

**Summary of the
Northeast Regional Aquaculture Point of Contact
2009 Site Visits**

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This map shows the locations of the sites visited by the NOAA Northeast Aquaculture Point of Contact in 2009. The locations range from the University of Maine in Orono, Maine, (the point farthest north) to the Virginia Institute of Marine Science in Gloucester Point, Virginia (the point farthest south).

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In 2009, the Northeast Regional Office (NER) of the National Marine Fisheries Service in conjunction with the NOAA Aquaculture Program supported a series of site visits by staff in the coastal states from Maine to Virginia. The purpose of these visits was to learn about all aspects of the region's marine aquaculture industry. In this context, 'the industry' includes commercial aquaculture companies as well as federal and state regulatory agencies, academic and private research facilities and extension contacts from NOAA Sea Grant and the U.S. Department of Agriculture.

Background

I came on board as the newly established NOAA Northeast Region's aquaculture point of contact in January 2009. My background includes aquaculture by way of a stint as Aquaculture Coordinator for the State of Rhode Island, working for a small biotech firm designing research systems for zebra fish and a period as the aquaculture extension person for a university. Of course, a short visit to the states in the region is only sufficient to give a flavor of the aquaculture industry in that state. I continue to plan more visits to meet people out in the field to keep up with ongoing developments in industry and research. I learned much on these visits, but a few things stand out. This summary will highlight those experiences.

Highlights of the Tour

To me, the most surprising aspect of the site visits conducted 2009 was the extent of the industry in the region. The range of culture from oysters, cod, urchins, halibut and other species in Maine to the wide extent of oyster culture in Virginia was eye opening. I had experience with the shellfish culture in southern New England but was unaware of the extent of activity in the rest of the region. In my personal travels along the coast you never even see many of the farms and remain unaware of the extent of the industry unless you are talking to someone with local knowledge of the industry.

For all intents and purposes, the industry has grown to this point while being under the radar of most federal regulators. Of course, the fact that all of the marine industry in the region is in state waters explains that. However all of the industry's growth has been reviewed at one point or another by federal regulators, i.e. the U.S. Army Corps of Engineers in consultation with NOAA's National Marine Fisheries Service, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and other agencies.

Note – the views and observations expressed in this summary are those of the author. They do not necessarily represent the views or official positions of the agency.

Another highlight of these visits was learning about the long history of aquaculture in the region. It is one thing to learn about the history of aquaculture in the world (first written work on aquaculture in 500 BC, etc.) and in the U.S. (first salmonid culture in the 1860's, etc.), but visiting a shellfish farm that was started in the 1880's in Connecticut, or a shellfish farm in Virginia that is owned by a seafood company that was established in the 1860's really made history come alive. It was clear that the people involved with aquaculture in this region are aware of their farms' and industry's history and are committed to keep them alive and going well into the future.

The people running the commercial operations I met on my travels were very open to having me visit their facilities and did not restrict my access in any way. Before I started the tour, I was concerned that being visited by a government official would be considered an imposition. After all, commercial operators have a business to run. But, wherever I went, the farmers, lab directors, and others were more than willing to talk with me. Their insights on everything from business practices, to the market, to research challenges were valuable. After the visits, many of the commercial operators thanked me for taking the time to meet with them and learn about their facility. I appreciated that.

The people I met who were involved in the industry generally had a high level of education. Many of the folks I met had been to graduate school and then went into the business. It was not unusual to find a Ph.D. running a small farm. In the academic realm it was surprising how many of the researchers had business experience. They realized that the research they were conducting was ultimately directed at making the industry more competitive and economically viable.

As I look back over the year, I realized that these site visits were invaluable for me as a way to see firsthand the extent of the industry in the region, the jobs it provides, the research and technical innovations that grow out of it, and the seafood it produces. The visits also proved valuable to the agency since the information I gleaned from the tour enabled me to assist other divisions within my office and to increase the visibility of NOAA among those in the aquaculture industry. I think this kind of personal interaction is important especially since one of the focus areas for NOAA is to educate the public about the role of sustainable aquaculture in the U.S. seafood supply.

Quick Tour

A quick review of the 2009 site visits, in chronological order beginning in January, starts at a small educational facility in Gloucester, Massachusetts. This hatchery is operated by the Massachusetts Institute of Technology Sea Grant. This facility is quite small and at the time of my visit held a few winter flounder. The emphasis of the facility was education efforts in the local high schools.

In February 2009, I visited the Salem State College's Cat Cove Laboratory in Salem, Massachusetts. This lab conducts research in the Cape Ann area working with commercial lobster industry participants growing mussels, as well working with the towns on the North Shore in enhancement of clam beds and clam aquaculture. The

principal investigators here are enthusiastic educators. The 2009 NER summer interns made a trip to the lab and I was very impressed by the ability of the professor to engage the interns.



Picture 1. Dr. Joe Buttner in the algal culture room at the Cat Cove lab.

In March 2009, I visited the Great Bay Aquaculture marine finfish hatchery in Portsmouth, New Hampshire. This facility has been producing marine finfish juveniles since 1995. The company is also involved in cod grow-out in marine cages in Maine. The operator of the facility is very knowledgeable and it was an interesting discussion and tour. One major point is that the majority of the production from this facility is exported out of the country. The operator found it ironic that the expertise to raise the fish in his hatchery was in the US but since the industry is more advanced in other countries most of his production goes there.



Picture 2. Cod broodstock in the Great Bay Aquaculture hatchery.

In April 2009, I visited New Jersey. This trip provided some of my biggest surprises. I hadn't suspected there was as much aquaculture activity in the state as I found. It shouldn't have surprised me to find this; after all, there is a town named Bivalve where I found mountains of oyster shells and old wooden oyster boats still engaged in the fishery. But, I was still surprised. One interesting fact is that much of the aquaculture industry in the state is operated by folks from the commercial fishing industry who have made a transition to farming. In many other states there has been conflict between wild harvesters and aquaculture as the transition takes place. Later in the process many of the farms end up being started by progressive wild harvesters. As it was explained to me, they saw the decline of the wild harvest fishery coming and made the transition in order to stay employed.



Picture 3. Oyster harvesting boats and piles of oyster shell in Bivalve NJ.

In May 2009, I visited NOAA's Northeast Fisheries Science Center laboratory in Milford, Connecticut. Here I visited with researchers in the lab. The Milford lab was one of the pioneers in shellfish aquaculture starting in the 1930's and the effort continues today with world class researchers working here. The research conducted ranges from shellfish disease and physiology to ecosystem services and effects of aquaculture on the environment. Many shellfish culture innovations that allows us to culture shellfish today grew out of the research conducted there. This cutting edge research continues. I also visited the State of Connecticut Aquaculture Coordinator whose offices are in the same location.



Picture 4. The small grey building in the center of the picture is the original Milford laboratory from the 1930's.

In June 2009, I visited the State of Maine in the company of the NOAA Sea Grant Aquaculture Program Manager and the NOAA Aquaculture Program's Southeast Regional Aquaculture Coordinator. This was a 5-day tour that covered operations and facilities from Southern Maine to Downeast Maine to Central Maine. Maine has the most diverse and productive aquaculture industry on the East Coast and is supported by the state. Academic support for the industry is also very active here. The state university system supports a varied research program that works hand-in-glove with the industry on animal health, environmental effects, business incubation, new species cultured and more.



Picture 5. A cod farm in downeast Maine.

Later in June I visited Rhode Island. Although it's one of the smallest states in the country, Rhode Island has a significant aquaculture industry. Here we visited shellfish farms, a shellfish distribution facility, a shellfish farmer who was in the midst of opening a shellfish restaurant (as a side note since this visit, I have had a chance to eat at the

restaurant, and the food was excellent), a university conducting investigations on shellfish and ornamental fishes, and a private company that was spun off from this research.



Picture 6. Sea horses being cultured in Rhode Island.

In September 2009, I made a visit to Maryland and Virginia. In the company of personnel from the NOAA Chesapeake Bay Office in Annapolis, Maryland, and the NOAA Aquaculture Program in Silver Spring, Maryland. For this tour we traveled from a marine biotech facility that cultures finfish and crabs in Baltimore, Maryland, across the Bay to a state hatchery in Maryland that produces 5 billion oyster larvae a year. Then we headed down the Eastern Shore to tour shellfish farms in Maryland and a clam farm in Virginia that sells 60 – 100 million hard clams a year into the national and international market. We continued back to the Western Shore of Virginia and visited a research hatchery at the Virginia Institute of Marine Science and continued up the shore visiting shellfish farms along the way. We ended up driving almost 600 miles and visiting 10 facilities. The stark contrast between the two states is amazing. Virginia has been leasing submerged lands in and around the Chesapeake Bay and its coastal areas for decades for aquaculture and, as a result, has a vibrant industry which is growing. Historically, Maryland has not been open to private leasing and as a result there is almost no private shellfish aquaculture in its tidal waters. Wild populations of oysters in both states are at all time historic lows.



Picture 7. A display demonstrating the ecological services provided by oyster reefs.

In November 2009, I visited Long Island, New York. The aquaculture industry here ranges from small boutique oyster farms to a large production facility located 25 miles from New York City. There is a dormant marine finfish farm on the eastern end of the north fork which is in the process of being revitalized. The farm was initiated in the mid 1990's, grew summer flounder for a few years, then when the economics did not work was mothballed. All of the equipment was removed from the water, but the leases were kept up. An underground shellfish hatchery rounds out the range of facilities I visited on Long Island. This hatchery was built in the 1950's and is certainly one-of-a-kind in my experience. The property is currently a preserve with the organization that operates it leasing the hatchery and associated infrastructure to a local shellfish culturist. The aquaculture industry is small but growing in this area.



Picture 8. An oyster company that has been in business for a 113 years.

All-in-all, it was an interesting series of site visits. I've learned a bit about the width and breadth of the marine aquaculture industry in the Northeast Region. I would say that's it's categorized by hard working, intelligent operators supported by first-rate researchers and supportive extension agents in each state. I was surprised at the amount of marine aquaculture that is in existence and the plans for expansion that are out there. It was not surprising that the people in the industry care deeply for the environment they work in. They want to keep the long rich aquaculture tradition going for the foreseeable future.