

EXECUTIVE SUMMARY

The Cornfield Shoals Disposal Site is located approximately 3.3 nm southeast of Cornfield Point in Old Saybrook, Connecticut. It occupies a 1 nm square area centered around 41 degrees 12.68N, 72 degrees 21.52W and has water depths in the range of 49 to 57 meters. Cornfield Shoals is presently the only site in New England managed as a dispersive site; the disposal site has a relatively smooth, sandy bottom with a shallow depression oriented in an eastwest direction. The near-bottom energy regime is the highest of all DAMOS sites and this is reflected *in* the texture of the bottom sediments (primarily sand and gravel). Some over consolidated clay and clay nodules from glacial lake deposits have been found in the site, providing further geological evidence of scouring. The major currents at this site are the result of an east-west tidal component and the outflow of the Connecticut River; seasonal river effects can be quite pronounced due to spring runoff and snow melt. Although recent current meter data are not available for this site, near-bottom current data obtained in 1978 (NUSC, 1979) indicate that average peak tidal velocities are on the order of 30 cm/sec in a northwest-southeast direction. The relatively high energy regime at Cornfield Shoals is equally composed of the tidal and residual (riverflow) components in contrast, for example, to the New London Disposal site that has similar tidal current velocities but a smaller residual component, resulting *in* a reduced overall energy regime.

As with the other Long Island Sound disposal sites, the incidence of storm-driven wave currents is reduced due to the restricted fetch available at the site; only the most severe northeast storms have any potential for effect. There is little concern about storms and potential effects on sediment transport. Because Cornfield Shoals is a dispersive disposal site, its use has been limited to the deposition of relatively uncontaminated dredged material from the Connecticut River and surrounding area. The average annual volume of dredged material deposited at Cornfield Shoals is approximately 55,000 m³, however the actual amount can vary widely from year to year. Previous monitoring surveys have included study of the near-bottom currents and precision bathymetric surveys in 1978 and 1979 (NUSC, 1979). The high current conditions at this site make diving operations impossible, and deployment of other types of oceanographic sampling gear is equally difficult.

A precision bathymetric survey was conducted at the Cornfield Shoals Disposal Site on 31 July 1987 to determine if any bathymetric changes have occurred relative to prior surveys. It was expected that no accumulation of dredged material would be detected at the site even though approximately 360,000 m³ of material has been deposited between 1979 and 1987. For the period prior to this (1960 to 1978), approximately 1.03 million cubic meters of dredged material has been deposited at Cornfield Shoals.