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Project: Historical Shoreline Change Analysis: Western Town Line to Horton Point, Southold, NY

Contact: NYS Department of State
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An historical shoreline change analysis was conducted for the Town of Southold along the north shore of Long Island to determine the rates and extent of shoreline erosion and accretion from Horton Point west to the town line. The analysis of historical shoreline change was conducted using a computer-based shoreline mapping strategy, within a Geographic Information System (GIS) framework. The purpose of the analysis was to quantify changes in shoreline position using the most accurate data sources and compilation procedures available, and to characterize areas of erosion and accretion as influenced by human modifications and natural storm processes. Data from 1884/85 to 1998 included National Ocean Service (NOS) T-sheets, large-scale aerial photography, and low altitude digital imagery. The project included a detailed description of data compilation and analysis methods for each of the different sources of shoreline data. Additionally, a thorough analysis of potential errors was conducted to provide information on the significance of shoreline change measurement.

To evaluate historical development of the Southold coastline and correlate changes in shoreline position with natural coastal processes and human-induced activities, shoreline response was evaluated using short- and long-term data sets. The greatest rates of shoreline change were associated with movement at Mattituck and Goldsmith Inlets. Long-term trends between 1884/85 and 1998 showed accretion on the updrift (west) sides of both inlets and erosion on the downdrift (east) sides. In areas outside the influence of the tidal inlets, the average long-term shoreline change trend over the period 1884/85 to 1998 was erosional. Average rates of erosion ranged from 1.3 ft/yr at the extreme ends of the study site to 0.5 ft/yr between Duck Pond Point and Goldsmith Inlet.

