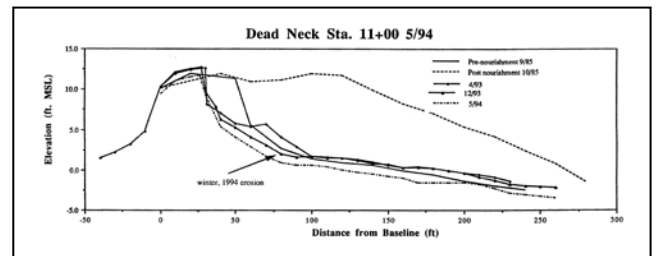


Beach Nourishment Design and Monitoring Southern Shore, Cape Cod, Massachusetts

Project Characteristics:

- *Beach Replenishment Design/Permitting*
- *Construction Oversight*
- *Surveying/Monitoring*



Woods Hole Group has designed and monitored three large-scale beach nourishment projects along the southern shore of Cape Cod, Massachusetts. Dead Neck is a barrier beach that has experienced severe downdrift erosion since the construction of jetties at a nearby inlet and shoreline armoring to the east. Great Island is a privately owned peninsula located at the entrance to Hyannis Harbor that has experienced localized erosion due to a number of groin fields.

Long Beach is a barrier beach that has undergone significant long-term erosion that threatened shore protection structures. For all three projects, Woods Hole Group performed shoreline change studies to evaluate the rates of erosion and sediment loss. The characteristics of each site were quantified through the collection of high-resolution bathymetry, vibra cores, beach profiles, and sediment grain size data.

To mitigate the shoreline erosion Woods Hole Group developed and implemented beach nourishment plans for each site. Between the period September 1985 and January 1990, Dead Neck, Great Island, and Long Beach sites were nourished with 100,000 cubic yards, 667,000 cubic yards, and 300,000 cubic yards of sands, respectively. Woods Hole Group performed all on-site topographic and bathymetric surveying, both before and after the nourishment projects. Long-term beach profile data are being collected at these sites.