Delaware Coastal Management Program
Efforts in Habitat Protection and Government Coordination
June 2009

In June 2009, as DNREC reviewed the Army Corps of Engineers' permit request for maintenance dredging, the breach was discovered at the north end of the Mispillion breakwater protecting the Mispillion River and Harbor. Tidal flow through the breach was accelerating erosion of the state's most valuable habitat for spawning horseshoe crabs and foraging shorebirds.

Extensive shorebird and horseshoe crab monitoring has been conducted over the past decade by the DNREC Division of Soil and Water's Delaware Coastal Programs and the Natural Heritage & Endangered Species Program, identifying the important yet fragile nature of Mispillion Harbor. In 2008, rapidly eroding beaches prompted Delaware Coastal Programs to conduct a detailed engineering and modeling project to design options for restoring horseshoe crab and shorebird habitat and to assess their feasibility.

After the discovery of the breach, Delaware Coastal Programs surveys in early July indicated that the damage was severe and must be addressed as soon as possible. An immediate coordinated effort was initiated between the Army Corps of Engineers Philadelphia District and several DNREC programs: the Natural Heritage & Endangered Species Program, Division of Parks and Recreation's Natural Areas Program, Division of Water Resources' Wetlands and Subaqueous Lands Section, Division of Soil and Water's Shoreline and Waterway and Coastal Programs sections. Federal funding was obtained through the Corps for completion of the navigational maintenance as well as the proposed restoration efforts.

The Delaware Coastal Program and Army Corp of Engineers determined that filling the erosional channel and back breakwater area with course sandy sediments would curtail the tidal exchange with the Delaware Bay, and that 25,000 cubic yards of sediment would be required to fill the void and stabilize the area (calculated from the DCP survey). To accomplish this, a large sand source had be located within 1.5 to 2 miles. Using coring equipment, remote acoustics and Delaware Bay Benthic mapping bottom and sub-bottom sediment data, Delaware Coastal Programs located a sand borrow site adjacent to the southern jetty that contained about 65,000 cubic yards of fine to coarse sand suitable for the restoration efforts.

The Army Corps of Engineers contracted Southwind Construction Corporation of Evansville, Indiana, to conduct the navigational channel maintenance along Cedar Creek and the 2,000-foot approach channel to the Inlet, plus the Mispillion Breakwater restoration work. The navigational dredging started in early September and was completed in three weeks, with channel sediments consisting of very fine grained mud deposited north of the breakwater along the beach, allowing the sediments to remain within the Delaware Bay system to aid in tidal wetland development.

Breakwater restoration began Sept. 22 and was completed Sept. 29 by pumping 21,000 cubic yards of medium to course sand from the borrow site to the interior of the breakwater. The area was graded according to beach templates designed by DNREC's Delaware Coastal Program and Shoreline and Waterways survey crew.