

# Aquaculture Development Zones Proposed for Coastal Waters

*By Jim Joseph, Chief, Bureau of Shellfisheries*



Since pre-colonial times, New Jersey's coastal waters have provided a bounty of fish and shellfish resources that have been harvested for the personal consumption of the harvester and as an important commercial commodity within the regional economy. Throughout the state's history, New Jersey shellfishermen have adapted to fluctuations in fishery stocks and consumer preferences and changed their harvest practices to earn a living and provide food for an ever-increasing world population. One such adaptation pursued by some individuals has been to shift solely from the harvest of "wild" stocks to a process which would allow them to take a more active role in rearing a product for market. This cultivation of fish and shellfish is commonly referred to as aquaculture.

Since the early 1800's individuals have leased parcels of bottom in New Jersey's estuaries to harvest and grow shellfish. The first precursor to true shellfish aquaculture in this region was the planting of oyster seed (small, young oysters) obtained from other states for planting in the New York Harbor area, a practice which was adopted due to the depletion of oysters on natural beds. In Delaware Bay, oystermen of the early to mid-1800's began to take a more active role in the rearing of a product for market by moving oysters from natural seed beds of the upper bay and lower salinity creeks to parcels in higher salinity waters of the lower bay where the oysters grew faster and developed better meat quality.

The other principal species reared in New Jersey's coastal bays is the hard clam. Although commercial clammers have leased parcels of bay bottom from the state for one hundred years or more, true aquaculture of hard clams did not occur in New Jersey until the 1970's when shellfishermen in the southern part of the state acquired the ability

to spawn hard clams in hatcheries and rear them to market size on their leases. Although they still had to deal with the losses due to predation, theft (poaching) and the vagaries of nature, many hard clammers embraced aquaculture as a means to provide a more consistent (in both quality and quantity) product for market. By some estimates, approximately 25% of New Jersey's commercial hard clam landings are currently produced via aquaculture.

The shellfish statutes, N.J.S.A. Title 50, which address the preservation and improvement of the shellfish industry and resource of the state, have evolved over the last 100 years. These laws govern wild stocks as well as the traditional on-bottom culture of oysters and hard clams. Since Title 50 only provides for traditional bottom culture of molluscan shellfish, there has been no legal mechanism available to individuals wishing to pursue certain innovative culture techniques which have been employed elsewhere. However, change is on the horizon.

Since the passage of the Aquaculture Development Act (Act), which created the Aquaculture Advisory Council (AAC), the New Jersey Department of Environmental Protection (NJDEP), Department of Agriculture, Rutgers University and members of the shellfishing/



aquaculture industry have been reviewing Title 50 and other regulations to fulfill the act's goal of expanding the existing shellfish aquaculture leasing program for the benefit of the aquaculture industry "while protecting common use rights of the public and assuring the integrity and protection of the natural wild stocks and their habitat". In the nation's most densely populated state, with a multitude of environmental and user group issues to consider, achievement of this goal will not be easy, but once realized, will be a benefit to all.

One of the key components of these initial efforts to expand aquaculture is the establishment of Aquaculture Development Zones (ADZ) along the Atlantic Coast and Delaware Bay. Individuals wishing to explore "innovative" aquaculture practices (i.e., practices involving the placement of structures on the bottom or in the water column to hold and rear organisms to market size) would be directed to do so within the established ADZs.



Such structures range from the placement of protective screening placed on the bottom to reduce predation on planted hard clam seed, various racks/cages placed on the bottom to floating cages on the surface. The site selection process has involved the consideration of numerous criteria, including suitability of the site for specific types of aquaculture practices, boat traffic, use of the locations by other recreational and commercial groups and various ecological factors. The Division's Bureau of Shellfisheries (Bureau) will be conducting biological assessments of the proposed ADZ locations to assess the natural productivity of these areas. The Bureau has been performing such assessments for traditional shellfish leases along the Atlantic Coast for over 25 years to provide the Atlantic Coast Section of the New Jersey Shell Fisheries Council (ACSC) with resource information to aid them in their decision making process regarding the granting of such leases. The NJDEP and the ACSC have a long-standing policy of not leasing naturally productive areas so that they can remain open for all shellfishermen (both recreational and commercial) to utilize. The areas where new leases are generally approved have the environmental criteria (e.g., salinity, pH, substrate type, etc.) suitable for shellfish culture but have a history of limited natural shellfish production. In this way, productive shellfishing areas remain accessible to everyone and the marginally productive areas are enhanced via the efforts of the aquaculturists. Some of the areas under consideration have been discussed at multiple meetings of the New Jersey Marine Fisheries Council and the New Jersey Shell Fisheries Council. There will be additional opportunities for public comment regarding potential ADZ sites at future council meetings and via the permitting process.

In numerous meetings of the AAC to discuss expansion of the aquaculture leasing system, it has been determined by representatives of various state and federal agencies that the placement of any structures within navigable waters would require permits from the U. S. Army Corps of Engineers (ACOE) and NJDEP. To facilitate aquaculture development and relieve individual aquaculturists of this often time-consuming task,

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the New Jersey Division of Fish and Wildlife has proposed to apply for the required permits for the range of activities and structures earmarked for a specific ADZ. Once established, the Division will mark the outer boundaries of the ADZs with buoys/markers approved by the U.S. Coast Guard to identify these aquaculture areas to recreational and commercial shellfishermen, anglers and the general public.

The State of New Jersey Aquaculture Development Plan (1995) estimated that aquaculture in New Jersey could ultimately result in the creation of 7,500 jobs in the production phase of aquaculture and yield annual revenues of \$750 million. The creation of Aquaculture Development Zones will be the first step in the expansion of aquaculture in New Jersey's coastal waters. At a time when natural stocks of many species of fish and shellfish are down from historical levels, an increase in aquaculture production will help take pressure off wild stocks, provide a consistent product for market and benefit the economy of New Jersey.