

EXECUTIVE SUMMARY

Intertidal flats are ecologically and commercially important habitats to the New England region of the U.S. They provide forage for commercially important fish species and both migratory and resident shorebirds. They also support shellfish and bait-worm industries. As a demonstration of the potential for beneficial use of dredged material in construction of these habitats, dredged materials from a harbor construction project were placed on a site on the western side of Sheep Island, Jonesport, Maine. After nine years the physical integrity of the site has not been compromised. The site quickly developed a substantial population of the commercially important soft-clam, *Mya arenaria*, as well as a diverse and abundant infaunal community. A population of the bait-worm *Nereis virens* was initially established but commercial-sized worms were absent during the last sample period. The absence seems most likely due to normal interannual fluctuations in abundance. A second, older constructed flat, resulting from intertidal disposal of dredged material, Beals Island, has an extensive bait worm population but few soft-clams. Differences in species' abundances appear most likely to be due to substrate differences. The infaunal community, the principal source of forage for fish and shorebirds, at both sites is comparable in diversity, abundance, biomass, and species composition to other New England intertidal flat assemblages.