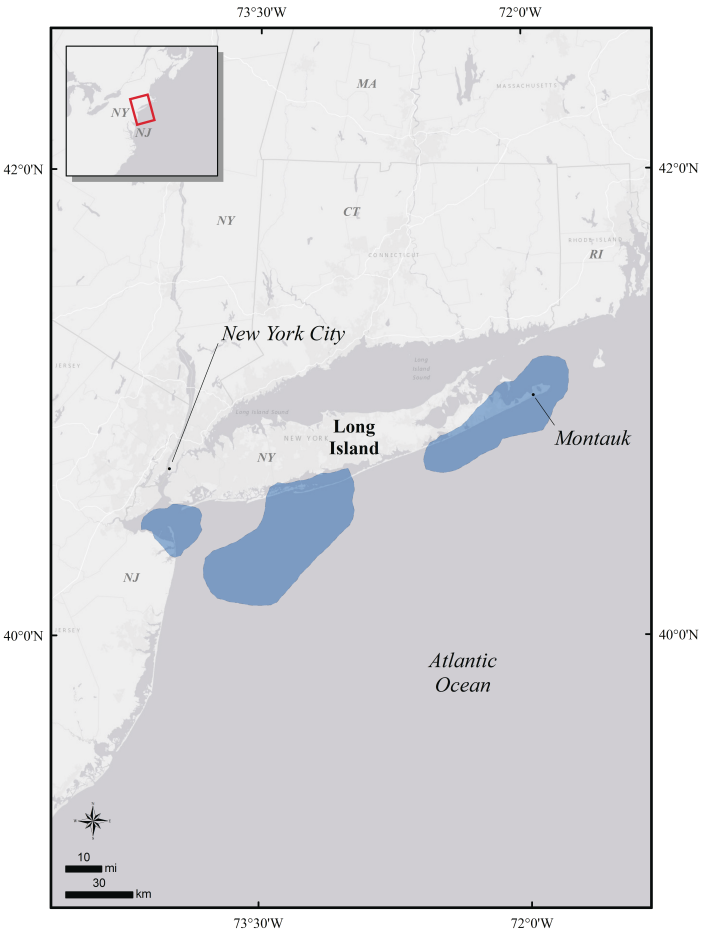
Key Site 80: South Shore Long Island, New York

Location: 40°42'50"N, 73°0'32"W

Size: 4723 km^2

Description: This key site includes the waters south of Long Island that include Lower New York Bay, Sandy Hook Bay, the deep waters of the New York/New Jersey Bight just south of Long Island, the Great South Bay and the area south, Shinnecock Bay and Napeague Bay, and the area surrounding Montauk. The barrier islands along the Atlantic Ocean and the estuary's shallow interconnected bays and tidal tributaries provide highly productive habitat. Water quality in the estuary is crucial to the health of the commercial and recreational fishing and shellfish industries. This region is highly populated with several large urban centers, including Staten Island, Brooklyn, Queens, Hempstead, and many other towns along the Long Island southern coast. Water depths range between <1 m to 30 m, but depth increases rapidly near the New York/New Jersey Bight. Air temperatures in winter range from a mean high of 3°C to a mean low of –4°C and a mean high of 28°C to a mean low of 21°C in the summer.



Precision and Correction of Abundance Estimates Presented: Abundance estimates are based on data from the Atlantic Coast Wintering Sea Duck Survey (see Silverman et al. 2012 for methods; also see Methods section in this atlas) and related surveys (Mid-Winter Survey [MWS; Eggeman and Johnson 1989] or Atlantic Marine Assessment Program for Protected Species [AMAPPS 2015]). Abundance estimates presented for this key habitat site have not been adjusted to account for incomplete detection or other biases. Abundance estimates should, therefore, be treated as minimum estimates.

Biological Value: The cool waters south of Long Island are open to the Atlantic Ocean and are highly saline. Several large stretches of seagrass beds can be found in the Great South Bay, Moriches Bay, and Shinnecock Bay. However, where there used to be more than 200,000 acres of underwater meadows, there now remains approximately 1% of this productive habitat. These remaining beds serve as critical habitats for fish, shellfish, and crustaceans. Blue mussel, Atlantic surf clam, bay scallop, and eastern oyster are among the most studied and surveyed, but ribbed mussel, hard clam, black sandshell, and eastern pearlshell are also important bivalve species (New York Department of Environmental Conservation 2005). Wintering waterfowl congregate in large concentrations in the bays and in open water south of Long Island barrier islands. Silverman et al. (2012; see Methods section in this atlas) estimated more than 56,000 sea ducks use this area, primarily scoters (*Melanitta* spp.; minimum 16,700) and Long-tailed Duck (*Clangula hyemalis*; minimum 15,200). Areas of particular importance for wintering sea ducks include the New York/New Jersey Bight, the Great South Bay, and around Montauk on the east end of Long Island.

Sensitivities: Tidal marshes and other coastal habitats of Long Island are threatened by rising seas and warming sea surface temperatures resulting from climate change (Tiner et al. 2006, Anisfeld and Hill 2011). Changes in the salinity and temperature of water will have dramatic effects on the already stressed sea grass habitat (Short and Neckles 1999). Development and continued population growth on

the coast also threaten water quality. Nitrogen input from runoff causes hypoxic events, killing aquatic vegetation, fish, and other macroinvertebrates. Due to the large number of industrial facilities and power plants, there is also risk of increasing water temperatures from heated effluents discharge, causing die-offs of sea grasses (Thayer et al. 1984). Shellfish harvest in the nineteenth century coupled with disease and changing hydrologic patterns caused a significant decline in oysters (New York Department of Environmental Conservation 2005). Commercial and recreational boating in the bays on the southern coast creates opportunities for introduction of invasive species. Invasive species such as the Asian shore crab, Japanese shore crab, and colonial ascidians have already invaded the marine habitats of Long Island and are negatively affecting the sea floor habitat and coastal habitats and displacing native species (Lohrer and Whitlatch 1997, Kraemer et al. 2007, Mercer et al. 2009).

Potential Conflicts: Development pressure and high recreational and commercial use of the coastal zone may displace sea ducks or impact benthic resources important to sea ducks. Industrial activities on the coast contribute to marine pollution and hypoxic events, which result in large die-offs of seagrass, fish, and other species. Recreational boating traffic is common along the southern coast of Long Island, especially in areas like the Great South Bay, Moriches Bay, and Shinnecock Bay, as these are popular tourist destinations. Potential conflicts exist between the shellfish industry and bivalve recovery efforts. The Long Island Shellfish Recovery Project aims to restore degraded and destroyed clam and oyster beds throughout the waters of Long Island. However, demand for shellfish products continues to increase as populations in nearby urban areas grow. Industrial activities on the coast contribute to marine pollution and hypoxic events, which result in large die-offs of seagrass, fish, and other species. One offshore wind developer is proposing a wind farm that, if approved, would span 80,000 acres in the Atlantic Ocean off Long Island's South Shore, with its closest point to land being 22.5 km south of Long Beach and Jones Beach (NROC 2022). Additional wind planning areas are under consideration in the NY Bight area (BOEM 2022). These proposed developments threaten migratory birds and marine mammals, including an area with high numbers of wintering sea ducks. There are currently no marine protected areas or fishing exclusion zones in this region and as human populations on the coast continue to grow, so does the pressure on the natural resources.

Status: There are few state or federally protected areas in this key site. Among the exceptions are Fire Island National Seashore, Jones Beach Park, Heckscher State Park, and Hither Hills Woods Preserve and State Park. In 1993, the Long Island South Shore Estuary Reserve Act was enacted to establish the Long Island South Shore Estuary Reserve that focuses on the preservation, protection, and enhancement of the natural, recreational, economic, and educational resources of the reserve. However, the reserve does not include areas of the Lower New York Bay, Sandy Hook Bay, and the waters around Montauk. There are local restrictions to fishing, shellfishing, or commercial and recreational boating traffic throughout the area.

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