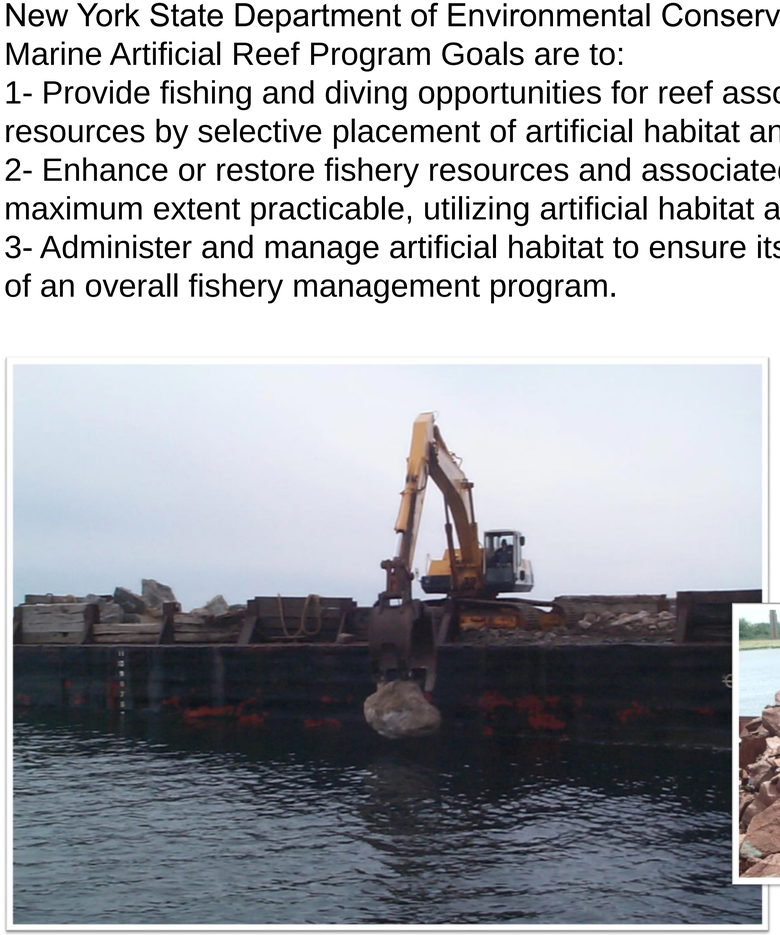
NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Stony Brook University

Pilot Artificial Reef Monitoring Study

New York State Department of Environmental Conservation's (NYSDEC's) Marine Artificial Reef Program Goals are to:
1- Provide fishing and diving opportunities for reef associated fishery resources by selective placement of artificial habitat and,
2- Enhance or restore fishery resources and associated habitat, to the maximum extent practicable, utilizing artificial habitat and,
3- Administer and manage artificial habitat to ensure its prudent use as part of an overall fishery management program.



A pilot study has begun to conduct biological monitoring on the existing Hempstead Reef and Atlantic Beach Reef sites. The study will focus on the colonization of new rock compared with existing rock reefs and adjacent non-reef areas, and also evaluate other reef building materials such as steel and concrete. The data from the study will be used to quantify species diversity and population abundance of fish, crustaceans and other epibenthic organisms in order to evaluate the effectiveness of these artificial reefs in achieving the Programs goals.

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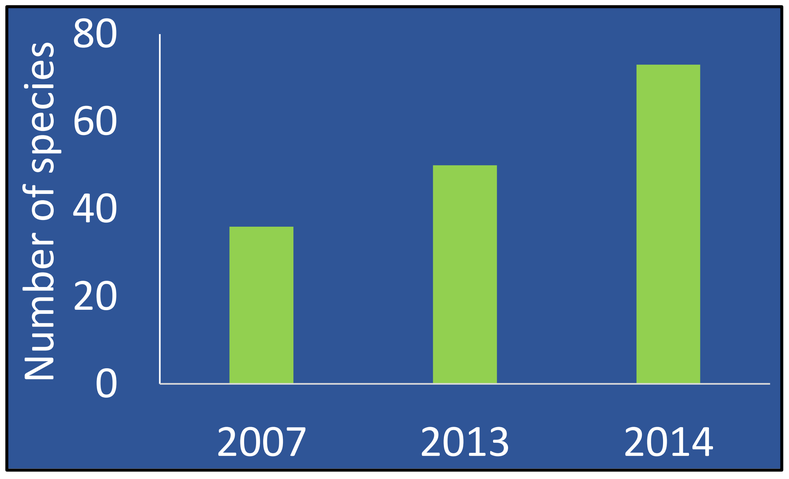
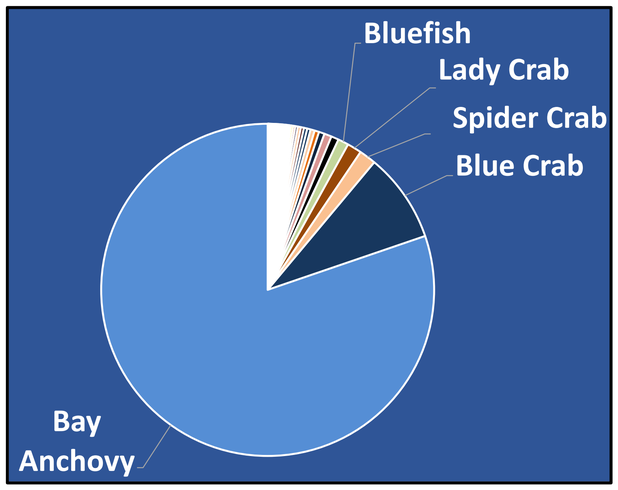
Effects of a Barrier Breach on Ecosystem Health of Great South Bay

Trawl Survey Results





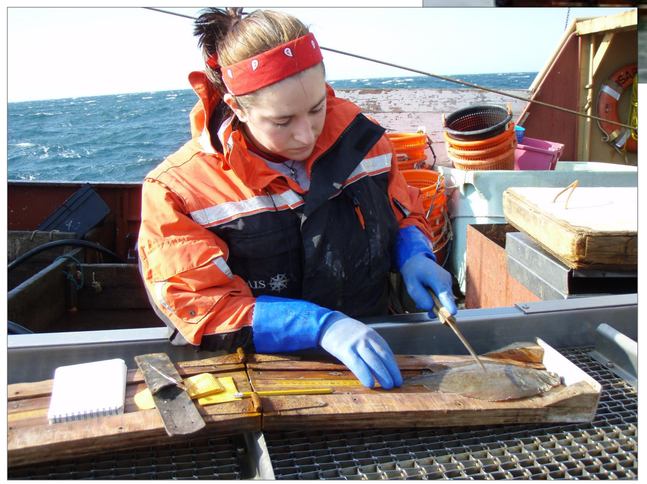
Bay anchovy *(Anchoa mitchilli)*

Since all fish species are associate with specific environmental conditions (e.g., temperature and salinity), increased exchange with the ocean due to the breach will likely cause the following:

- **a greater occurrence of marine species.**
- **decreased habitat for freshwater and brackish species.**
- **greater exchange of energy between GSB and ocean.**
- **recovery of system maturity.**

Reducing Bycatch in New York's Commercial Fisheries

Background- Bycatch is a significant source of mortality for many protected marine species, such as Atlantic sturgeon, marine mammals & sea turtles, as well as for non-target commercial fish species. Better estimates of bycatch are needed to inform management decisions about how to reduce the occurrence of bycatch for these species.



Mechanism-Agreement with NOAA to provide increased observer coverage of gillnet, otter trawl & pot & trap trips.

Expected outcomes-

- Improved estimate of bycatch for threatened & endangered species
- Improved estimate of bycatch for non-target commercial species
- Estimates will be used by managers for conservation & management of these species.

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Monitoring of Sea Turtles Off of New York

Background/objective- Several species of endangered sea turtles can be found off of NY. Basic information is needed in order to protect them from threats such as cold-stunning and fishery interactions.

Mechanism- Currently tagging turtles to track their movements with the Riverhead Foundation. A workshop will be held next year to design a monitoring program which will be implemented by the DEC, Riverhead & others.

Current & Expected Outcomes-

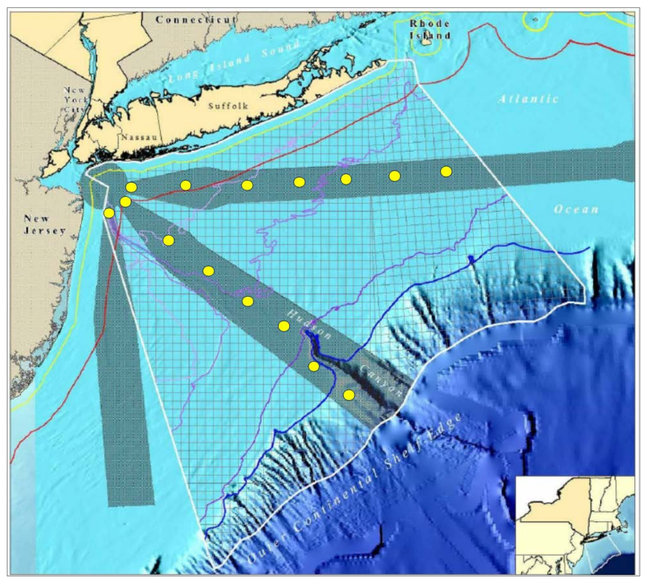
- Tagged turtles have been detected off of South Carolina & Florida. This indicates that these formerly cold-stunned turtles were successfully rehabilitated by the Riverhead Foundation.
- Monitoring program results will provide managers with needed information for conservation of these species.

Riverhead Foundation For MARINE RESEARCH & PRESERVATION

Monitoring of large whales in the New York Bight

Mechanism: A three year, year round survey in the New York Offshore Planning Area will be conducted using Aerial, Shipboard & Passive Acoustic methods. **Potential partners:** NOAA, Fisheries, NYNHP, DOS and others.

Background/objective:
Several species of endangered whales may be found in the NY Bight year round. Baseline information is needed for the conservation & management of these species which may overlap with human activities such as shipping, fishing, dredging & wind energy development.



Expected outcomes:
- Collection of needed information about whales including occurrence & distribution
- Provide the basis for long term monitoring
- Aid managers planning to protect whales while allowing legal human activities

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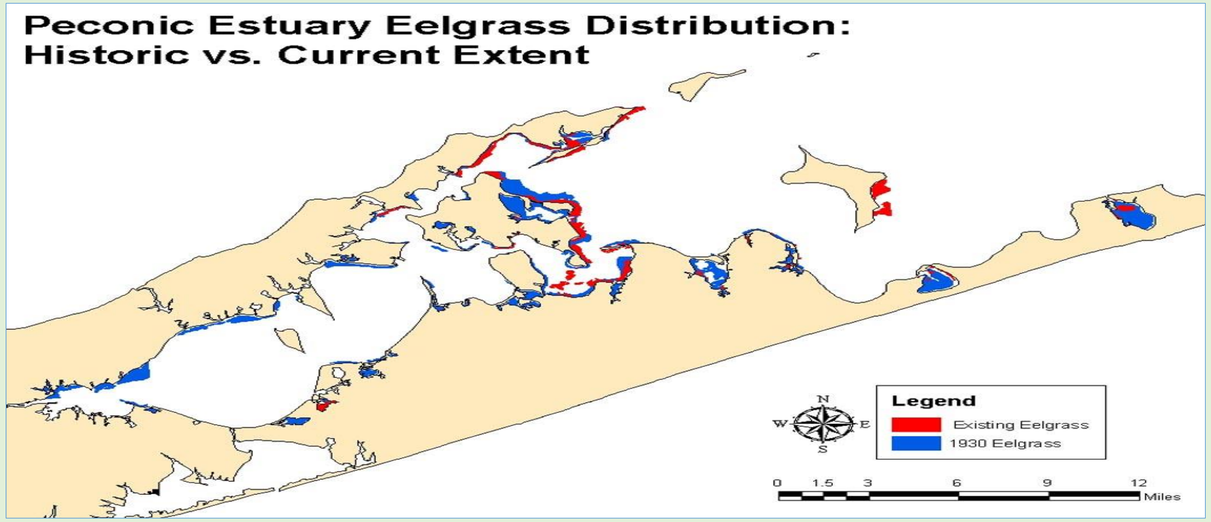
Seagrass Protection Act

Following the recommendations of the New York State Seagrass Task Force, and as mandated by The Seagrass Protection Act of 2012, DEC will work in collaboration with municipalities and other appropriate stakeholders to designate seagrass management areas, devise management plans, and identify impacts and stressors to eelgrass so as to protect and manage the resource.

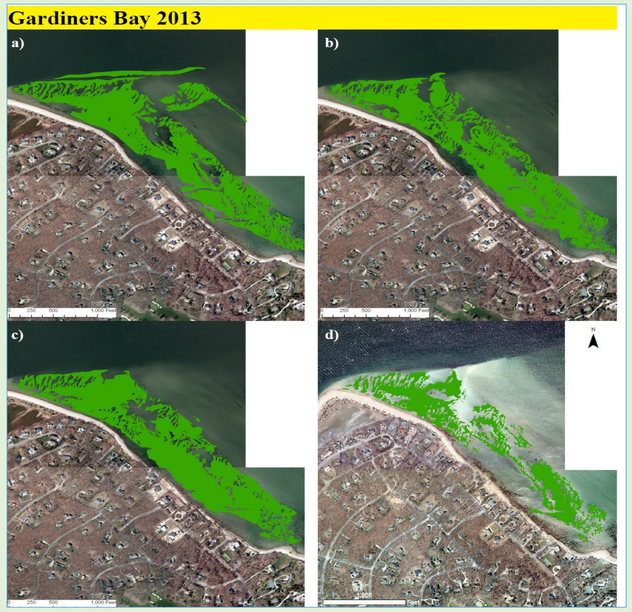
Eelgrass Benefits: stabilizes bottom sediments, improves water quality, and provides critical habitat for numerous marine species.

Stressors: destructive fishing gear, pollution, boating and personal watercraft activities, storms and ice scouring, dredging, shoreline stabilization structures, and sea level rise.

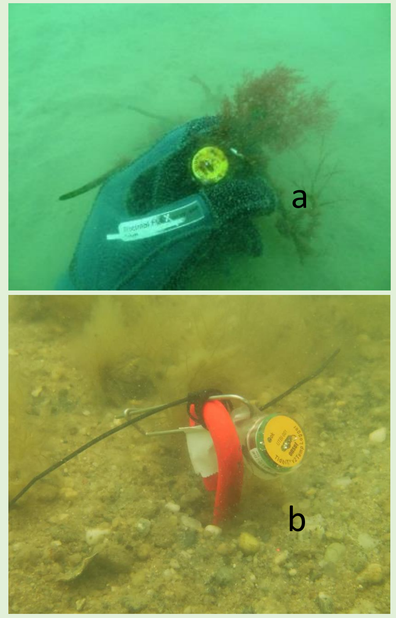


Approximately 1,552 acres of existing eelgrass documented by Tiner et al., 2003, using 2000 aerials, as compared to approximately 8,720 acres of 1930 eelgrass. *Source: CCE*

Monitoring by our many partners: The Peconic Estuary Program Submerged Aquatic Vegetation Monitoring Program, contracted to Cornell Cooperative Extension's Marine Program, is just one example of the work being conducted to monitor and assess impacts to seagrass. The Nature Conservancy has also supported numerous research projects on eel grass stressors (light, temperature, nutrients and the role of genetics in eel grass survival).



A series of aerial delineation of Gardiner's Bay eelgrass from 2004-2013. The years represented are a) 2004, b)210, c) 2012 and d) 2013.



Temperature (a) and Light (b) Loggers used in the pilot monitoring study.