

EASTERN LAKE ONTARIO SAND DUNES: AN OVERVIEW

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INTRODUCTION

The sand dunes along the eastern shore of Lake Ontario are an integral part of a coastal barrier environment consisting of beaches, sand dunes, embayment's and wetlands. This barrier system, which extends for roughly 17 miles, contains the largest and most extensive freshwater sand dune formations in New York State. In fact, the only dunes higher than these in the entire northeastern United States are on Cape Cod in Massachusetts.

DEVELOPMENT OF THE BARRIER SYSTEM

The bedrock formations and topography of the eastern Lake Ontario region have a geologic history of more than 400 million years. The surface formations and landforms, however, have a history no further back than the final advance and retreat of the last glacier 10,000 to 20,000 years ago. As the last glacier (Wisconsin glaciation) receded across the present Lake Ontario basin, melting water from the glacier formed Lake Iroquois, which extended far south of the existing Lake Ontario shoreline. The Lake Iroquois time period (approximately 12,000 years ago) serves as one benchmark used in describing the formation of existing landforms, including the sand dunes, in the eastern Lake Ontario region. Following the Lake Iroquois period, four distinct lake-level stages (Sandy Creek, Skinner Creek, Dune, and North Pond) resulted in sand deposits of different types and in different locations on the coastal and upland areas of the Lake Ontario basin. These geologic phases resulted in what many consider the most dramatic feature of the eastern Lake Ontario coastal barrier system: the extensive formations of sand dunes, some cresting at more than 70 feet above the surface of the lake.

OWNERSHIP OF THE BARRIER SYSTEM

Of the approximately 17 miles of Lake Ontario shoreline (measured between the Salmon River and Black Pond) contained in the eastern Lake Ontario barrier system, an estimated 6.7 miles (41%) is publicly owned, and an estimated 9.8 miles (59%) is privately owned. Of the publicly owned shorefront, 6 miles (90%) is contained within three state Wildlife Management Areas, with the remaining 10% (less than one mile) within state park land. Of the privately owned shorefront, roughly 7 miles (73%), is in residential use, less than a mile of shoreline is in commercial campground use, and roughly 1.7 miles is undeveloped.

MAJOR RESOURCE AREAS

Four major resource areas can be identified within the coastal barrier system. These resource areas are defined by the major aquatic habitat areas (wetlands and embayments) protected by the eastern Lake Ontario barrier system. These are the: Black Pond Resource Area; Southwick-Lakeview Resource Area; North and South Sandy Ponds Resource Area; and Deer Creek Resource Area.

Black Pond Resource Area

This area contains the northernmost of the major wetlands protected by the coastal barrier system. The barrier contains a nature preserve owned and managed by The Nature Conservancy at El Dorado Shores and Black Pond, the state's Black Pond Wildlife Management Area, and shorefront residential development. The barrier is particularly notable for the well-developed and preserved high sand dune formations found in The Nature Conservancy preserve and the Wildlife Management Area and for the regionally significant habitat provided for large concentrations of shorebirds, waterfowl, and other migratory birds.

Southwick-Lakeview Resource Area

This area contains Southwick Beach State Park and the Lakeview Wildlife Management Area and is entirely owned by the state of New York. The Wildlife Management Area contains two barrier sections separated by the mouths of Sandy and South Sandy creeks. The northern section of the Wildlife Management Area, bounded by the state park, is used for swimming and picnicking by people entering the area through the park; the southern section is less accessible by foot and less disturbed by human use. When the natural outlet of South Colwell Pond is open and flowing, marking the southern boundary of the Wildlife Management Area, the southern barrier section becomes a barrier island.

North and South Sandy Ponds Resource Area

The Sandy Ponds Resource Area is characterized by two barrier spits: the shifting North Sandy Pond inlet and the two sets of high dunes that flank it. The sand flats of each spit near the inlet provide regionally significant habitat for shorebirds and migratory species. The northern portion of the south spit contains the largest undeveloped, privately owned piece of land in the overall barrier system. Found in this resource area are shorefront residential development and a commercial day-use beach site. Because it is sheltered from the open waters of Lake Ontario, North Sandy Pond supports intensive recreational activities (boating and fishing) during the summer months, and several boating and marina-access facilities have been developed on the pond.

Deer Creek Resource Area

This resource area contains the Deer Creek Wildlife Management Area and privately owned sections of the Deer Creek marsh. Included in the Wildlife Management Area is the barrier system's fourth set of high sand dunes and a commercial campground.

FUTURE OF THE BARRIER SYSTEM

These dunes are vital to the continuing integrity of the barrier system. The climatic and geomorphic conditions under which the dunes were formed no longer exist. If destroyed, these dunes are unlikely to ever regain their current natural resource values.

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Education, Resource Bibliography: www.nysgdunes.org

