



## Aquaculture Complements Fishing Communities

Although some commercial fishermen may consider aquaculture to be competition for their fisheries, the two industries are complementary contributors to the “seafood economy” and working waterfronts. Traditional commercial fishermen can use their skills and equipment to generate another source of income. During periods of low catch limits, aquaculture can help to offset contraction in the commercial fishing sector.

Many fishing families in New England and along the Atlantic are already engaged in aquaculture, either full-time or to supplement their traditional fishing income. Watermen from Maine to Florida are farming oysters, mussels, and clams; others are experimenting with seaweed and fish farming. The drivers for growth in aquaculture include the growing demand for local seafood, opportunities for training by Sea Grant and community colleges, improved state and federal permit coordination, and existing skills, equipment and infrastructure.

Aquaculture is just another link in the chain of technologies used to produce seafood. Hatchery fish often are raised and released for commercial and recreational catch (e.g., salmon and trout), and much of fisheries research supports both wild harvest and aquaculture. Commercial fishermen and aquaculturists use the docks, boats, and processing plants that support working waterfronts. Both provide commerce throughout the seafood supply chain in related industries such as equipment, supplies, feeds, processing, wholesaling, retailing, and food services. See below for some recent examples.

**Mussel farming in New England:** Mussel farming already provides marine-based jobs for fishermen. Fishermen in Martha's Vineyard, MA, Newport, RI, and Portsmouth, NH raise mussels at 7 offshore sites in state waters using submerged longlines. NOAA Fisheries recently provided a grant to Salem State University to support a demonstration mussel farm in federal waters off the Massachusetts coast. The project trains local fishermen to farm mussels and the participants are working to obtain federal permits before farming can begin.



**New oyster farms in Maryland:** Disaster funds allocated to the State of Maryland through NOAA Fisheries are being used to train watermen in oyster farming and provide incentives to start oyster farming ventures. NOAA Fisheries worked with state and federal agencies to decrease regulatory impediments to shellfish permitting. During the past year, 40 new shellfish farms (half started by watermen) obtained leases with another 40 or so permit applications pending.



**Portsmouth fishermen operate steelhead, mussel farm:** Over the last several years, fishermen from Portsmouth, NH have been learning the basics of finfish and shellfish aquaculture. Recently, New Hampshire Sea Grant turned over day-to-day operations of a steelhead trout, mussel, and seaweed farm to eight local fishermen. The fishermen are now running the project, which supplies locally-raised seafood and provides income through sales directly to the fishermen. Coupling the steelhead farm with blue mussels and seaweed provides a valuable ecological service by removing excess nutrients from the surrounding water.



**Oyster farms in New England and Mid-Atlantic:** The lucrative half-shell market is attracting fishermen and others to start new oyster farms up and down the East Coast. Oyster farms such as Island Creek in MA, Matunuck in RI, and Chesapeake Gold in MD were all started by watermen. Seafood festivals in Milford, CT, Wellfleet, MA, and elsewhere feature local shellfish.



**Cod Academy:** Fishermen in Maine attended the ‘Cod Academy’ in 2011-2012, which trained fishermen in the art and science of aquaculture. One graduate is planning a new halibut farm and currently is working through the permitting process. See *Time Magazine’s* video report on the Cod Academy.



**Education programs for shellfish and seaweed aquaculture:** NOAA Sea Grant and the University of Maine have provided grant money to conduct an applied education program for commercial fishermen interested in shellfish and seaweed aquaculture. The program will be designed to prepare participants to file applications with the state and begin production operations. Project partners include the Maine Aquaculture Association, Maine Aquaculture Innovation Center, Coastal Enterprises, Inc., and the Island Institute.



**Clam farming in Florida:** Following the banning of gill nets in Florida in 1990, Florida Sea Grant initiated a technology transfer program to teach hard clam culture to displaced fishermen. Hard clam aquaculture now is a \$75 million industry supporting 365 certified clam growers.



**Seafood farming in Maine:** Oysters, clams, mussels, seaweed, cod, salmon and other marine species are cultured in Maine. Dock-side sales of \$100 million make Maine the #1 marine aquaculture-producing state in the country. Seafood farming grew from 330 to 624 jobs from 2003 to 2010, with as many as five times that number indirectly employed in equipment and feed supply, and in processing, marketing, and food service companies.



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