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Engineer Research and Development Center

New York District: Endangered Shore Birds Habitat, Long Island, New York

ISSUE

The Atlantic Coast of Long Island has 130 miles of ocean shoreline. More than 80 miles of the shoreline area is a barrier island system, spanning from Breezy Point in Queens to Shinnecock Inlet in Southampton. The coastal barrier system is a dynamic environment, continually shaped by storm events; wind, wave, and tidal action; sediment transport and removal; as well as regional geology and geomorphology. These processes can determine the geomorphic evolution of barrier island systems as well as plant community development.

The entire barrier island system has been actively managed since the early 1900s. Naturally occurring characteristics of the barrier island system have been modified to provide for navigation, shore protection, and beach recreation. Over time, the barrier island system has been stabilized to its present condition, which includes five inlets maintained for navigation along the Atlantic Coast of Long Island. In addition, to varying degrees, beaches have been stabilized with beach fill

and structural measures to maintain existing beaches for purposes of storm damage reduction and beach recreation.

Past management activities have resulted in the possibility that the relative amount of sparsely vegetated habitat is lower than would exist in an unmanaged system. This is an important consideration because this early successional habitat is an important nesting and foraging habitat for a range of shorebirds, including the Federally endangered piping plover (Figure 1) and threatened least tern. In addition, the emerging wetlands and eelgrass beds, which could thrive because of substrate infusion, serve to provide important habitat for juvenile finfish and shellfish. Early successional habitat is being restored because such habitat is scarce. Reduction in available habitat can be linked to changes in cross-shore sediment transport, inlet stabilization, and shoreline stabilization. This then becomes an element of shore protection projects.

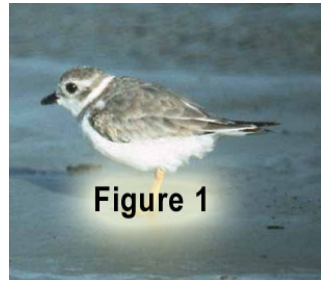
Figure 1

RSM DEMONSTRATION PROJECT GOALS

The goal of this RSM demonstration program is to restore the ecosystem for safe habitation of endangered and threatened shore birds along the coast of Long Island by demonstrating the feasibility of using dredged sand from the Long Island Intracoastal Waterways (LIIW). Specific initiatives to achieving this goal have been identified.

SUMMARY

The following RSM demonstration initiatives were identified:

- Dredging of the LIIW navigation channel as part of normal operation and maintenance activities will provide sediment to enhance tern habitat on an existing island in Moriches Bay.
- The sediment will be placed and subsequently configured so the island provides a balance of nesting and foraging habitat including intertidal to supratidal elevations, which is the type of habitat required for the advancement of these species.
- Use of an island as a habitat site decreases potential predator and human impacts to nesting bird populations.
- The New York District RSM program provided interagency coordination to include this habitat-enhancement feature into a maintenance-dredging contract, and will support post-placement monitoring.

STATUS

Construction is 90 percent complete. Sand dredged from the LIIW has been placed on East Inlet Island, Moriches, and is being graded to include two ramps into the water to allow feeding access (Figure 2). The post-placement monitoring program is under preparation. The RSM program will fund monitoring of shorebird nesting and predator activity post-construction, to be implemented by the U.S. Fish and Wildlife Service. This monitoring will also provide data for the Long

	Island Colonial Waterbird and Piping Plover Survey administered by the New York State Department of Environmental Conservation. A second, similar operation is in the planning stages, combining another LIIW maintenance dredging with placement of dredged sand for the construction of bird habitat in Shinnecock Bay.
LESSONS LEARNED	Not yet reported
KEY WORDS	Geomorphology, ecosystem, intertidal, supratidal
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Figure 1. Piping plover (Charadrius melodus) back to text

Figure 2. Construction of endangered and threatened shore bird habitat, East Inlet Island, New York back to text