EXECUTIVE SUMMARY

A monitoring survey was conducted in August 2014 at the Portland Disposal Site (PDS) as part of the Disposal Area Monitoring System (DAMOS) Program. The 2014 monitoring effort involved a high-resolution acoustic survey to characterize seafloor topography and dredged material distribution, as well as a combined sediment-profile imaging (SPI)/plan-view imaging (PV) survey and benthic grab sampling to provide additional physical characterization and to assess benthic recolonization. The results of the 2014 survey were used to document changes at PDS since the previous survey in 2007 and the subsequent placement of over 666,600 m^3 of dredged material at the site.

The high-resolution acoustic survey consisted of multibeam bathymetric, acoustic backscatter and side-scan sonar data acquisition. The survey was conducted over a 2,100 × 2,100 m area that incorporated the full PDS including the active disposal areas and past disposal target areas. The bathymetric data indicated that the site still displayed a highly irregular bottom topography, with a prominent northwest-southeast trending trough that split into two parallel troughs to the northwest. Much of the site was dominated by bedrock outcrops (ledges) while the deeper areas of the site were generally smooth except for irregular relief in the areas where dredged material placement had been targeted.

SPI and PV images were collected from two disposal target areas within PDS (PDA 95 and PDA B) and three reference areas. Evidence of Stage 3 successional status was present in at least one replicate image from all survey stations except one at PDA 95. Mean aRPD depths were statistically equivalent at the disposal sites compared to the reference locations despite shallower depths for PDA95 and the reference areas between 2007 and 2014. The results supported the conclusion that surface sediments at PDS have been colonized by a benthic community comparable to that in nearby reference areas but that both disposal sites and the reference areas may be recovering from some recent disturbance that has resulted in relatively shallow aRPDs.

Conditions at the three reference areas assessed from regional seafloor topography and SPI results suggest that one reference area, SEREF, is not considered representative of PDS given its significantly different bottom topography relative to that of PDS and the other reference areas. This reference area is in a location with dynamic bottom conditions, and it is just as likely that benthic conditions could mirror those of a disturbed system if sampling of this area closely follows deposition of a turbidite. Two reference areas are considered sufficient to serve as a control characterization if SEREF is removed from future monitoring.