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AQUACULTURE SITUATION AND OUTLOOK REPORT 2009: NEW YORK

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Industry Trends and Outlook

New York State is diverse both geographically and in terms of aquaculture species and systems. The industry ranges from flow-through raceways to bottom culture of shellfish to intensive water reuse systems. Reliable production statistics are difficult to come by, but it is estimated that the State's aquaculture industry annually generates $20 million in farm-gate sales. These figures do not include state, county, and municipal finfish and shellfish production for resource enhancement purposes. The predominant cultured species in New York are trout, baitfish (e.g. golden shiners), oysters, northern quahogs, large and smallmouth bass, bluegills, and tilapia. Other products include bay scallops, koi, crawfish, winter flounder, and aquatic plants (e.g. water lilies, hyacinths, arrowheads).

Seed scallop. (Photo: Gregg Rivara)

Commercial Species List

- Bay scallop (*Argopecten irradians*)
- Brook trout (*Salvelinus fontinalis*)
- Brown trout (*Salmo trutta*)
- Eastern oyster (*Crassostrea virginica*)
- Northern quahog (*Mercenaria mercenaria*)
- Rainbow trout (*Oncorhynchus mykiss*)
- Tilapia (*Oreochromis niloticus*)

Addressing Industry Needs

Researchers, extension specialists, resource managers, industry associations, and concerned stakeholders all play a role in addressing industry needs. The following sections outline the new initiatives and recent accomplishments in these areas.

Aquaculture Research

Facilities conducting aquaculture research in the State include Cornell University, Stony Brook University, Long Island University, Brooklyn College, Dowling College, Morrisville State College, and various field stations including the Suffolk County Marine Environmental Learning Center operated by Cornell Cooperative Extension of Suffolk County.

Much of the funded research in the State is for shellfish restoration and closed system engineering for finfish. Some of the first salmonid and shellfish hatcheries in the nation were established in New York. The State's "breakthroughs" in aquaculture include innovative water reuse systems for finfish culture, an

Emerging Issues and Critical Needs

- The high cost of mandated fish health inspections at the State, federal, and international level, is having a major negative impact on private fish hatcheries and bait producers all over New York State. Many hatcheries are being forced to close, causing significant shortages of stocking-quality fish and bait in some areas. This will have far-reaching, negative consequences for sport fishing, tourism, and recreation industries this year and into the future. Legislation needs to be passed establishing a government-supported, fish health inspection facility in the upstate area, where the majority of fish farms are located. By establishing this facility, growers will be able to have their fish inspected at an affordable price. With Cornell University being centrally located and having the necessary qualified personnel to do the job, it is the most logical choice for such a facility.
- Invasive fish diseases such as Viral Hemorrhagic Septicemia (VHS) and other serious diseases are beginning to cause havoc in New York's fish hatcheries and bait facilities. Recently, one of the state's largest hatcheries has been forced to curtail its stocking program due to an invasive fish disease. The suspension of production at this fish farm is having serious negative repercussions for the farm owners as well as the surrounding community. Procedures and legislation need to be developed that would help fish growers through disease related crises. These procedures need to include, but not be limited to, the provision of state sponsored expertise to help the grower eradicate the disease problem, a fund designed to cover the cost of disease eradication procedures, support for the positive disposition of the farm's remaining inventory, and a save-harmless plan of insurance which would protect the grower's income and investment while the disease issues are being eradicated.
- Shellfish farmers who culture on-bottom need research quantifying the ecological effects on the benthos during harvest. This is a major constraint to further development of the industry.
- New York farm-raised trout generate more than $6.1 million in sales annually, rivaled only by shellfish sales of $7.4 million. The sale of largemouth bass as a food fish could eclipse both of these enterprises once current regulations are modified to reflect the modern management practices now being utilized on New York's fish farms. Legislation needs to be enacted to allow for the sale of largemouth bass (black bass) as a food fish in New York State, which would foster new economic growth, enhance the locally grown food movement, and spur increased commerce for New York's aquaculture industry.
- With the growth of cottage-scale shellfish farms comes the need for more underwater land. While there are a number of ways to access these lands, it has become a constraint for growth. A solution on the horizon is the leasing of underwater land owned by the County of Suffolk (the eastern-most county in New York State). While the county has had this capability since 1969, nothing has been done due to the onerous requirements of the enabling legislation and baymen opposition. Since the brown tides of the 1980s and 1990s and greater restrictions on finfish landings, baymen have looked at shellfish farming as another tool to maintain their lifestyle and remain on the bay. In 2004, with support from the baymen, a revamped lease law was put into effect. This law made it easier for the county to lease lands for shellfish cultivation. The county has devoted staff and approximately $600,000 to develop a leasing program which must be in place by the end of 2010 when the law sunsets.

Shellfishing on Long Island, NY. (Photo: Gregg Rivara)

axial-flow floating upweller nursery system for shellfish, lipid enrichment of oyster broodstock for increased production, innovative mechanical harvesting and sorting devices for northern quahogs and oysters, and hormonal manipulation of fish to increase production.

Aquaculture Extension

There are two, full-time extension specialists in the State and a number of personnel that have part-time aquaculture extension responsibilities. The primary extension program is shellfish aquaculture, which includes both private and government-operated shellfish farms. Assistance is given to established culturists (diseases, marketing, technology) as well as new start-ups (permit assistance, business planning). A major extension program accomplished with State and federal funds and in cooperation with a town shellfish hatchery involved the retraining of commercial fishers (mainly inshore fishers or "baymen") to culture oysters. The program became the nucleus for the still expanding, cottage-scale shellfish aquaculture industry on eastern Long Island.

Aquaculture Education

There are two "aquaculture education centers" in New York. One is at the Suffolk County Marine Environmental Learning Center (SCMELC), operated by Cornell Cooperative Extension (CCE) of Suffolk County, which focuses on shellfish aquaculture. The other is at CCE of New York City in the Bronx, and deals largely with water reuse systems and aquaponics.

Both programs send representatives to schools as well as have students come in to learn the basics of aquaculture. The Suffolk County program operates summer day camps that expose children to an intensive program that includes information on growing shellfish from egg to market size.

Harvesting perch eggs in pond. (Photo: Ted Universal)

Aeros algae system. (Photo: Gregg Rivara)

In 2000, the shellfish gardening program SPAT (Southold Project in Aquaculture Training) was initiated by CCE of Suffolk County. Incorporating monthly classes, thrice weekly volunteer workshops, a community shellfish garden, and social events, the program has grown to 200 member families. SPAT volunteers work closely with the resource enhancement hatchery and nursery at the SCMELC and run their own hatchery on the site.

Cornell University offers an annual short course on the principles of recirculating aquaculture. This year the course was held July 13-16 on Cornell's Main Campus, marking the 15th consecutive year the course has been conducted. The course is also offered in a distance learning, self-paced format. The 16th annual short course will be offered July 12-15, 2010 on the Cornell main campus; see http://www.bee.cornell.edu/outreach/aquaculture for details.

Aquaculture Resources

New York Sea Grant
http://www.seagrant.sunysb.edu/

Cornell University Cooperative Extension
http://www.cce.cornell.edu/~suffolk/Programs/MARhome.htm

Northeastern Regional Aquaculture Center
The NRAC is one of five Regional Aquaculture Centers established by the U. S. Congress which supports research and outreach efforts to promote the development of the aquaculture industry.
http://www.nrac.umd.edu

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