

Massachusetts Ocean Partnership
Partners Meeting: What is Aquaculture and Why do it?
10 February 2009

Dr. Joseph K. Buttner
Northeastern Massachusetts Aquaculture Center
and Department of Biology
Salem State College
Salem, MA 01970
jbuttner@salemstate.edu, 978-542-6703

Aquaculture may be characterized as the cultivation and harvest of aquatic organisms. Organisms may be grown in a variety of systems from open systems such as minimally managed ponds and net-protected tidal flats through semi-closed systems such as net pens and cages to closed systems such as intensively managed, recirculating aquaculture systems. Aquaculture may be pursued for commercial, restoration and/or enhancement purposes. Most commonly grown are finfish and shellfish, but other aquatic organisms are cultivated such as microalgae, seaweed, frogs, turtle, and alligators. In coastal waters of Massachusetts most aquaculture targets bivalves, particularly the Eastern oyster (*Crassostea virginica*), quahog (*Mercenaria mercenaria*) and softshell clam (*Mya arenaria*). Private, public and a combination of private:public aquaculture are pursued by shellfish growers on nearly 1,500 acres of tidal and subtidal waters.

Aquaculture is practiced for the same reason that terrestrial agriculture is embraced. It is more efficient, easier to manage and possesses an inherent incentive to be sustainable. For over a decade, commercial harvests from capture fisheries have remained static despite increased effort, targeting nontraditional species and integration of new technologies. Many capture fisheries are over-exploited and regulations increasingly restrict harvest. Essentially, all increased production of seafood realized during the last decade and anticipated for the future originates from aquaculture. Nearly 84% of the seafood consumed in the United States is imported and half of those imports are farm-raised; an incorrigible statistic given our West, Gulf, East and Great Lakes coasts!

The Commonwealth of Massachusetts has a long and proud tradition of fishing and working water front, as epitomized and illustrated by the Fisherman statue in Gloucester. That fishing tradition, lifestyle, source of food and income is now imperiled. Aquaculture provides a mechanism to perpetuate our fishing tradition, albeit in a modified form. Aquaculture can create jobs, generate income and perpetuate a working water front. High quality and nutritious seafood can be produced and marketed locally, ensuring the freshest and most wholesome quality. Water quality can be maintained or improved as bivalves remove and sequester nutrients (such as N, P and CO₂) from coastal and estuarine waters. Wisely located and properly managed aquaculture operations improve and sustain good water quality in coastal waters while providing for a multitude of beneficial impacts to local and distant populaces.