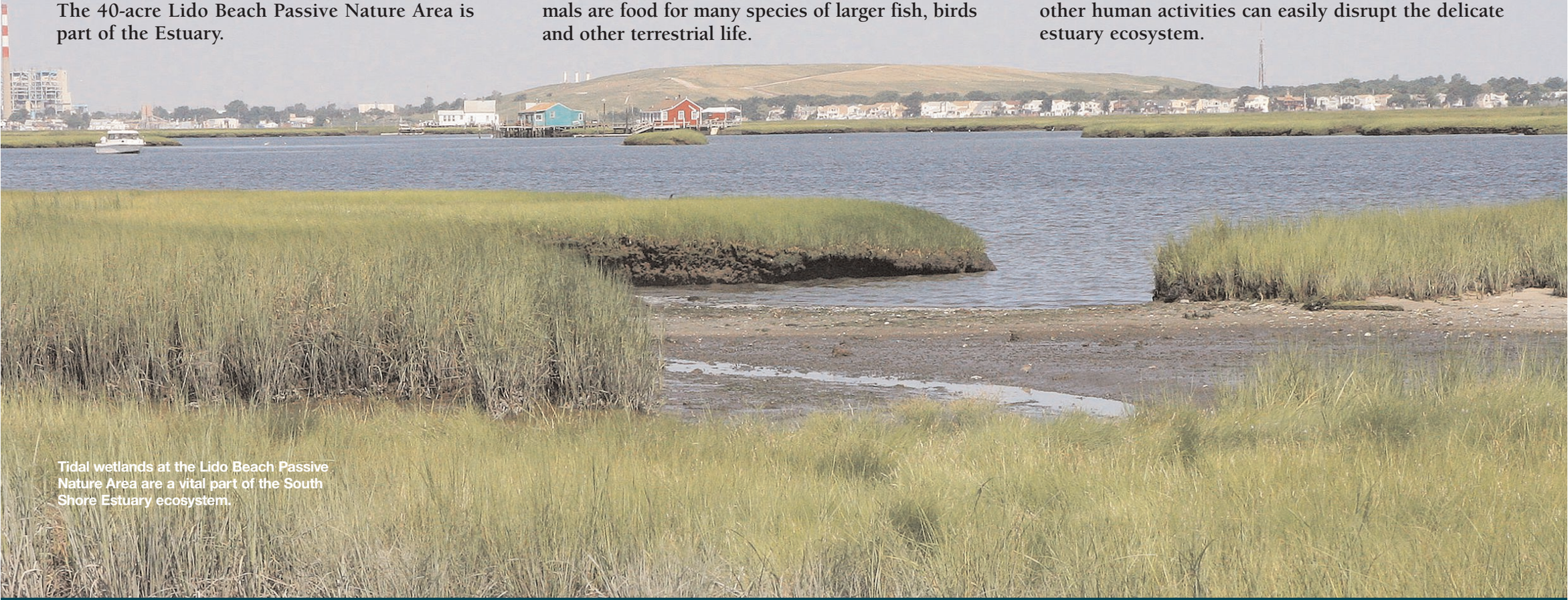
Natural Coasts

Land Meets Bays

Twice a day, Atlantic Ocean water rushes in through the East Rockaway and Jones Inlets filling the Hempstead Bays of Long Island's South Shore Estuary, which stretches 70 miles from the western boarder of Nassau County to the center of Suffolk County. Saltwater mixes with freshwater flowing off the land creating brackish water. Together, tidal wetlands, submerged aquatic vegetation and brackish water creates an estuary – the most biologically diverse and productive type of ecosystem on earth. The 40-acre Lido Beach Passive Nature Area is part of the Estuary.

Estuaries support plants and animals that are especially adapted for life in a constantly changing environment. Decaying organic matter nourishes microscopic plants and animals called plankton. Phytoplankton, like land plants, convert sunlight into energy through photosynthesis. Zooplankton, microscopic animals, feed on phytoplankton. Both planktons are considered the building blocks of the marine food web. Floating in the water planktons sustain organisms like hard clams, oysters, barnacles and forage fish. In turn, those animals are food for many species of larger fish, birds and other terrestrial life.

Globally, estuaries are more productive than grasslands, forests or farmlands. Most of the world's fish and shellfish species depend on tidal wetlands and submerged aquatic vegetation for food, breeding grounds, nursery areas and concealment from predators. Estuaries are also an important source of food and livelihoods for humans. In the United States about seventy-five percent of commercially and recreationally caught fish and seafood rely on estuaries during their life cycle. Impacts from stormwater pollution, overfishing and other human activities can easily disrupt the delicate estuary ecosystem.



Tidal wetlands at the Lido Beach Passive Nature Area are a vital part of the South Shore Estuary ecosystem.

This sign was prepared for the New York State Department of State with funds under the Environmental Protection Fund Local Waterfront Revitalization Program.

New York State Department of State, Division of Coastal Resources

Historic Coasts

Bay Houses

In the 1600s baymen and their families harvested salt hay grass from Long Island's South Shore Estuary marshes for winter livestock feed. Since harvesting often took days or weeks they spent nights on the marshes in simple shelters built from driftwood. Over time these shelters developed into shacks made of salvaged building materials and became known as bay houses. In response to the demand for bay houses the Town of Hempstead began leasing marshland plots in the 1700s. Leases and bay houses were passed from one generation to the next - a tradition unique to the Estuary.

During the 1800s bay houses continued to be built by baymen, fishermen and waterfowl hunters to access clam and oyster beds, fishing areas and birding grounds. With the decline of the oystering industry and restrictions on commercial waterfowl hunting in the early 1900s many bay houses evolved into recreational retreats. Some isolated bay houses became ideal hideouts for "rum-runners," people who transported and sold liquor during prohibition, between 1920 and 1933 when the sale, production and transportation of alcohol was illegal in the United States.

By the early 1960s there were 400 bay houses located in the Town of Hempstead's marshes. Concerned about environmental impacts on the marshlands and wildlife the Town stopped renewing leases in 1964, resulting in many bay houses being removed the following year. Realizing the historical significance of bay houses, the Town changed course and in 1991 allowed the remaining houses to be preserved. Unfortunately, coastal storms, erosion and vandalism have taken their toll and the number of bay houses continues to dwindle.

Although elevated above the high tide line, bay houses remain vulnerable to coastal storms and erosion.

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Natural Coasts

Diamondback Terrapins

Diamondback terrapins are the only turtles native to estuaries along the east coast of the United States. These distinctive turtles are named for the diamond-shaped growth rings on the plates, or scutes, of their top shell, or carapace. Diamondback terrapins feed on clams, mussels, snails and crabs. They hibernate in winter by burrowing deep in the mud and in the spring they emerge to mate. Egg-laden females leave the water between mid-June and mid-July to seek suitable nesting sites on land. After digging a nest in soft sandy soil they lay and bury 12 or more eggs which incubate for about 60 days.

During the incubation period diamondback terrapin eggs are vulnerable to predation by animals such as raccoons and red foxes. Eggs in undisturbed nests will hatch in about nine weeks. Like all turtles, terrapins exhibit temperature dependent sex determination – higher nest temperatures produce females while lower nest temperatures produce males. When ready to hatch baby turtles, called hatchlings, use their "egg tooth," a tiny bump on their beak, to crack open the egg's shell. Hatchlings are also heavily preyed upon but surviving diamondback terrapins can live up to 40 years or more.

Historically, diamondback terrapins were harvested for food and were nearly hunted to extinction. Their meat was eaten by native and colonial Americans and helped sustain the Continental Army during the American Revolutionary War. Diamondback terrapins remain at risk today. Nesting sites are threatened by development, many terrapins drown when caught in crab traps and females are in danger when crossing roads in search of nest sites. Town of Hempstead conservation biologists monitor diamondback terrapin activity at the Lido Beach Passive Nature Area to protect them and their habitat.

A female diamondback terrapin deposits eggs, called a clutch, in her nest. She can lay several clutches in one breeding season.

A newly-hatched diamondback terrapin is not much larger than a quarter when it leaves the nest.

Diamondback terrapin (*Malaclemys terrapin*)

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Natural Coasts

Clapper Rail *(Rallus longirostris)*

Bird Paradise

Songbirds, shorebirds, waterfowl and birds of prey flock to Long Island's South Shore Estuary throughout the year. Salt marshes, tidal mud flats and sandy beaches provide exceptionally diverse habitat for resting, feeding, nesting and raising offspring. As the seasons change some birds arrive just as others leave. The Town of Hempstead's Lido Beach Passive Nature Area is a protected paradise for birds as well as bird watchers.

Common Yellowthroat (*Geothlypis trichas*)

Spring

When the weather warms, small and vocal songbirds are the first to arrive at the Lido Nature Area. Grey Seaside Sparrows live exclusively in the tall grass of the salt marsh while Common Yellowthroats prefer the shrubs in the adjacent upland area. Tree Swallows nest in tree cavities or specially installed nest boxes.

Black Skimmer *(Rynchops niger)*

Summer

Lido Nature Area summer residents like Least Terns and Black Skimmers catch fish while flying low over the water and establish nesting colonies on the beach. Wading birds such as Great Egrets and Clapper Rails pluck fish, crabs and worms from shallow waters with their long slender beaks and nest within the salt marsh.

Osprey *(Pandion haliaetus)*

Fall

Birds are on the move during this season. Many songbirds leave the Lido Nature Area and migrate south while ducks and geese, called wintering waterfowl, arrive from the Arctic. Birds of prey, also called raptors, such as the Osprey, stop to feed and rest while traveling to wintering grounds as far away as South America.

Brant *(Branta bernicla)*

Winter

Atlantic Brant, American Black Duck and Red-breasted Merganser are some of the waterfowl that overwinter at the Lido Nature Area when their northern breeding grounds freeze over. They are able to swim in cold water and walk on ice because their circulatory systems control heat loss.

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Sanctuary for Wading Birds

Lido Beach Passive Nature Area is a protected sanctuary within Long Island's South Shore Estuary and an ideal habitat for wading birds like herons and egrets, often called "waders." Migrating north from their wintering grounds each spring these birds arrive at the Lido Nature Area to feed on the abundant fish and crustaceans living in the shallow waters, salt marshes and tidal mud flats. With specially adapted long legs, necks and bills waders are excellent fishers. Blending into the shoreline's foliage a wader will wait patiently for unsuspecting prey to come by. With a rapid motion it uses its snake-like neck and dagger-shaped bill to strike and spear a small fish or clamp tightly around a crab. Waders are near the top of the food chain. Their presence indicates that the Lido Nature Area supports a healthy Estuary ecosystem.

Great Blue Heron (*Ardea herodias*)

Beautiful breeding feathers of herons, egrets and other wading birds were once used to adorn women's hats. By the late 1800s the demand for these valuable feathers - called plumes - resulted in hunting these birds to near extinction. Plume hunters would harvest nearly 150 Great Egrets to obtain just one pound of feathers. Public outcry against this devastating practice led to the creation of the National Audubon Society in 1905. New York State led the nation when it passed the Audubon Plumage Bill in 1910, which banned the sale of native bird plumes. Today, the international *Migratory Bird Treaty Act of 1918* remains one of the strongest laws protecting wild North American birds. The Great Egret became the symbol of the National Audubon Society in 1953.

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