

NOAA Hazardous Waste Site Report

Cannon Engineering (I-22)
Plymouth, Massachusetts
April 13, 1984

Location and Nature of Site:

The Cannon Engineering site is located in an industrial park on the shore of Plymouth Harbor, in Plymouth, Massachusetts (Figure 1). This three-acre facility has three above-ground tanks of 250,000 gallon capacity constructed in the early 1920's. Each tank is surrounded by an earthen berm, with the closest tank only 50 feet from the shoreline of the harbor. The site is low, inside the five-foot contour, and is adjacent to a stream which flows into the harbor.

The tanks on the facility were originally used to store fuel oil and used oily waste. Later, waste sludge, volatile organic compounds, pesticide wastes, and PCB wastes were placed in the tanks. Due to age and plate construction, the tanks are now leaking on an intermittent, but regular, basis. Soils in the site are contaminated with waste materials, and oily waste has leaked into the harbor on several occasions, the last time being in 1982.

The U.S. Environmental Protection Agency removed the tanks and the contents as an emergency removal action, limiting the source of pollution to the contaminated soil on the site.

Proximity of Chemical Hazard to Marine Resources:

Plymouth Harbor surface waters and sediments are exposed to runoff from the site on a regular basis, as rains wash contaminated soils and surface water into the adjacent bay. Public contact in this highly populated area is also of major concern, but no drinking water supplies are at risk.

Materials identified by analysis include chloroform, benzene, dichloroethylene, tetrachloroethylene, methyl ethyl ketone, and PCB. PCB has been measured in leakage at 20 to 100 ppm, and poses the most serious threat to the harbor and marine life. The sediment at the site is a very permeable glacial till, and contributes to the harbor's pollution via a groundwater aquifer flowing at 100-300 gallons per minute.

Marine Resources at Risk:

This site is on the waterfront of Cape Cod Bay in the Plymouth Harbor region. This region is characterized by extensive tidal flats of

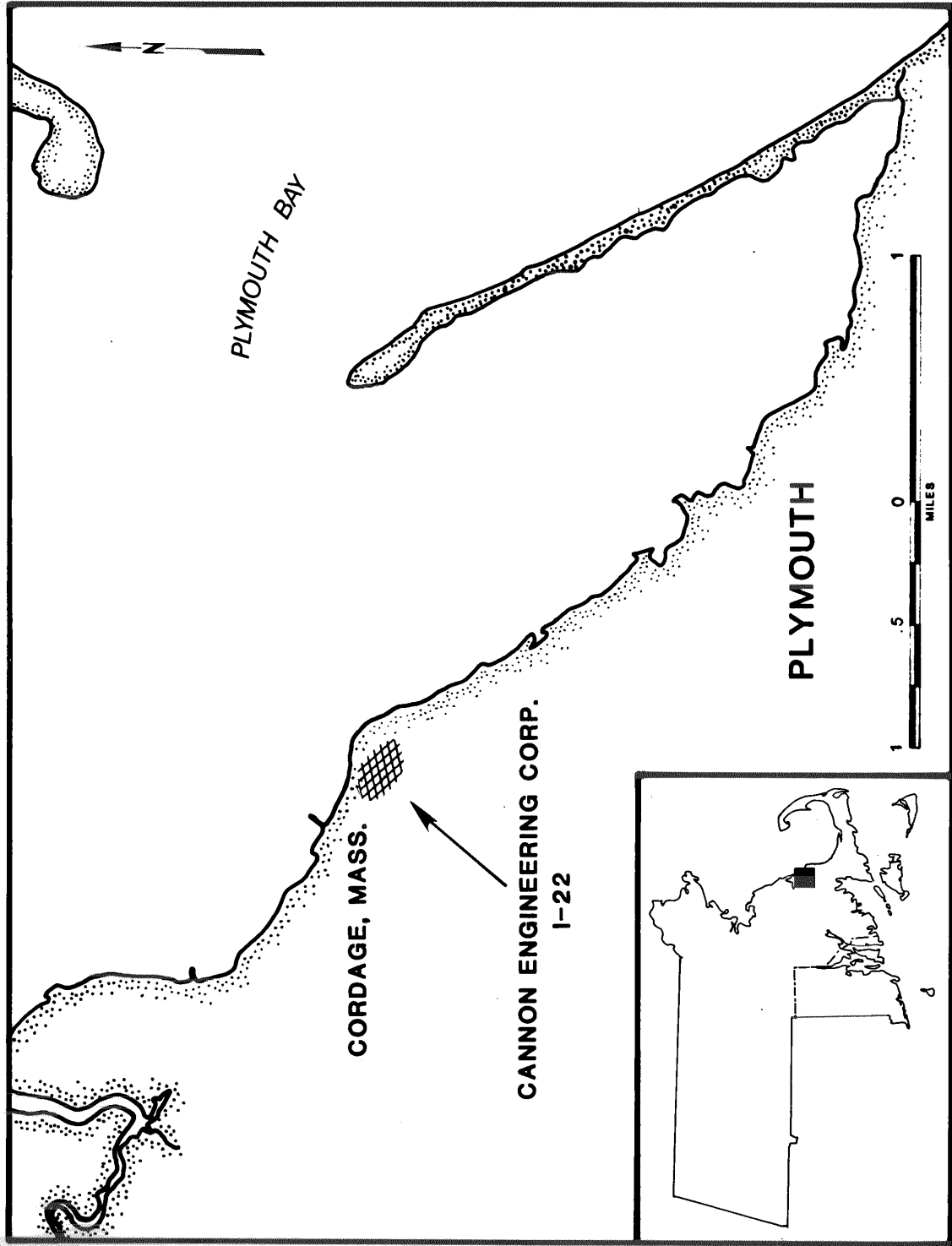


FIGURE 1. Site location.

low to moderate biomass, coarse-grained sand beaches, and large marsh areas (Table 1).

Table 1. Fishery Resources of Plymouth Harbor (1-3)

Finfish Species	Adult Habitat	Spawning Area	Nursery Area	Comm. Fish.	Rec. Fish.	Migr. Route
<u>Anadromous</u>						
Blueback herring	x			x		
Striped bass	x			x	x	
Atlantic salmon	x			x	x	
Atlantic tomcod	x			x	x	
<u>Non-anadromous</u>						
Flounder	x			x	x	
Bluefish	x			x	x	
Atlantic cod	x			x	x	
Pollack	x			x	x	
Tautog	x			x	x	
Haddock	x			x	x	
Cunner	x			x	x	
Hake	x			x	x	
<u>Shellfish</u>						
Northern shrimp	x			x		
Softshell clam	x	x	x			x

Tourism and recreational use is heavy, with several public beaches and vacation housing areas, especially along the Plymouth beach spit, two miles southeast of the site. The end of Plymouth beach provides a nesting area for the common, lease, and roseate terns as well as the Leach's storm-petrel. Anadromous fish runs of alewife and rainbow smelt exist in two rivers two miles north and two miles south of the site. Softshell clam beds and American shad, a species protected by state legislation, are found throughout the Plymouth Bay region.

Summary of Site-Related Actions:

A removal action was performed in 1982 to deal with major leakage from one of the tanks and to remove excess material from the catch basins around the tanks.

Remedial Action surveys are now underway to determine the best way to deal with the problems posed by this site. A work plan was released in March 1984.

References:

1. National Marine Fisheries Service, 1974. Anglers Guide to the United States 2. Atlantic Coast.
2. U.S. Fish and Wildlife Service, 1980. Atlantic Coast Ecological Inventory.

References, cont.

3. Research Planning Institute. Environmental Sensitivity Index - Massachusetts.
4. N.U.S. Corporation, 1984. Remedial Investigation and Feasibility Study, Cannon Engineering Site. March 1984.