



AQUACULTURE IMPACT STUDY

BACKGROUND

Historically, oysters have been one of the most commercially important shellfish in New York State since the 1800s. Oyster aquaculture has become more prominent on Long Island, New York with the help of the Shellfish Aquaculture Lease Program. Farmers on Long Island use bottom or floating gear to raise seed oysters to market size within two years.

The New York oyster industry has declined in production since its peak in 1911, due to a lack of supply of seed oysters, effects of pollution, diseases, predation, changing hydrographic patterns, and overfishing.

Today, much of New York's oyster aquaculture is through shellfish from on-bottom and off-bottom methods. Bottom methods are where the oyster seeds are raised on the seafloor without bags or cages. Off-bottom methods are the use of cages, bags, trays, or racks on the sea floor or suspended in the water column. This can also refer to surface cages that are used to raise oysters.

By providing evidence of the co-benefits of oyster aquaculture, this work supports policy initiatives aimed at promoting sustainable practices that benefit both the environment and the economy.

CCMP ACTIONS

ACTION 26: Quantify the impacts of fishing, aquaculture, boating, navigational dredging, and hardened shoreline structures on habitats and vulnerable species, to foster sustainable recreational and commercial uses of the Peconic Estuary that are compatible with protection of biodiversity.

PROJECT DETAILS

Phase 1:

- Updated cameras had higher pixels per image, which helped to show interactions between fish and aquaculture gear in Peconic Estuary.
- The majority of fish in the images were juveniles (black sea bass, tautog (blackfish), scup (porgies), and cunner, respectively). This implies that aquaculture gear could prove to be important for fish nursery areas or feeding hot spots for larger predators.

Phase 2:

- Valve gape monitoring on oysters in aquaculture systems was conducted at multiple locations in the Peconic Estuary to characterize which environmental conditions promote feeding as indicated through the oysters' valve gaping behavior. This would result in an enhancement of surrounding water quality.
- The long-term goal is to use valve gape monitoring to determine where in the water column and under which environmental conditions results in the best enhancement of water quality. Thus, this study aims to determine how aquaculture gear provides important habitat for various species and demonstrate the interconnected relationship between oysters and fish in the Peconic Estuary.

PARTNERS

- The Peterson & Volkenborn Labs at SBU SOMAS
- NYSDEC
- Cornell Cooperative Extension
- Hampton Oyster Company
- North Fork Oyster Company

STATUS

Phase One of this study is completed.
Phase Two is ongoing.

