

Establishing a selective breeding program for hard clams will help to maximize the economic potential of the shellfish industry.

Advancing A Hard Clam Selective Breeding Program

The hard clam fishery represents the second most economically important shellfish being cultivated in the aquaculture industry; however, its production is constrained in several states along the Atlantic Coast. The Sea Grant Hard Clam Selective Breeding Collaborative* is addressing these problems through the development of resilient strains that are tolerant to specific environmental conditions in those regions.

In 2021, New York Sea Grant (NYSG) continued its co-leadership role in this national effort to establish **the first hard clam selective breeding program**. NYSG coordinated the second annual project team meeting during which team members prepared workplans and identified challenges to achieving their goals.

The Collaborative's research team successfully constructed the hard clam genome and published the information in *Genomics*, Vol. 112, Issue 6. The team identified single nucleotide polymorphism genes that control resistance to the Quahog Parasite Unknown (QPX) pathogen and to heat. This research builds upon QPX studies that were supported in past NYSG Omnibus cycles (2006-2016), and marks **the first step in using genetic features to provide growers in Massachusetts, New York, New Jersey, and Florida with disease- and heat-resistant strains**.

The new website: www.HardClamHub.org conveys project updates; an electronic mailbox, HardClamHub@gmail.com, enables stakeholders to communicate with the team; and a graphic was created to develop a brand identity for this project.

As a result of NYSG's involvement with this project, hard clam growers in multiple states across the eastern seaboard made a significant step closer to address problems that constrain production in their regions.

Project Partners:

- Funding: National Oceanic & Atmospheric Administration
- Stony Brook University Marine Animal Disease Laboratory

* *The Hard Clam Selective Breeding Collaborative: scientists; Sea Grant Extension professionals from Massachusetts, New York, New Jersey, Virginia, and Florida; Cooperative Extension; the public and private sectors. A detailed list of partners is available at www.HardClamHub.org.*



With a selective breeding program, fishermen from New York to Florida (FL) will have access to hard clams that can tolerate challenging environmental conditions in their region. Photo: Leslie Sturmer, FL Sea Grant

“In order to elevate the hard clam industry, the Hub must educate, build trust, and develop a plan to engage stakeholders in the breeding program.”
— Sea Grant Hard Clam Selective Breeding Hub 2021

NYSG Focus Area for this project: Sustainable Fisheries, Aquaculture & Seafood Businesses in New York.

New York Sea Grant is a joint program of Cornell University, the State University of New York, and NOAA.
Contact: New York Sea Grant Extension, 112 Rice Hall, Cornell University, Ithaca, NY 14853; www.nyseagrant.org.
Project summary written by NYSG Marine Fisheries Specialist Antoinette Clemetson, 631-632-8730, aoc5@cornell.edu.