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## AQUACULTURE SITUATION AND OUTLOOK REPORT 2007: NEW JERSEY

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### Industry Trends and Outlook

The northern quahog or hard clam (*Mercenaria mercenaria*) forms the basis for the largest hatchery linked shellfish aquaculture in the state which began in 1976. At present there are about 40 active growers (down from about 60 ten years ago) and four active commercial hatcheries. The largest part of the activity is centered in lower Ocean and Atlantic Counties. The Delaware Bay oyster industry is drastically reduced in size with most of the harvest coming from the seed beds, mainly because of problems with MSX and Dermo disease. New Jersey Department of Environmental Protection (NJDEP) Bureau of Shellfisheries is in the process of establishing Aquaculture Development Zones mainly in Delaware Bay, but this has been an ongoing process for at least five years with no definitive areas specifically designated and permitted as of this date.

There is one long-lived trout hatchery that grows fish mainly for stocking purposes and a small amount for market. There is one medium-sized koi farm and several baitfish and ornamental businesses.

The New Jersey Department of Agriculture (NJDA) currently licenses 183 aquaculture operations, the majority of which are shellfish (164), followed by finfish (15) and aquatic plants and ornamentals (4). These numbers differ from the 2005 Census of Aquaculture, which lists 87 aquaculturists in New Jersey because the U.S. Department of Agriculture's National Agricultural Statistics Service (USDA NASS) only surveys commercial farms of \$1,000 annual farm-



Ed Frankovich planting seed for overwintering.  
 (Photo: Gef Flimlin)

gate sales or more. The total production from these operations amount to \$3.714 million. Of interest is the value of the koi industry. Eight farms earned greater than \$13,000 in sales, which is the highest average price per fish (\$23.02) in the U.S.

### Emerging Issues and Critical Needs

- Market research for cultured shellfish
- Value-added products from cultured species
- Interest by Natural Resource Regulatory Agencies in improving production



“Baymen’s Pride” clams displayed at ShopRite. (Photo: Joseph Myers)

## Commercial Species List

- Northern quahog (*Mercenaria mercenaria*)
- Eastern oysters (*Crassostrea virginica*)
- Angelfish (*Pterophyllum scalare*)
- Bluegill (*Lepomis macrochirus*)
- Brook trout (*Salvelinus fontinalis*)
- Brown trout (*Salmo trutta*)
- Comet (*Carassius auratus*)
- Discus (*Symphysodon* spp.)
- Fathead minnow (*Pimephales promelas*)
- Hybrid striped bass (*Morone saxatilis x M. chrysops*)
- Koi (*Cyprinus carpio*)
- Largemouth bass (*Micropterus salmoides*)
- Mummichog (*Fundulus heteroclitus*)
- Rainbow trout (*Oncorhynchus mykiss*)
- Tilapia (*Oreochromis* sp. & *Sarotherodon* sp.)
- Triploid grass carp (*Ctenopharyngodon idella*)
- White sucker (*Catostomus commersoni*)
- Yellow perch (*Perca flavescens*)

## Addressing Industry Needs

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

## Aquaculture Research

Research in New Jersey is mainly conducted through Rutgers School of Environmental and Biological Sciences/New Jersey Agricultural Experiment Station Haskin Shellfish Research Lab in Port Norris. There is a Multi-Species Aquaculture Development facility which is constructed but not

presently in operation. There is also some freshwater finfish culture coupled with vegetable aquaponics and ornamental aquatic plant culture at the Rutgers EcoComplex in Columbus.

The New Jersey Agricultural Experiment Station is now working with Quality Koi, Inc. of New Jersey to integrate a research program with koi and plants in the EcoComplex greenhouse. The process will examine the economic benefits of growing koi in recirculation systems instead of ponds in the northeast region.

Other research may be conducted by individuals in other institutions of higher learning, though there is no specific clearing house for the work that is being done in-state. Some research in aquaculture has been funded over the years through the New Jersey Sea Grant Program, and some of those reports can be found at: [http://www.njmssc.org/Sea\\_Grant/Publications\\_Directory.htm#TechnicalReports](http://www.njmssc.org/Sea_Grant/Publications_Directory.htm#TechnicalReports).

Significant accomplishments of research faculty include:

- Development of tetraploid technology which allows "natural" triploids to be produced.
- Researchers have found that that QPX is in part, stock and latitude dependant.
- Distinguishing oyster species from one-another in China (this has implications on the potential introduction of *Crassostrea ariakensis* in the U.S.).
- Development of a budget for loss of oyster shell in the seed beds.

The New Jersey Department of Agriculture is involved with seafood and aquaculture marketing research. The NJDA, in cooperation with Rutgers University and University of Delaware Sea Grant, is completing a two-year market research study on ethnic live seafood markets in the northeast region. This \$56,500 matching funds grant is being completed through the USDA Federal-State Marketing Improvement Program. The project includes a survey of market operators and consumer research of live seafood customers to determine buying habits and preferences of live seafood. The project has also developed a multilingual consumer directory so consumers can be more familiar with retail restaurants and supermarkets that sell live seafood.

In 2006, New Jersey Department of Agriculture, Rutgers Cooperative Extension and Food Innovation Center assisted a group of seven aquaculture producers in the state with marketing hard clams through a \$47,100 USDA Value-Added Producer Grant. The seven entrepreneurs formed the New Jersey Seafood Marketing Group and developed unique retail

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packaging and marketing campaign under the Baymen's Pride trademark. The group has partnered with Wakefern Corporation, and this item continues to be sold in major supermarket chains including ShopRite stores across New Jersey, New York and Pennsylvania.

### **Aquaculture Extension**

There is presently one extension agent working in commercial aquaculture, based at Rutgers University. Extension programming focuses on shellfish aquaculture, specifically the nursery and growout phases of the hard clam, but has recently included ornamental aquatic plant production. At present, Rutgers Cooperative Extension is leading the Barnegat Bay Shellfish Restoration Program: <http://ocean.rcrc.rutgers.edu/marine/bbsrp1.html>

There are not any extension centers in the state, however, the Multi-Species Aquaculture Development Center in Cape May will likely have an outreach component when it is completed. Part of a research greenhouse in the Rutgers Eco-Complex in Columbus has a recirculating tilapia system linked with hydroponics for vegetables and aquatic plants, as well as a demonstration project using aquaculture as the model to teach high school math and science in the classroom.

### **Aquaculture Education**

There is an aquaculture education program at Cumberland County College which has a large tilapia production facility in it. There are also about five high schools which have aquaculture course work or formal aquaculture curricula.

## Aquaculture Resources

New Jersey Aquaculture Information:

<http://www.jerseyseafood.nj.gov/aquaculture.html>

ReClam the Bay <http://www.reclamthebay.org>

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