EXECUTIVE SUMMARY

A monitoring survey was conducted in September 2010 at the Cape Cod Bay Disposal Site (CCBDS) as part of the Disposal Area Monitoring (DAMOS) Program. The 2010 field effort consisted of bathymetric, sediment-profile imaging (SPI), and plan-view imaging surveys designed to characterize the seafloor topography of the disposal site, document the distribution of dredged material at recent and historic disposal locations, and assess the benthic recolonization status of three disposal mounds.

The multibeam bathymetric survey was performed over a 2000 x 2100 m area that encompassed the entire disposal site. Dredged material distribution was mainly limited to four areas within CCBDS; the Historic Wellfleet Disposal site and three distinct disposal mounds. The Historic Wellfleet Disposal Site and Mound A exhibited no apparent changes in height or extent since the last bathymetric survey in 2003. Mound B was the largest feature observed at the site, and while the overall mound topography was stable, there was some minor reworking of surficial sediments near the mound apex. The sediment transport was likely due to enhanced tidal currents or storm-generated waves around the steep mound peak and did not result in significant redistribution of dredged material beyond the original mound footprint.

The placement of approximately 137,000 m^3 of dredged material in the northwest quadrant of the site since 2003 resulted in the formation of a new mound, Mound C. The disposal events during this period were not focused in one precise location and thus created a low, wide feature that rose less than 1 m over ambient depths.

The 2010 imaging surveys were performed over Mounds A, B, and C as well as the three reference areas. The SPI stations on the three disposal mounds exhibited a high degree of sediment reworking and benthic communities that indicated advanced recolonization. Evidence of Stage 3 successional status was present in at least one replicate at each of the disposal mound stations suggesting that the infaunal community at each mound had fully recovered to conditions similar to those seen at reference areas. This reverses an apparent trend of decline in benthic conditions observed at Mounds A and B during the last two imaging surveys at CCBDS.

Standard confirmatory monitoring of CCBDS is recommended in order to document the continuing stability of mound topography and healthy benthic recolonization pattern at the three disposal mounds and to track the sediment transport processes observed at Mound B.