

EXECUTIVE SUMMARY

A monitoring survey was conducted in 2012 at the Machias Bay Disposal Site (MacBDS) as part of the Disposal Area Monitoring System (DAMOS) Program. The 2012 monitoring effort involved a high-resolution acoustic survey to characterize seafloor topography and dredged material distribution as well as sediment-profile imaging (SPI) and plan-view imaging (PV) surveys to provide additional physical characterization and to assess benthic recolonization. The results of the 2012 surveys were used to document changes at MacBDS since the previous survey in 2002 and the subsequent placement of approximately 64,000 m³ of dredged material at the site in early 2011.

The high-resolution acoustic survey consisted of multibeam bathymetric, acoustic backscatter, and side-scan sonar data acquisition. The survey was conducted over a square-shaped area that incorporated the entire disposal site. The acoustic survey revealed a small mound of dredged material near the center of the disposal site, slightly offset from the mound created in 2002. The peak of the mound was approximately 4.4 m above the surrounding seafloor and the mound covered an area of approximately 150 × 190 m with a thin apron extending well beyond. The surrounding seafloor was very smooth and homogeneous in slope and texture.

SPI and PV images were collected from MacBDS and two reference areas. Evidence of Stage 3 successional status was present in all replicate images from all survey stations, suggesting that the benthic community at the disposal site had recovered and was equivalent to reference area benthic communities. While the aRPD depths within the disposal site boundary were slightly depressed compared to those found in the ambient areas, evidence of deep, deposit-feeding infauna was present throughout the site, and the aRPD depths were expected to rebound quickly.

In summary, the placement of approximately 64,000 m³ of dredged material created a mound with the size and extent expected from placement in 20-m water depths. In addition, MacBDS has experienced full recovery of the benthic community in the year and a half since cessation of dredged material placement activities. Given the complete recovery of the benthic infaunal community, it is predicted that the effects from any future disposal operations at MacBDS would be transient and the infaunal community would quickly re-establish itself within a time frame of 12-18 months following completion of disposal operations. Future confirmatory survey work at MacBDS is conditional on the additional placement of a significant amount of dredged material.