HMP 2020 Draft Shellfishing

Shellfishing has been and remains an important part of Wellfleet's social and economic life. Continued success of the enterprise demands good management and a sound harbor environment.

As the historical work in the "Belding" report shows, management has failed in the past. Strong leadership from the SAB and Shellfish Constable will continue to be needed. NRAB in the plan is concerned with the second issue of environmental management.

Much of what NRAB could contribute to this discussion was already anticipated by a Climate Change Working Group Report, authored by Dr Seth Tuler, 2015 (link to NRAB). It is still a=the key reference, which NRAB supports.

Climate change will result in several changes in the harbor environment that may affect shellfishing:

> warmer harbor waters
> more acidic harbor waters, due to increased CO2 dissolving in the harbor to create higher carbonic acid (H2CO3)levels
> sea level rise itself with a risk of deeper waters for shellfish access
> new species entering the harbor that may compete with the current fauna.

Warmer Waters.

Climate change will lead to gradually warmer waters in the harbor. Shellfish can adapt to these conditions: there is an important shellfish business on the south shore of Cape Cod, in Long Island sound and in Cheseapeake Bay. Historically, these sources have been the basis for Wellfleet shellfish. It is important that our seed stocks continue to reflect this diversity, allowing Normal biological processes to compensate for climate change.

Another warm water effect may be "phenology" a mis-match in the timing of shellfish breeding and spat release phyto-plankton blooms. We recommend monitoring of these blooms So as to be aware of the possible risks.

Harbor Acidity

Shellfish shells are basically calcium carbonate, which dissolves in acid waters. This leads to thinner, fragile shells. Genetic diversity is again needed.

Sea Level Rise.

Especially when the shoreline is dominated by revetments, sea level rise may lead to deeper average tidal depths. Shellfishing picking from boats may then become more important.

New Species

Not all changes will be harmful. Blood & Razor Clams, Blue-claw Crabs and (perhaps) increases in Bay Scallops can open new markets.

Apart from climate change, there are several other important topics to be addressed:

Inner Harbor

Water quality in the inner harbor is diminished by high nitrogen levels and the sediments that produce “black mayonnaise”. Support for completion of a waste-water program, including storm water run-off and Mayo Creek restoration, is essential.

Bay Scallops

Bay Scallops is a very profitable business. In the 1995 Harbor Plan, results an experiment to enhance bay scallops was reported. For three years, dragging was prohibited in an area of the lower harbor. The result reported was an increase in Bay Scalllops and teir habitat, eelgrass.

This experiment should be repeated with a longer=term point of view, both for the scallops and for overall harbor health.

“Curley” report

We need to monitor the health of Wellfleet shellfish populations on a long term, regular basis. The last time this was done was in 1975.

NRAB is working with the CCS to re-start this program. The sites for sampling will need to be distanced from aquaculture locations to be sure that it is broad harbor health that is measured.

Plastics

Wellfleet shellfishers are properly worried about micro-plastics contamination of products. This has not been observed in Wellfleet harbor; it is a future risk.

As part of a harbor and cleanliness project, the shellfish department and board are undertaking a project to reduce the use of plastic in shellfishing operations. However, should microplastics be found in local shellfish, obtaining a clean product for market would require a new technology.

Shellfish Reefs

A concern for Wellfleet harbor is that a combination of sea level rise and wind speeds would threaten salt marshes. A possible solution, in part, would be the establishment of a reef barrier that would protect a marsh. This barrier would be a source of oyster sets. In fact, in some parts of the country “oyster reefs” have themselves been used as protective barriers.

IF barriers of either sort be deemed necessary, the shellfish department would have to be closely involved in design, permitting and use.