SURF CLAMS
Piloting Surf Clam Aquaculture Techniques
By way of Josh Reitsma

In March 2017 the Aquacultural Research Corporation (ARC), Cape Cod Cooperative Extension/Woods Hole Sea Grant (CCCE/WHSG), SEMAC, and Roger Williams University all began work together on a surf clam project with funding from the NOAA Saltonstall-Kennedy Competitive Research Program.

The goal of the project is to determine the best locations and conditions to commercially grow out surf clam seed in order to provide wholesale and retail markets with a new product called, “butter clams.” Butter clams are surf clams (Spisula solidissima) that are grown to only 1.5 to 2.0 inches long.

Surf clam seed was produced in 2017 and followed through nursery conditions, and then deployed at four participating grow out locations during the summer of 2017 and followed through the end of 2018. At each grow out location seed was deployed in 3 different methods:

-Planted in the sediment under protective netting typical to quahog farming in Massachusetts.
-Placed in soft nylon mesh bags typical of clam farms in Florida.
-Placed in plastic mesh oyster bags either in cages off-bottom or attached to lines on the bottom.
Survival and growth varied by site and grow-out methodology. The two intertidal sites experienced significant mortality events, one related to extreme cold in early 2018 and at the other site related to extreme heat in August 2018. Mortality at the other 2 sites was more general and seemed to be related to either predation or smothering by mounding sand. The surf clam seed grew in all conditions, though at different rates, up until around 18mm in length at which point clam growth was much improved by a method that allowed clams to dig into the sediment. Planting surf clams under netting or in rigid mesh oyster bags filled with sand produced the best growth at sites where conditions allowed for these methods. The soft mesh Florida bags did not accumulate sediment as intended so often clams were on the surface in the bag rather than in sediment. The surf clams did show remarkable growth when conditions were right. Seed planted under net in July 2017 at 18mm reached a marketable average length of 39mm (>1.5”) by the end of 2017 at one of the locations.

Data analysis is still under way. A presentation on this work will be given at the Northeast Aquaculture Conference and Exposition in Boston in January. The project team will publish a final report with recommendations for the best growing strategies with respect to what has been learned from this project. Below are some photos of the 2018 field work.

![Surf clams grown in plastic mesh oyster bags.](image)

![Clams under nets at the subtidal site in Barnstable.](image)

![Sampling at the subtidal site requires wetsuit and snorkel.](image)

![Clam samples were gathered using suction.](image)
Collaborating for success: USDA-SCORE Partnership

By way of Dennis Walsh, Certified Mentor, Cape Cod SCORE 225

In today’s challenging environment of shellfish farming, collaboration is the key to success. All the answers to owning and operating your own business are not vested in one place. Your challenge as a business owner and operator is to identify and seek out the various sources of information that will assure your business’s profitability. YOU’VE GOT THE FARMING PIECE DOWN, now how about that business plan?

One of those sources have been created through a partnership between the USDA and SCORE. This partnership offers FREE mentoring, training and resources for small business owners, farmers, ranchers, agribusinesses; and here in SE New England, shellfish farming. SCORE is the nonprofit resource partner of the US Small Business Administration. It’s mission, for the past 53 years, is to create small businesses, add employment and assure success of small businesses. They achieve this mission three ways:

(1) Free and confidential mentoring is available to improve chances of success by one-on-one business coaching to support the local USDA advice and counsel. If you prefer, mentoring can be done by phone, video or email. You can set up an appointment with a mentor either on line at Cape Cod and the Islands SCORE (https://capecod.score.org/content/find-mentor-67); Email: capecodscore@verizon.net, or by calling the Hyannis office at 508-775-4884. Mentors can meet you at our Hyannis office (270 Communications Way, #5-A ) or they can meet you in Eastham, Martha’s Vineyard, Nantucket or wherever is convenient for you. On Cape Cod, Martha’s Vineyard and Nantucket there are more than 50 “SCORE Certified” mentors ready to help you and your business open new markets, reach new customers, and achieve new goals. All mentors are highly successful business professionals and entrepreneurs, with expertise in almost every field.

(2) SCORE workshops provide training on critical topics in an environment where you can learn from experts and cohorts of similar businesses (https://capecod.score.org/content/take-workshop-34 ).

(3) SCORE Online resources can become your playbook providing step-by-step outlines and checklists to support small business strategies (https://capecod.score.org/content/browse-library-34 ). USDA also offers extensive online resources and mentoring now in partnership with SCORE (https://newfarmers.usda.gov/mentorship ). Additional resources from your local chapter of SCORE appear weekly in the Cape Cod Times. Fellow mentor, Marc Goldberg, recently offered additional resource links for the new USDA-SCORE Partnership (http://www.capecodtimes.com/news/20180819/help-your-new-agribusiness-succeed).

Volunteering at SCORE is a way for you to give back to your community, connect with fellow business owners and pass on your knowledge to the next generation of entrepreneurs in your community (https://www.wallacesfarmer.com/farm-operations/score-needs-volunteers-help-beginning-farmers ).

For more information about how the USDA/SCORE partnership can help you get to the next step in success in your business contact Dennis Walsh, (dennis.walsh@scorevolunteer.org) at SCORE Cape Cod and the Islands, or your local USDA representative, County Executive Director, Steven Ward (steven.ward@ma.usda.gov).
WORKSHOP ANNOUNCEMENT

Free Workshop – Status of Opportunities for Alternative Shellfish Aquaculture Species

Wednesday, December 12 from 1:00-3:00PM
Location: Harborview Conference Room, County Complex, 3195 Main St (Rt 6A), Barnstable, MA

Are you interested in growing shellfish other than oysters or quahogs? Does the idea of selling oysters for a shucked product appeal to you? Curious what the return on investment could be?

To register, please contact Abigail Archer at aarcher@barnstablecounty.org or 508-375-6702

In 2 hours you will learn about:

- Upfront costs required for blood clam & surf clam seed and gear purchases.
- The potential for reviving oyster processing capacity in Massachusetts.

You will be asked for your thoughts and ideas on:

Question #1 Is there potential for profit in growing blood clams (*Anadara ovalis*) and surf clams (*Spisula solidissima*)?

Question #2 Is there enough interest in growing these species that we should pursue hiring a consultant to prepare specific marketing and promotion plans for blood clams and/or surf clams?

Question #3 If yes, what questions and tasks should go into a scope of work for a consultant to prepare specific marketing plans for butter clams and blood clams?

Question #4 Is there potential for developing processing capacity for an alternative oyster market in Massachusetts?

Question #5 If yes, what are the next steps?

This workshop is organized by Cape Cod Cooperative Extension, Woods Hole Sea Grant, the Cape Cod Commercial Fishermen’s Alliance, and Wellfleet SPAT (Shellfish Promotion & Tasting) as part of a project funded by NOAA Sea Grant called, “Market Development to Diversify Shellfish Aquaculture Products in Massachusetts” The goal of the work is to address market hurdles that impede the advancement of aquaculture of two native shellfish species, surf clams and blood clams, and to determine how to expand the market for oysters beyond the “half shell” market. In February 2018 the MA Shellfish Aquaculture Marketing Working Group was convened to oversee the work for this project. It consists of 21 people involved in the shellfish aquaculture industry.
Nearly a decade ago, at Mook Sea Farm on the Damariscotta River in Maine, we experienced problems with our hatchery production of larval oysters due to high levels of CO₂ in our intake water. The negative impact of ocean acidification (OA) on larval bivalves in the laboratory is well established. Since hatcheries function as industrial-scale laboratories, it isn’t surprising that OA impacts on larval development have been noticed at both the West and East Coast hatcheries, although not all hatcheries have experienced poor production. Furthermore, since hatcheries operate under extremely controlled conditions, Mook Sea Farm and other hatcheries have overcome the problem by buffering our water. However, we are still wondering how OA will affect our grow-out operations where we grow oysters to market size, and where water chemistry is out of our control. The limited laboratory studies have shown negative impacts on juvenile oysters, but it is hard to translate lab results to multifactor field or aquaculture settings. CO₂ continues to increase in our atmosphere and the oceans, and at some point, carbonate chemistry may become an issue for not just shellfish hatcheries. From our perspective, it is important to try and understand all of this better before it becomes the next crisis, so we have a better chance to cope.

Mook Sea Farm has been working with multiple groups trying to understand the impacts of OA on commercially important species, including NECAN, which covers a geographic range from Long Island Sound to New Brunswick and Nova Scotia. Through the NECAN Industry Working Group, we have the opportunity to communicate with federal, state, and provincial agencies and researchers about industry research questions so that they can help meet our needs in answering these questions. The science outcomes will be more effective if they represent the questions of multiple industry members. We need to hear from you, to tell us what questions you have regarding the concerns you may have regarding how OA could impact your livelihood. Anonymous answers from this 20 question survey will be compiled and shared with federal funding agencies and scientists to help them develop new research funding opportunities that best meet the needs of industry members. (‘Industry’ refers to any operation that harvests cultured or wild marine organisms).

Check out the NECAN website to learn more about ocean acidification in the Northeast.
December 12, 2018
Free Workshop – Status of Opportunities for Alternative Shellfish Aquaculture Species
1:00-3:00PM
Harborview Conference Room, County Complex, 3195 Main St (Rt 6A), Barnstable, MA

January 9-11, 2019
Northeast Aquaculture Conference & Exposition & Milford Aquaculture Seminar
Boston Park Plaza Hotel
Boston, Massachusetts
http://www.northeastaquaculture.org/2019-program/

March 7-11, 2019
World Aquaculture Society
Aquaculture 2019
New Orleans, LA
https://www.was.org/meetings/default.aspx?code=AQ2019