water by the public
- Increase compatibility with recreational users



Finished Product



<http://www.waterfrontalliance.org/projects/designtheedge>



Alternative Materials and Placements

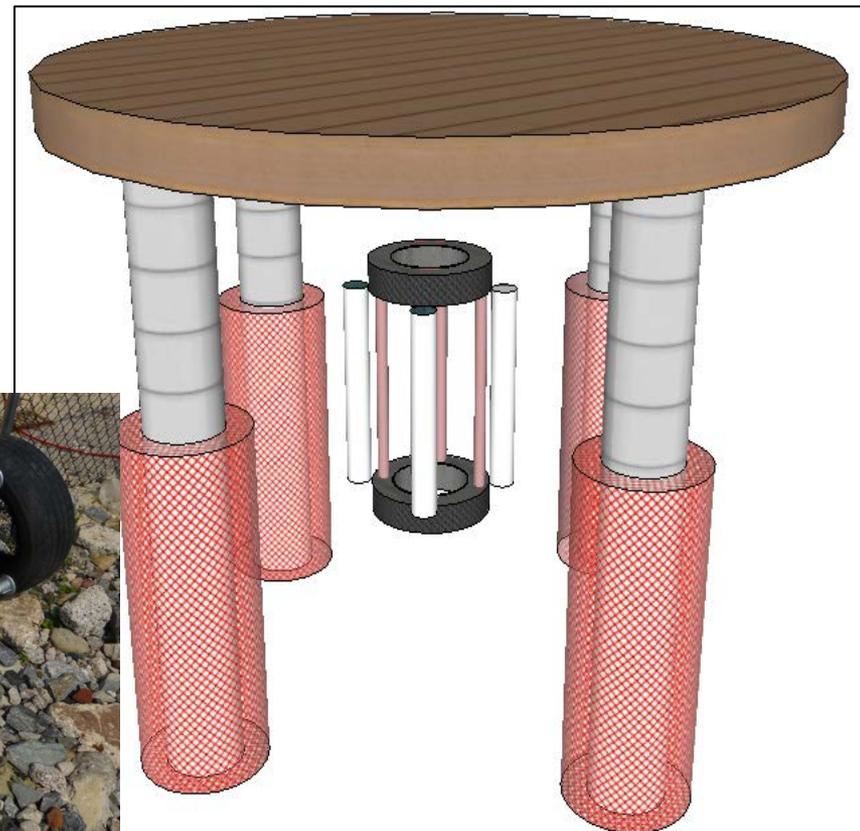
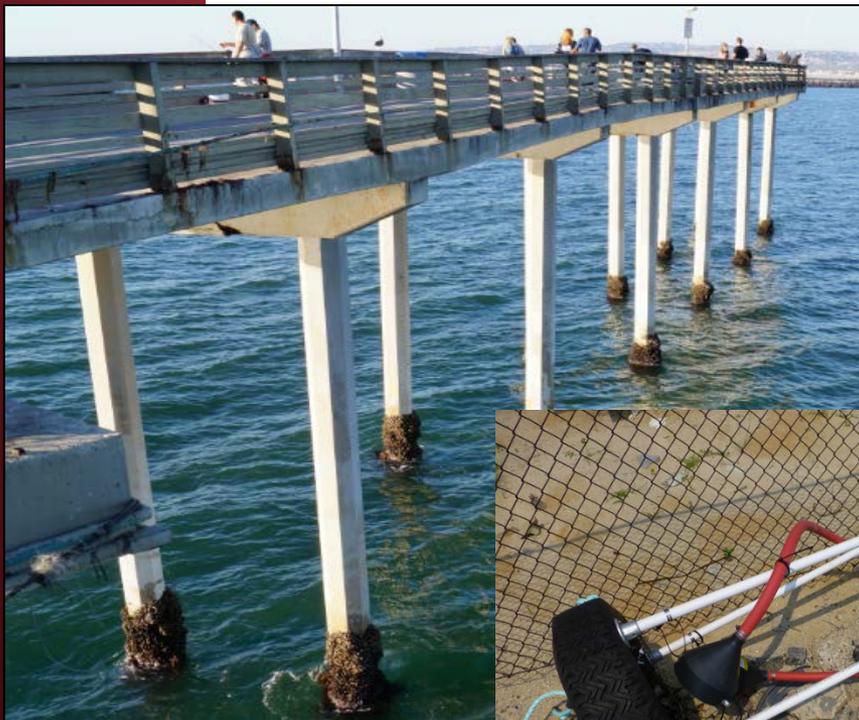


<http://www.searc-consulting.com/home.yecms/index>



Oysters in Urban Environments

Andrew Rella Dissertation Research & NYC EDC “Changing the Course..” 2nd Place: Oyster Encasements for Pile Enhancement
(<http://www.nycedc.com/WaterfrontCompetition>)





NEW JERSEY PROJECTS



Beaches and Dunes



Lower Cape May Meadows



Lower Cape May Meadows

Reeds Beach - post Sandy

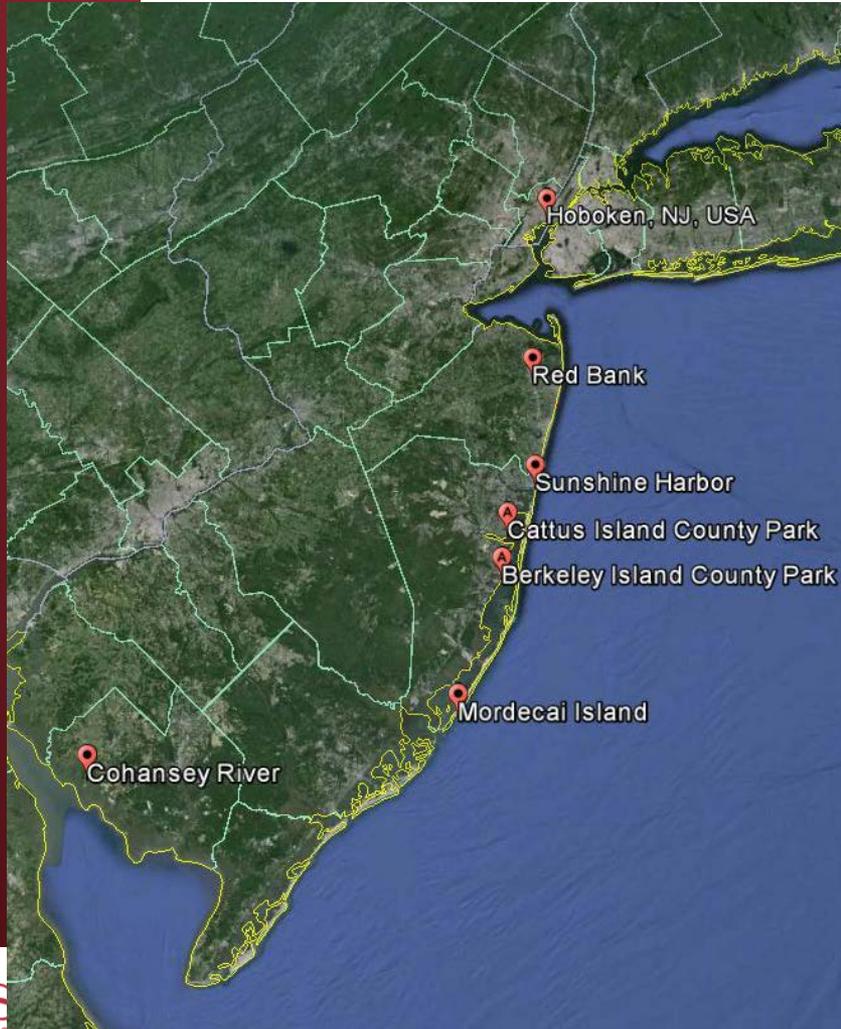


Reeds Beach - after restoration





Opportunities



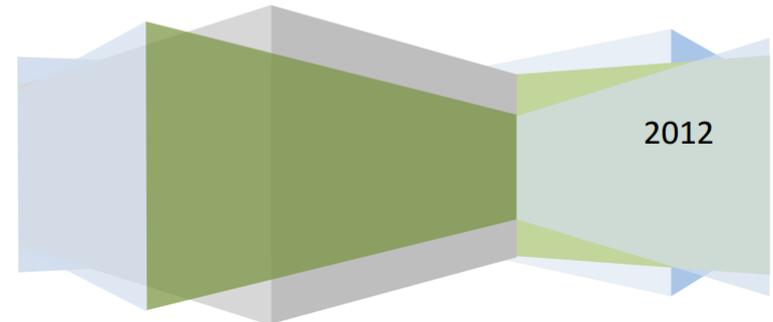
Partnership for the Delaware Estuary
Rutgers' University Haskin Shellfish Research Laboratory



Final Report

New Jersey Living Shoreline Possibilities

Submitted to the Dodge Foundation



PDE Report No. 12-05, July 2012

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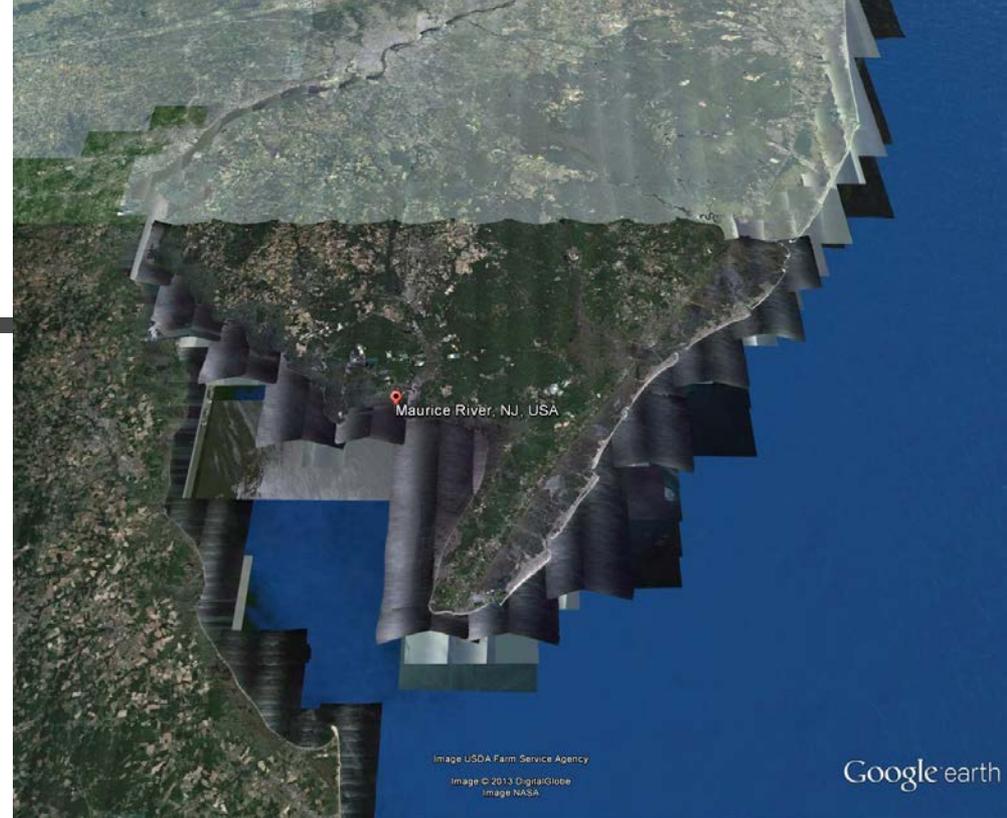




Mordecai Island

RUTGERS Rutgers University Cooperative Extension - Ocean County, New Jersey
 Mordecai Island | Borough of Beach Haven | Ocean County, NJ





Partnership for the Delaware Estuary & Rutgers Haskins Lab

DELSI PROJECT



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Maurice River

(http://delawareestuary.org/Living_Shorelines)



BEFORE: Marina in New Jersey's Heislerville Fish and Wildlife Management Area in April of 2010.



BEFORE: Day of installation of coconut-fiber (coir) logs and mats in New Jersey's Heislerville Fish and Wildlife Management Area in May of 2010.



AFTER: One year later, June 2011, native marsh grass can be seen flourishing in the soil that has collected behind the new "living shoreline." Not only does this defend land against destructive waves, but also it serves as fish habitat during high tides.



AFTER: September 2011- the site remained stable after Hurricane Irene and Tropical Storm Ike.



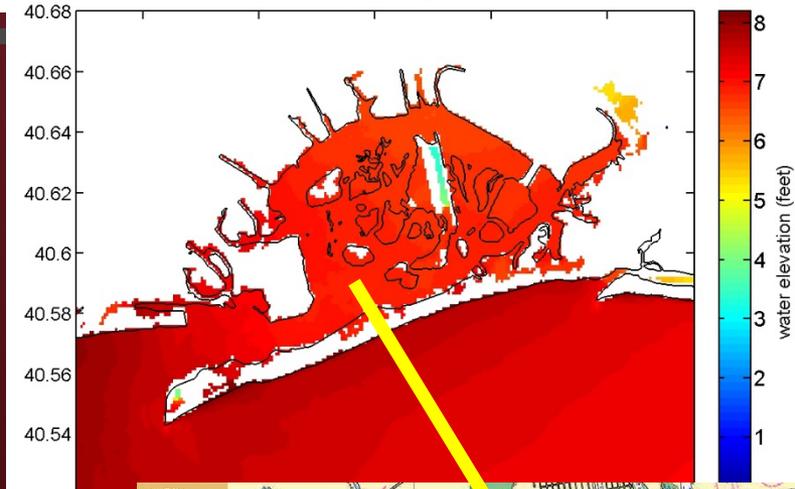
RESEARCH



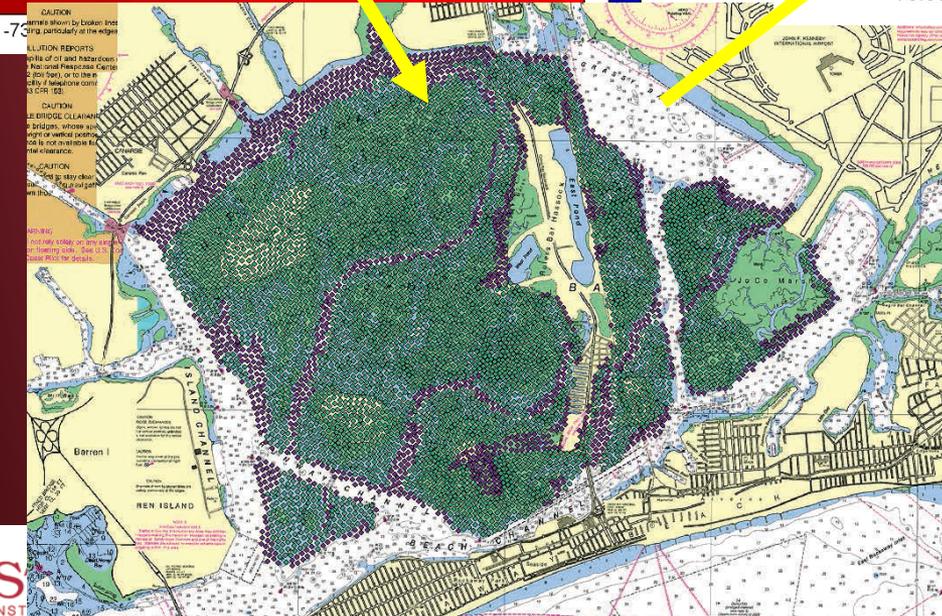
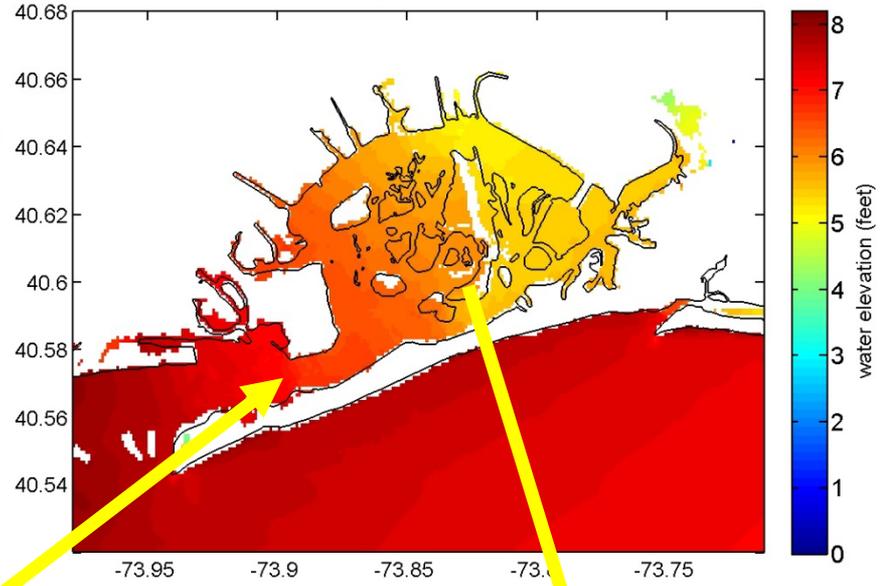
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Numerical

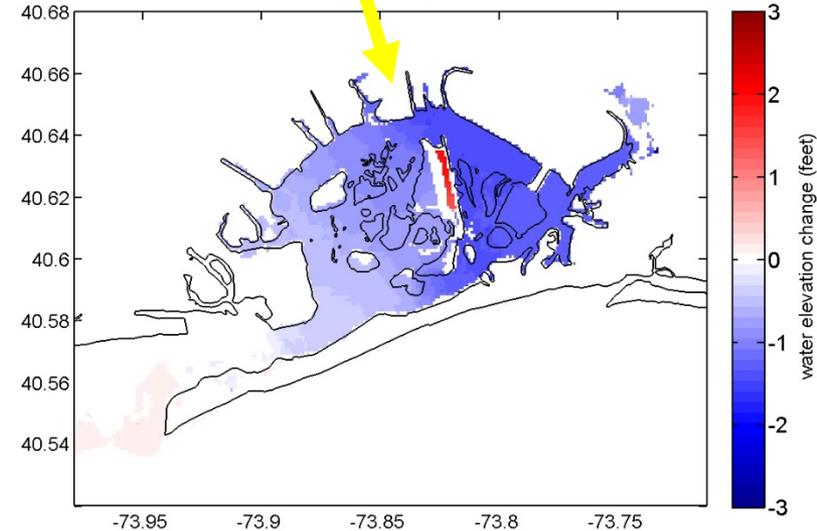
Donna 1960



Donna 1960



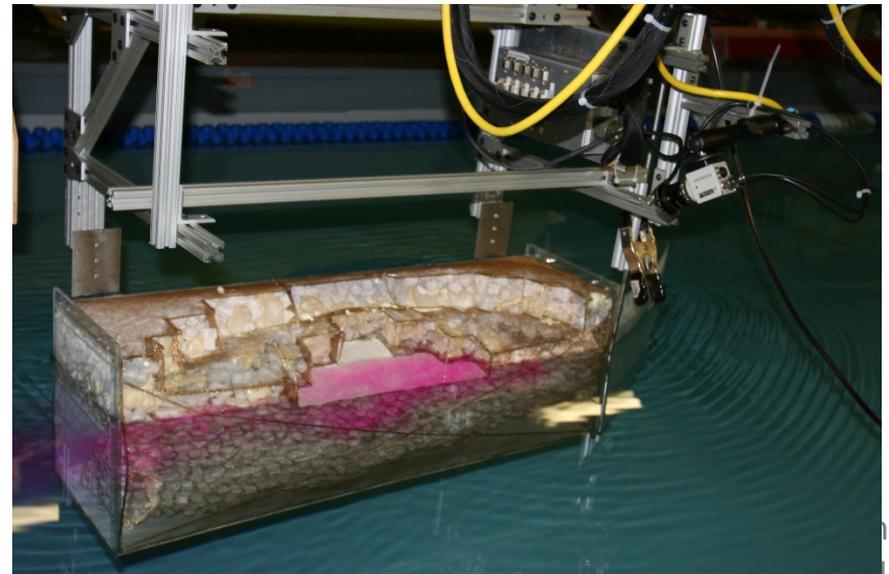
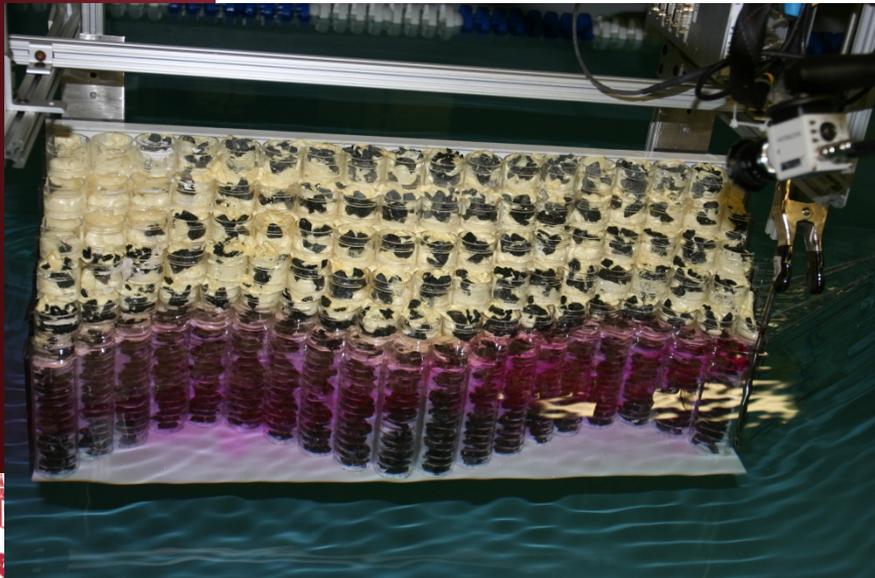
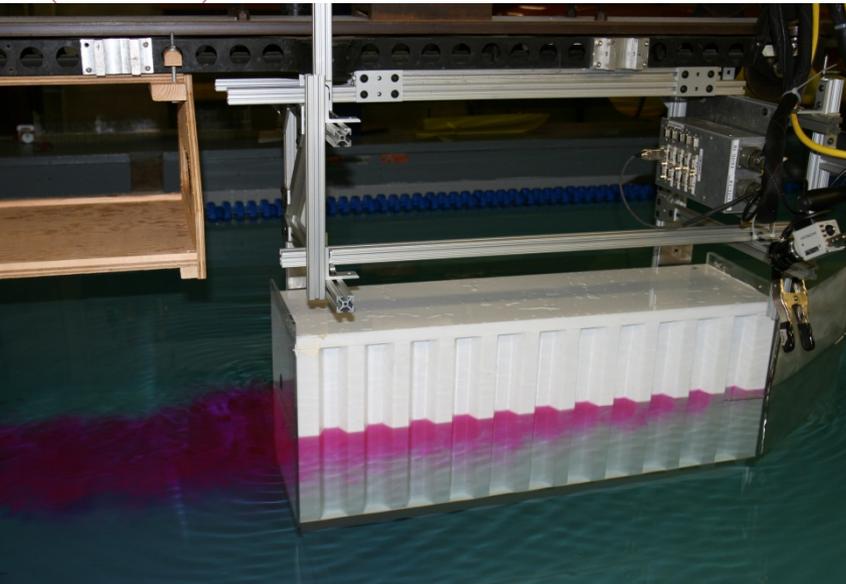
Donna 1960



Physical

Tested the effect the wall had on;

- % Current Reduction
- Wake Dissipation





Lessons Learned

- Engineers and ecologists can be friends
- Projects can survive storms
 - Storm timing important
- Wildlife management
- Communication of objectives is key
- Liability is a big engineering concern



Needs & Opportunities

- Projects
 - Both successful & failed
 - COPRI database
- Monitoring and protocols
- Hazard reduction analysis
- Regulatory changes
 - Adaptive management
 - Preserve innovation
- Integration of Efforts



For More Info

Jon Miller

Davidson Laboratory

Stevens Institute of Technology

711 Hudson Street, Hoboken, NJ

jmiller@stevens.edu Ph:201-216-8591



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