

## NOAA FISHERIES SERVICE



The Northeast region has a small but vibrant commercial marine aquaculture industry supported by a world class research and technology sector.

### **AQUACULTURE in the Northeast Region; FACT SHEET Sustainable Fisheries Division (SFD)**

1. Several Fishery Management Plans (FMPs) administered under the Magnuson-Stevens Act have framework provisions to accommodate aquaculture development in the EEZ. These include: Atlantic salmon (50 CFR 648.41); Atlantic sea scallop (50 CFR 648.55); Northeast multispecies (50 CFR 648.206); Atlantic herring (50 CFR 648.206); and spiny dogfish (50 CFR 648.237). The framework provisions provide flexibility through which the New England Fishery Management Council, in conjunction with the NMFS Northeast Regional Office, can initiate action to add or adjust management measures, consistent with FMP goals and objectives, to facilitate aquaculture development in the EEZ.
2. SFD issues Letters of Acknowledgment (LOA's) for aquaculture research that meets the criteria for scientific research. This provides assurance that such activities may be conducted legally, so long as they are conducted within the bounds of the scientific research plan reviewed by NMFS.

### **Habitat Conservation Division (HCD)**

1. The HCD is involved with aquaculture primarily through coordination with the Army Corps of Engineers, which has regulatory authority under the Rivers and Harbors Act of 1899, for all structures placed in navigable waters. Primary focus has been given to the potential environmental impacts associated with commercial salmon farming in Maine. The NMFS Northeast has collaborated with the Maine Department of Marine Resources to develop a streamlined process to develop a state/federal finfish aquaculture permit program. The State has effectively assumed the lead for implementing the program, minimizing impacts to the marine environment.



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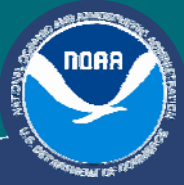


Over 65 species are farmed in the region, which encompasses states from Maine to Virginia. Farmed species in the Northeast include fish and shellfish farmed as food for human consumption as well as hatchery-raised species used for enhancement – to support important commercial and recreational fisheries in the region or for habitat and endangered species restoration.

2. In areas outside of Maine, HCD review of aquaculture permits is focused on shellfish (American oyster, hard clam, bay scallop and blue mussel) aquaculture and enhancement in intertidal and shallow subtidal areas. Recent permit reviews include the introduction of the Asian oyster, *Crassostrea ariakensis*, into the Chesapeake Bay watershed and Atlantic cod aquaculture in Maine coastal waters.
3. The NMFS Northeast has collaborated with the Commonwealth of Massachusetts to develop environmental safeguards for all aquaculture activities while striving to consolidate state and federal permit regulations into a singular, predictable process.

### **Protected Resources Division (PRD)**

1. The NMFS Northeast has responsibility for the protection and recovery of anadromous and marine species listed under the Endangered Species Act. All federal agencies permitting, funding or carrying out activities must consult with the Protected Resources Division to determine the potential effects of those actions on listed species. In this capacity, PRD assesses federal actions (including review of permits for aquaculture operations) for their potential to adversely affect listed or proposed species and their habitats. In these reviews, PRD has considered the potential impact of aquaculture facilities on benthic habitat as well as the risk of entanglement of marine mammals or sea turtles from the aquaculture structures themselves.
2. Both before and after the ESA listing of Atlantic salmon in 2000, NOAA Fisheries has been active in developing measures and protocols to minimize threats to Atlantic salmon. The new measures have been developed in cooperation with federal (ACOE, USFWS), and state (DEP, DMR, ASC) resource agencies and NGO's to minimize any adverse impacts from farmed Atlantic salmon to the environment and specifically to ESA listed Atlantic salmon. PRD staff was critical in implementing a HACCP based Containment Management System to minimize escapes of farmed Atlantic salmon.

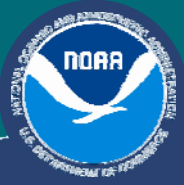


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The list of cultured species is long and varied, including shellfish and other invertebrates, finfish and other vertebrates and aquatic plants.

3. The NER RA serves as the U.S. Commissioner to the North Atlantic Salmon Conservation Organization (NASCO), a body charged with the conservation, restoration, enhancement, and rational management of Atlantic salmon stocks in the North Atlantic Ocean through international cooperation. The PRD serves as staff to the U.S. Commissioners to NASCO. In 1992, NASCO published protocols for the introduction and transfer of salmonids. These protocols established guidelines in use today relating to the review and approval of state and federal permits relating to Atlantic salmon rearing for restoration, and commercial aquaculture operations. In 2006, NASCO adopted a Resolution to Minimize Impacts from Aquaculture, Introductions and Transfers and Transgenics on Wild Atlantic Salmon Stocks (The Williamsburg Resolution). In addition, NASCO has created a Liaison Group to provide an international forum between the salmon farming industry and NASCO. The Group has developed Guiding Principles for its work and Guidelines on Containment of Farmed Salmon. In 2009, an international Technical Task Force was formed to develop guidance on best management practices to address impacts of sea lice and escaped farmed salmon on wild salmon stocks.
4. The PRD, under provisions of the Marine Mammal Protection Act, also has responsibilities to protect and conserve marine mammals under U.S. jurisdiction. In 1996, the NMFS Northeast created the “Gulf of Maine Aquaculture-Pinniped Interaction Task Force”. This group comprised representatives from industry, environmental organizations, state resource agencies, and academia. The task force addressed issues or problems regarding pinnipeds interacting in a dangerous or damaging manner with aquaculture operations in the Gulf of Maine, and recommended alternatives to mitigate such interactions.



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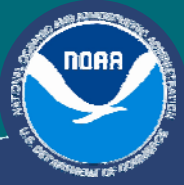


As a federal agency under the U.S. Department of Commerce, the National Oceanic and Atmospheric Administration (NOAA) is at the forefront of a national initiative to help the United States become more self-sufficient in the production of seafood.

### State, Federal and Constituent Programs Office

The State, Federal and Constituent Programs (SFCP) Office has long been active in northeast aquaculture. The SFCP Office serves as the primary point of contact to represent the NMFS Northeast Regional Office in national agency deliberations, coordinate exchange of related information among regional units, and help integrate aquaculture management, scientific and regulatory expertise as it relates to regional aquaculture initiatives in NOAA Fisheries. Particular attention is given to pending legislation that would authorize a dedicated permitting authority for the conduct and promotion of aquaculture operations in federal waters.

- 1) In January of 2009 the SFCP made a major leap in its capabilities by the hiring of an aquaculture point-point-of-contact for the region. This places a dedicated aquaculture expert in the office to offer enhanced technical advice to regional constituents on a broad spectrum of aquaculture activities. This position is also charged with communicating with the industry in the region to enhance the industry and NMFS role in aquaculture development. The addition of this position has enhanced the offices ability to deal with aquaculture related activities.
- 2) Grant programs administered by SFCP have supported aquaculture-related research, management, and development. The three primary programs have been the Commercial Fisheries Research and Development Act (CFRD) [repealed in 1986], the Fishing Industry Grants (FIG) Program (1994-1996), and the Saltonstall-Kennedy (S-K) Grant Program. During the 23 year period of the CFRD Program, approximately 80 aquaculture-related projects at a federal funding level of about \$8.0 million were conducted by the New England, Mid-Atlantic and Great Lakes States.



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NOAA's approach is to foster robust domestic aquaculture production as a complement to wild harvest fisheries. Since 2008, the agency has been expanding its national program into the NOAA Fisheries Service's regional offices.

- 3) In the mid 1990's, SFCP administered 22 projects under the FIG Program totaling \$4.1 million. Project objectives were to help restore overfished New England groundfish and shellfish stocks through hatchery programs, as well as to provide new business opportunities for displaced fishermen. Other funded projects have included a training program for commercial shellfishers and other underemployed industry participants on the Island of Nantucket, and a bay scallop enhancement investigation in the Peconic Bay watershed of Long Island, New York, where the resource was devastated by a "brown tide" outbreak.

In 2002, \$2.5 million grant funding to NMFS Northeast regional constituents under the S-K Program supported 12 studies on Atlantic salmon aquaculture in Maine that included provision of vaccines and medication to cultured Atlantic salmon for controlling disease outbreaks and engineering approaches to control escapees from net operations.

In 2009 NOAA was the vehicle for the granting disaster relief funds to the Chesapeake Bay blue crab fishery. The disaster relief funds, 15 million dollars to both Maryland and Virginia, were to offset the effects of the collapse of the blue crab fishery. A major portion of this relief funding will be used to explore the potential of oyster aquaculture as an alternative livelihood for displaced fishermen. Funds will be used to restore wild oyster habitat, and to train current blue crab industry participants in oyster aquaculture.

In 2009 the SFCP was also involved in red tide disaster relief for the State's of New Hampshire, Maine and Massachusetts. In New Hampshire, the proposed projects funded by this program include an expansion of oyster culture in Great Bay aimed at diversifying the industry into areas not affected by red tide outbreaks.

In 2009 seven S-K proposals were selected in the Northeast Region totaling \$1.6 million dollars. The projects are:



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This regional focus better connects the agency's national program with issues in the Northeast, Southeast and Southwest regions.

- Development of a technology platform for the assessment and controlled delivery of therapeutic bacteriophages in aquaculture.
- Use of alternative lipid sources and finishing feeds to improve the nutritional value and safety of aquaculture products.
- The development of a probiotic feed supplement for the American lobster (*Homarus americanus*).
- Biofouling tunicates on shellfish aquaculture gear as potential vectors of harmful algal introductions.
- Addressing issues of hatchery production and grow out of Sea urchins for aquaculture development in the Gulf of Maine.
- Epidemiological studies on a parasite ciliate of blue crab (*Callinectes sapidus*) and its possible role in winter mortalities.

Copies of aquaculture final progress reports detailing study objectives and accomplishments may be obtained from the SFCP Office.

- 4) In 1998, the NMFS Northeast Regional Office provided funds to the Atlantic States Marine Fisheries Commission to host a State/Federal Atlantic Coastal Aquaculture Workshop. That workshop emphasized the importance of lead roles in promoting aquaculture for state and federal agencies. The prominent areas of concern were addressed and included; minimizing the potential for disease introduction; non-indigenous species impacts upon wild stocks; public health; conflicts among resource user groups; and regulatory restrictions to mutually ensure resource protection and aquaculture industry development.
- 5) In September 2000, the NMFS Northeast hosted a Northeast constituent meeting on "Developing a Voluntary Code of Conduct for Responsible Aquaculture". That workshop addressed a variety of topics that stressed the need for dedicated funding specific to aquaculture in federal waters; the need to have inter-jurisdictional collaboration to promote standardization and prevent user conflicts; and the need to have fish and shellfish inspection protocols to meet foreign and domestic marketing standards.