



Glacial Features of the Coastal Plain

Region 3

Glacial Deposits

Long Island, Cape Cod, Martha's Vineyard, Block Island and other islands off the New England coast are end moraines deposited during the most recent ice age that mark the maximum extent of the ice sheet 20,000 years ago. When the ice sheet paused in its advance over the Northeast, the melting ice deposited massive quantities of sand and gravel at its terminus

(Figure 3.16). Long Island serves to buffer the Connecticut coastline from storms, creating calmer water behind the island. The Ronkonkoma Moraine runs the length of Long Island and forms many of the smaller islands off the coast. The Harbor Hill Moraine stretches across northern Long Island and upwards to form the coast of Rhode Island and Cape Cod. As there is no buffering island for the Rhode Island coast, it is more severely affected by storms and high waves than the coast of Connecticut. There are no skyscrapers on Long Island because of the loose, unconsolidated glacial till that makes up the island. Till is not stable enough for very tall buildings. Not far away, however, tower the skyscrapers of Manhattan, such as the Empire State Building, built on the very resistant, metamorphosed Precambrian and Cambrian rocks of the Manhattan Prong.

Periglacial Features

The unconsolidated, loose nature of the Coastal Plain sediments made them particularly susceptible to movement during the freeze and thaw cycles of the periglacial environment. As the surface thawed in the summer and then refroze in the winter, the sediments in some areas were repeatedly settled and heaved upward. Though not covered by the ice sheet, some surficial layers of periglacial Coastal Plain sediment were thus still affected by the ice age.

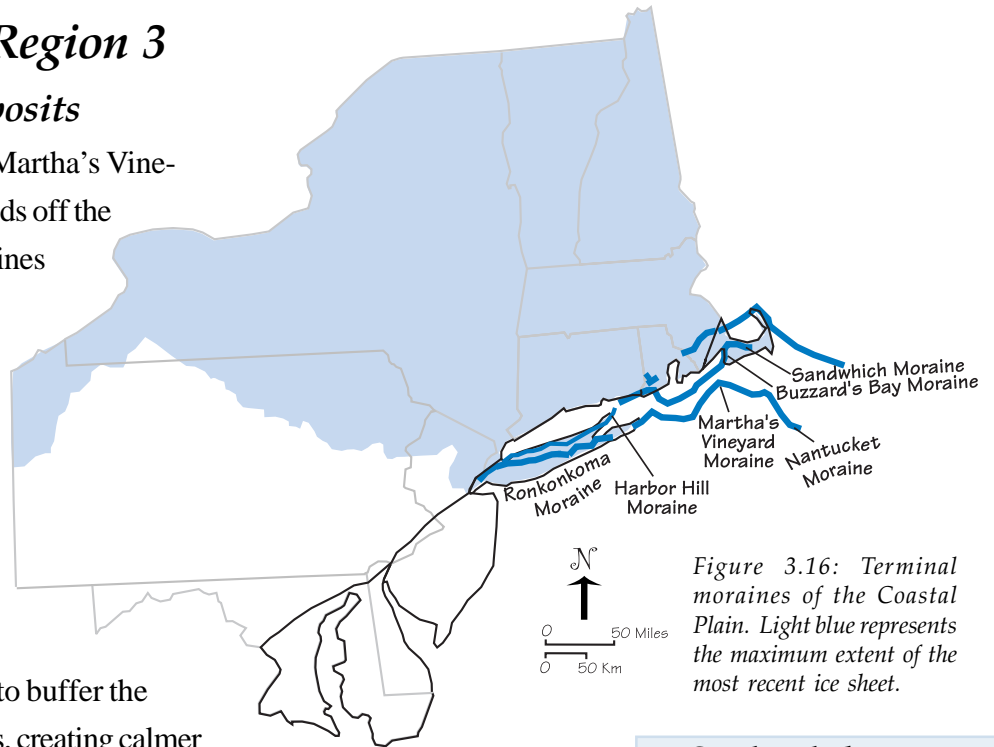


Figure 3.16: Terminal moraines of the Coastal Plain. Light blue represents the maximum extent of the most recent ice sheet.

Sea level changes

At the beginning of the ice age, sea level dropped about 100 meters because of the formation of the vast ice sheets. The drop in sea level caused rivers and streams to incise deep channels into the Coastal Plain sediments, eroding to the new sea level. These deep channels and canyons are now underwater because the melting of the glaciers caused sea level to rise. Flooding of river valleys such as the Chesapeake Bay resulted from the rising sea level.

