

A BRIEF HISTORY OF CHATHAM'S PROPAGATION PROGRAM

The Propagation Program has long been an integral management component for Chatham's Shellfish Department. While fisheries around the world suffer the consequences of over-harvesting, a shellfish propagation program is one of the few examples of a fishery that replenishes a harvested stock. Growing nursery stock shellfish and adding it to the environment of wild stock ensures the continual reproduction of shellfish in Chatham waters by maintaining a brood stock. Over the last 40 years, this enhancement has helped to produce a stable and consistent species that harvester can rely on. Quahogs have always been the predominate species grown. Quahogs are hearty and will grow quickly if given a constant food source and protection from predators in their vulnerable seed stage. Once grown and in the environment, quahogs are less susceptible to predation like mussels and scallops and less likely to be damaged by storms and shifting sands like soft-shelled clams. Quahogs are the mainstay of Chatham's shellfishery.

As early as 1974, experiments in the feasibility of growing hatchery raised seed quahogs in the natural environment began under the stewardship of Constable Cassie Abreu. These early endeavors purchased larger (and more costly) seed quahogs ranging from 8 to 10 mm and planted directly in the natural environment. Through the late 1970's, the department experimented with location and protection methods in growing seed quahogs. Best growth location and predator exclusion methods were methodically recorded and were the subsequent basis for a more evolved propagation program through out the 1980's. During this period, the State of Massachusetts supplemented monies for municipal propagation programs.

In 1983, the Shellfish Advisory Committee supported and recommended to the Board of Selectmen the creation of a revolving fund to fund an expanded and permanent propagation program for the Town. Monies for the fund would be raised from a volunteerary increase in the cost of a commercial shellfish permit from \$50.00 to \$200.00 whereby three-quarters of the fee would be set aside to support the propagation program. This fund allowed for an increase in the amount of seed quahogs purchased annually. The revolving fund concept was supported by the industry and the Board of Selectmen with the understanding that the propagation program would continually enhance the natural stock of quahogs.

Constable Stuart Moore continued the program initiated by Constable Abreu for a few years into his administration but was aware of the limitations of buying the larger, more expensive seed quahogs and the limits of planting seed directly into the natural environment. Constable Moore began to work on his vision of a Town upwelling system to complete the success of the propagation program. An upwelling system would allow the purchase of smaller, less costly seed quahogs (1-2mm versus 8 to 10mm), greater protection of seed quahogs in a closed system and allow for a faster rate of growth with a constant flow of nutrient rich water.

With the approval of the Shellfish Advisory Committee, the Board of Selectmen and Town Manager Tom Groux to spend funds from the shellfish revolving fund, Constable Moore set out to find the most

suitable location for the upweller. Proximity to nutrient rich waters was essential for both cost and efficiency of the new system. The Town owned building at Old Mill Boat Yard (OMBY) was the ideal location for the venture. With approval for the project and an optimum site for the upweller, the Town advertised for a propagation specialist. Craig Whitcomb was hired for his extensive knowledge and experience in the field of propagation. Craig set out to design the system whereby waters from Stage Harbor would be pumped into the building, through tanks and over the seed then back out into the Harbor. This seemingly simple system of constant water flow in and out of the system functioned with three powerful pumps located under the float dock at OMBY. Large diameter pipes transfer water into the building and through the tanks allowing the small seed quahogs to siphon out the nutrients they feed upon, then exit the building through a series of pvc pipes located along the bulkhead of the boat ramp. Once designed, Craig and Stuart embarked upon constructing the system from scratch. The upweller was up and running in the spring of 1998 with only the upper tanks completed, and grew out 3 million seed quahogs in its first year. The lower tanks were built the following year.

The total cost of the system was approximately \$40,000. At the time, the shellfish revolving fund was solvent from sales of commercial permits during the boon scallop years of the 1980's. In following years the revolving fund funded the annual cost of operation and seasonal labor which averages \$30,000 annually. During the 1990's and up to 2009, total costs for hatchery seed was subsidized by the State and the Town procured and grew between 3 to 4 million quahogs a year. After 2009, the Cape Cod Cooperative Extension continued a truncated seed program with funds from Barnstable County and Woods Hole Sea Grant. Since 2009, the Town receives 300,000 seed quahogs from this program and purchases 2 million quahogs directly from the Aquaculture Research Corporation (the only local shellfish hatchery on Cape Cod) at the annual average cost of \$20,000 per year. Though the upweller system can hold 4 million quahogs, reduced commercial permit sales through the mid-2000's as well as monies spent in the legal fees to protect harvesting rights on Momony diminished expendable monies in the revolving fund

In recent years, the propagation program has included raising both oysters and scallops seed. Scallops are far more temperamental to grow and need constant vigilance but the economic benefits to the commercial industry from a successful crop can be justified. And though oysters are not a commercially harvest species, they are relatively inexpensive (\$1000 per year) and both commercial and recreational harvesters look forward to their share of oysters in season.

The success of the Town's upweller and propagation program is evident with the recruitment of hatchery stock throughout the shores and waters of Chatham. The program creates a legacy of continued enhancement to support our commercial shellfish industry. And thanks to the vision of the commercial industry in 1983 and since, years of recreational harvesters have enjoyed the benefits of stable shellfishery.