Aquaculture seen as a prime driver for South Jersey's seafood industry

Published: Sunday, January 29, 2012, 5:58 PM

Phillip Tomlinson/The News of Cumberland County

Aquaculture development is key to the expansion and sustainability of New Jersey’s $147 million wholesale seafood industry, a report by the state Department of Agriculture suggests.

Local aquaculture production is currently limited, but there are a number of innovations in the field, and fledgling operations springing up in South Jersey that could open up the economic opportunities for local watermen.

The 24-page report, entitled Opportunities and Potential for Aquaculture in New Jersey, examines the burgeoning aquaculture cultivation business and makes recommendations for future policy consideration. The report also discusses the potential effects of aquaculture cultivation on commercial development, eco-tourism and environmental sustainability.

Aquaculture is the farming of aquatic organisms, such as fish and shellfish, under controlled conditions. Aquaculture differs from the more traditional harvest of wild fish and seafood, and is recognized as a way to meet ever-increasing demand without overtaxing fragile natural ecosystems.

Many activities already performed by local watermen, such as preparing sections of the bottom and manipulating wild oyster stocks, border on aquaculture but are more about controlling wild natural resources than cultivation.

According to Associate Director of the Haskin Shellfish Research Laboratory, and co-author of the report, John Kraeuter, true aquaculture production uses various types of laboratory grown seed oysters that have been hybridized to be largely sterile. This allows for a year-round harvest that isn't interrupted by the breeding season of wild shellfish stocks.

These genetically manipulated oysters are also largely resistant to the diseases that trouble wild stocks, and grow to a harvestable size faster.
Kraeuter sees potential for local enterprise in the aquaculture industry. "The industry is likely to expand in coming years," he said.

Definitive predictions are hard to make, however, as navigating state and environmental regulations is difficult, and requires cooperative efforts with lawmakers.

"There is certainly potential, but it is so involved with regulatory issues and various aspects of state government that it is hard to say," Kraeuter noted. "We currently have a fledgling rack-and-bag industry along the Cape Shore Flats, and the state has requested that people be allowed to bid on additional leases."

Rack-and-bag oyster farming places laboratory grown seedling oysters on racks fixed to the bottom of a tidal waterway, where they are tended until harvest as the tide allows.

"There is a very large area in the lower bay not being utilized because of disease pressures on wild stock," Kraeuter said.

One innovation that is catching on locally is the oyster cage method. Oyster cage farming involves raising seedlings in a laboratory, and then placing the growing oysters in cages which are submerged in the bay. This provides an advantage over the rack-and-bag method, which utilizes fixed structures on the bay floor, and requires the structures be tended at low tide. Oyster cages can be tended on any tide.

The report outlines several policy suggestions for state lawmakers, including modeling New Jersey’s aquaculture development on that of other states.

Kraeuter explained the disparity between aquaculture development in New Jersey and Virginia.

"Both states began developing aquaculture around the same time in the 1970s, primarily of hard-shelled clams. In New Jersey we produce about the same amount of hard shell clams through aquaculture now as in the 1980s. Virginia produces about 10 times that amount now."

This new Aquaculture Development Plan is the first report of its kind drafted by the Department of Agriculture since 1992, and reflects the changes in the business of aquaculture over the past 20 years.

Since the passage of the Aquaculture Development Act of 1998, the industry has undergone many changes, and has come to be regarded more as an agricultural pursuit than a matter of natural resource management.
According to the Department of Agriculture, over 30 aquaculture operations across the state employ more than 170 people in various capacities, and the total value of reported harvesting was worth approximately $5,787,000 in 2011.

However, while New Jersey produces about $4 million worth of farmed shellfish annually, most of the local market for raw-bar clams and oysters is sustained by shellfish grown and harvested outside of the state.

The report speculates that two "green" jobs will be created for every acre of shellfish cultivated using current intensive culture technologies.

New Jersey is perfectly sited to maximize the commercial value of aquaculture development. With large urban markets like New York and Philadelphia, Pa., providing a ready demand, and important infrastructure, including six major commercial fishing ports, already in place, New Jersey is in a good position to capitalize on aquaculture investment.

The report also emphasizes the importance of commercial fishing to the state's tourism industry, citing millions of visitors to coastal New Jersey whose experiences are enhanced by the local Bay culture.

Long thought to have only a negative impact on natural ecosystems, aquaculture is increasingly being recognized as having a positive environmental effect. The report references extensive scientific research documenting the free ecological function of aquaculture apparatuses, and the increased emphasis on clean water necessary for cultivating edible mollusks.

But potential exists for the aquaculture business outside of bivalve mollusks and traditional food species.

Bait-fish used in recreational fishing, a multi-million-dollar industry in N.J., are largely imported from other states. Production costs, including high taxes and fees for clean water and electricity, limit the business potential of bait-fish hatcheries in New Jersey.

It is also difficult for hatchery operators to obtain farming permits, which would alleviate the tax burden, because they do not meet the required acreage for recognition as a farming operation.

But Kraeuter stresses that drastic changes to the legal landscape are unnecessary. "We don't need a change in laws, but rather a change in how those laws are interpreted," he said.
There is also an emerging demand for ornamental fish and aquatic plants; as of 2011 there were only two farms in New Jersey that serve this increasingly lucrative market.

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