

Action Plan

Managing Dredging and Dredged Material Disposal

Problem

The harbors, channels, and embayments of the Buzzards Bay system require periodic maintenance and improvement dredging to compensate for natural sedimentation and to allow for appropriate shoreline development. In some instances, dredged material can have beneficial uses; for example, capping potentially contaminated deposits or nourishing beaches. However, most dredging is of fine-grained sediments containing one or more contaminants of concern. In New Bedford Harbor, sediments have such elevated levels of PCBs that they are unsuitable for ocean disposal and may be unsuitable for most landfill sites. Disposal of sediments with elevated chemical concentrations has resulted in sediment background levels that are potentially carcinogenic to bottom-dwelling fish (MBDS, 1989; and R. A. Murchelano, National Marine Fisheries Service, unpublished data). Currently, a comprehensive analysis of dredging needs and dredged material disposal does not exist for Buzzards Bay.

Background

The only active site in Buzzards Bay that receives dredged material is Cleveland's Ledge. The site primarily receives dredged material from activities in the Cape Cod Canal and most recently material from Falmouth Harbor. Local, state, and federal permitting of dredging and dredged material disposal has been evaluated on a project-by-project basis. However, this system has not addressed potential negative, cumulative impacts of such projects. Effective review of dredging permits and management of all dredged material disposal in Buzzards Bay requires a cooperative state and federal effort. The Army Corp of Engineers (COE) is preparing an evaluation of dredged material disposal sites. The Department of Environmental Management is preparing a list of anticipated dredging projects. In the New Bedford area, metals, PAHs and PCBs are at elevated levels in sediments, generally making them unsuitable for ocean disposal. In other harbors and marinas, petroleum hydrocarbons, including PAHs and metals from antifouling paints, are likely to accumulate in sediments and possibly contaminate nearby shellfish.

Although the Region I EPA and the COE-New England Division have recently adopted more stringent testing protocols to assess sediment quality, further modifications to the testing procedure are expected. A tiered approach to testing sediments for ocean disposal is required; this approach assesses the quality of the sediments and, if necessary, requires bioassay and bioaccumulation tests. Bioassay tests quantify mortality rates of organisms exposed to sediments and bioaccumulation tests are designed to evaluate the potential for organisms to accumulate selected chemicals when exposed to the sediments. These tests are expensive and may not always be conclusive; nonetheless, they are frequently the basis on which decisions about dredged material disposal are made. An important data set is the historical records of spills,

accidents, previous polluting activities, and sediment quality. This information is often overlooked partly because the data are not readily available to decision makers.

Because sediments vary in grain size (which determines whether they can be used for beach nourishment) and contamination levels of specific chemicals, several options should be available for disposal of dredged materials. Federal and state agencies with different mandates, perspectives, and authority need to cooperate to develop a management plan for dredging and dredged material disposal.

Major Issues

The PCB levels in areas to be dredged from New Bedford are a problem. Even sand materials have elevated levels of PCBs normally associated with finer particles, e.g., Palmer Cove. Improper disposal of PCB-laden sediments at a dredged spoils site off West Island has contributed to the spread of PCBs in Buzzards Bay. Existing sediment criteria for contaminants may not be protective of the ecosystem, a fact that is evidenced by the presence of cancerous tumors in bottom-feeding fish.

The use of uncontaminated sandy dredged material for beach nourishment is considered beneficial and recommended on a project-specific basis. The disposal of silty material may require expensive contaminant testing, and is reviewed on a project-specific basis. The tests are often inadequate to protect the environment, and data on potential "hot spots" should be integrated more fully in the decision-making process. An accessible database for all agencies involved in permitting dredging and dredged material disposal will facilitate making decisions protective of the environment.

Goal

Establish a comprehensive framework to manage dredging and the disposal of dredged material for Buzzards Bay.

Objectives

1. To minimize the negative impacts of dredging and disposal of contaminated and uncontaminated dredged material throughout Buzzards Bay.
2. To develop a database of potential hot spots, sediment and biota contaminant levels, and general information obtained from dredging and disposal testing.
3. To maximize the beneficial uses of dredged material by creating opportunities for disposal of dredged material, for example, nourish beaches or cover contaminated areas.
4. To review permits for dredging and dredged material disposal more uniformly and efficiently.

CCMP Commitments

U.S. Army Corps of Engineers (COE)

Executive Office of Environmental Affairs (EOEA)

COE, with assistance from EOEA, will initiate and co-chair an interagency committee of local, state, and federal authorities to develop a dredged material disposal plan for Buzzards Bay.

Target dates: Task force assembled by 12/91
 Management plan by 12/93