

CHAPTER 7: MANAGING THE BAY'S FISHERIES

IMPLEMENTATION SUMMARY

RECOMMENDATION	STATUS
10.2.1 Refine/coordinate shellfish regulations	➤ On-going locally.
10.2.2 Fisheries assessment	➤ Focus is on monitoring the health of shellfish habitat. Intertidal study is the first step. ➤ Conduct fisheries assessment as proposed in the plan.
10.2.3 Enhance Bay-wide propagation	➤ On-going locally
10.3.1 Aquaculture assessment and guidelines	➤ Town of Orleans, in cooperation with Barnstable County and the MA Division of Marine Fisheries, is developing best management practices. Site assessment will be developed pending completion of intertidal study.
⊕ Monitor trends in disease and invasive species	➤ The Alliance should support the towns in their efforts to control Quahog Parasite Unknown (QPX), and the negative impacts of invasive species on the vitality of the wild shellfisheries

➤ CONTINUED

⊕ NEW RECOMMENDATION

✓ COMPLETED

OVERVIEW

Shellfishing and finfishing are important commercial and recreational activities in Pleasant Bay. Of the forty-five species of shellfish in the Bay, quahogs, scallops and soft shell clams are, historically, the most popular for commercial and recreational fishing. Catch report data compiled in the plan shows declines in harvests for all three species. The precise causes of the decline in harvests are still unknown. In place of traditional species, alternative shellfish species, such as razor clams, are being fished more actively.

The Bay's thirty-six finfish species are also a highly valued and ecologically significant resource. Pleasant Bay is well known as one of the most popular sport fishing areas in the state. Flounder, eel, and lobster are among the Bay's commercial fisheries. Several offshore commercial species -- American eel, winter flounder, white hake, pollock, and menhaden -- rely on the Bay's warm waters and extensive marsh areas to provide nursery areas. Numerous conditions influence the productivity of the Bay's finfish species. Significant trends include the virtual disappearance of winter flounder, and the resurgence

of bass and blue fish stocks. Also, there are two active alewife fish runs, and four historic, but inactive, runs.

The plan notes possible causes for apparent shellfish and finfish declines, including:

- Fishing pressure, caused by over-fishing in certain areas, or use of poor techniques;
- Juvenile mortality;
- Loss of predatory equilibrium;
- Environmental stress resulting from the formation of the Chatham breakthrough;
- Presence of non-point source pollutants in the water column and bottom;
- Natural species growth cycles;
- Emergence of alternative species; and
- Loss of habitat, primarily eelgrass.

In response the plan calls for enhanced fisheries management, more active propagation, and further study on the status of shellfish and finfish populations. As described below, the Alliance and the towns individually have made progress in implementing the plan's recommendations, and in identifying and addressing emergent issues.

SHELLFISH MANAGEMENT AND PROPAGATION

The thrust of shellfish management recommendations is on enhancement of the wild shellfisheries through strengthened shellfish management and enhanced propagation efforts.

- An increase in commercial and recreational permit fees in Orleans has resulted in greater resources for propagation, and hiring of additional staff for enforcement; Chatham continues to maintain a dedicated fund for propagation funded from a portion of shellfish permit fees;
- Propagation, rather than selected closures, is being relied upon as the means of protecting against over fishing of species;
- Catch reports continue to be collected, almost exclusively from commercial permit holders;
- Alternate fishing techniques, such as salting for razor clams is being monitored, with no deleterious effects noted. No additional techniques have been observed;
- The number of commercial permits has decreased in some Alliance communities, indicating that commercial activity may be responding to trends in the wild shellfisheries.

UPDATE RECOMMENDATION

The Alliance should continue to support the towns' efforts to increase the effectiveness of propagation, and strengthen enforcement of shellfishing regulations.

Pursue the re-establishment of a series of buoys to demarcate town boundaries, particularly at Strong Island, North Beach and Big Bay. On-going monitoring of boundary markers will be required.

The Alliance and local shellfish officials should develop a framework for long-term monitoring of the Bay's wild shellfisheries. Input should also be incorporated from the following sources: shellfish advisory groups, Massachusetts Division of Marine Fisheries, the County Extension Service, and regional scientific institutions.

DISEASE AND INVASIVE SPECIES

New fisheries management concerns have emerged since the development of the plan. One is the incidence of Quahog Parasite Unknown (QPX) in selected private aquaculture grant areas. It is fortunate that to date, QPX has not been identified in any public shellfishing areas. The incidence of QPX is limited to selected private grant areas in the Northern portion of Pleasant Bay. However, Orleans shellfish managers are concerned about the incidence of QPX and continue to work with the Division of Marine Fisheries, the County, and regional scientific institutions to understand the causes of QPX and develop a management response.

Another management issue is the emergence of invasive species, which pose threats to the viability of shellfish. One invasive species is the green crab. It is believed that the green crab was transported to this area from the Far East from the disposal of ballast water from tankers. The crabs are voracious consumers of all varieties of shellfish as well as eelgrass. Another invasive species, codium, is an aquatic plant that attaches to objects on the bottom. A characteristic of codium is its ability to reproduce an entire plant from a tiny fragment. As a result, the grass is rapidly overtaking sections of bottom in parts of Pleasant Bay.

The Massachusetts Coastal Zone Management has developed the *Massachusetts Aquatic Invasive Species Management Plan*, which should be consulted in the development of strategies for managing invasive species in Pleasant Bay.

UPDATE RECOMMENDATION

The Alliance should support the towns in their efforts to control QPX, and the negative impacts of invasive species on the vitality of the wild shellfisheries. Best management practices and possibly predator control measures should be evaluated for their effectiveness, including impacts on shellfish and other aspects of the Bay's ecology. The Massachusetts Division of Marine Fisheries, the County Extension Service, Massachusetts Coastal Zone Management and regional scientific institutions should be consulted in the evaluation or development of management responses to QPX and invasive species.

FISHERIES ASSESSMENT

Questions about the reliability of shellfish harvest data as an indicator of species decline prompted a recommendation to conduct a shellfish and finfish assessment. The assessment was intended to update a 1967 survey conducted by the Massachusetts Division of Marine Fisheries. While it was felt that such a study could produce interesting data on shellfish densities, greater long-term benefit would result from a greater understanding of the types and quantities of, and the natural and man-made influences on, shellfish and finfish habitat. A deeper understanding of habitat conditions would enable shellfish managers to focus on promoting conditions under which shellfish and finfish thrive.

The Intertidal Habitat and Sediment Assessment study now underway is developing detailed information on the formation, sediment characteristics and stability of selected intertidal areas. The study is also taking a general look at the variety of shellfish and other species inhabiting different types of intertidal habitats. Thus the study is intended to reveal new information on the sediment characteristics of intertidal areas in the Bay and the tidal, aeolian and littoral influences shaping them. The study will contribute to the sustainability of the wild shellfisheries by providing a thorough scientific understanding of intertidal habitat.

UPDATE RECOMMENDATION

The Alliance should work with the Division of Marine Fisheries, Barnstable County and regional scientific institutions to develop one or more studies of the Bay's finfish and shellfish resources. Regarding shellfish and finfish resources, the studies should address:

- Inventory of shellfish and finfish species in the Bay;
- Measures of the density and productivity of various species;
- Assessment of the economic and employment values of commercial and recreational fisheries;
- Evaluation of impacts on wild shellfish and finfish, including those related to water quality or from the construction, maintenance, or presence of shoreline structures; sustained fishing of marginal stocks; loss of predatory equilibrium; cyclical abundance phenomenon; non-point source pollutants in the water column and sediments; juvenile mortality; environmental stresses; and the productivity of alternative species;
- Potential for restoration of habitat for species such as white perch, yellow tail flounder;
- Seal habitat and population trends, including potential impacts on fisheries; and
- Cormorant population trends and their impact on fisheries.

AQUACULTURE

Private aquaculture remains only within the areas specified in the plan. Since the plan was adopted, no new grants or expansion of exiting grants has been permitted.

Since the adoption of the plan the Town of Orleans has been working with the Massachusetts Division of Marine Fisheries, the County Extension Service, and regional scientific institutions to develop best management practices for grant holders, as recommended in the plan. In addition, the Alliance will work with the town to develop guidelines for selecting grant locations based on the results of the Intertidal Habitat and Sediment Assessment.

UPDATE RECOMMENDATION

Pending the results of the intertidal study, the Alliance will coordinate development of guidelines for locating aquaculture activity. The guidelines will address the following issues:

- Identify areas of the Bay that may be suitable for private aquaculture; and
- Assess the cumulative impacts on the Bay's intertidal habitats and feeding areas resulting from the use of areas deemed suitable.