

## Harbor Plan Dredging (after dredging)

Periodic dredging of Wellfleet Harbor is crucial to maintain harbor utility. A navigable harbor is essential for numerous economic and recreational reasons including the marina, commercial fishing, aquaculture, tourism, boating safety (and others )

Dredging spoils have traditionally been deposited in deep water well away from the harbor. This has been seen to be the most efficient, economical , and presumably the safest way of dealing with the dredged material.

Spoils can be used in other ways. The Town of Truro uses dredged material from Payomet Harbor to replenish the Town Beach erosion. In Wellfleet, spoils from Keller's Corner that are deposited at the L-shaped pier are regularly moved back to their initial location.

There are potential options for using spoils for marsh replenishment. To this end, NRAB sponsored research at the CCS about the nature of "black mayonnaise (A.Mitermyer). "Black Mayonnaise" A recent analysis of this material was done by the CCS . No toxic organic or inorganic ingredients were found so that it is possible that some of this material could be used for beach or marsh replenishment. The obvious targets are the marshes of Duck Creek and Mayo Creek, as these were the historical sites for the sediments before development of the marina.

NB: The CCS report asks that we use the term "black mustard" rather than "black mayonnaise". Evidently, elsewhere, the latter can be a harmful material.

A first step would be to confirm if the elevation of the Duck Creek marshes had been impeded by the marina development in the mid-1950s. Some additional sediment transfer modelling may also be warranted as suggested in the report by G.Geise et al in the 1995 Harbor Plan.

A second options would be “Thin Layer Placement” (TLP) of dredged material , a system of spraying a slurry of dredged material over marshes. This has been used to restore marshland in a number of southern and Atlantic Coast states. Extensive review of the current status of this method is available in Army Corps of Engineering websites. However, this is a new technology, needing significant developments.

Of course, maintenance dredging and spoils transport is always a possibility with a Town owned or shared dredge.

Recommendations;

CCS presentation of final report to a Wellfleet Forum or as part of State of the Harbor Conference.

Provide a grant to study feasibility of using dredge spoils from Wellfleet harbor to replenish marsh erosion, either directly or by using Thin Layer Placement. Modelling will be required. Follow developments of TLD technology.

Work with CCS, APCC, in evaluating potential cost/ benefit of removing the old railroad bridge and other infrastructure modifications.

Work with dredge task force in reviewing feasibility of maintenance dredging, including possible purchase or sharing of a dredge.