

Attachment B:

COASTAL FISH & WILDLIFE HABITAT ASSESSMENT FORM

Name of Area: **East Hempstead Bay**
Designated: **March 15, 1987**
Date Revised: **December 15, 2008**
County: **Nassau**
Town(s): **Hempstead**
7½' Quadrangle(s): **Freeport, NY; Jones Inlet, NY**

Assessment Criteria

Score

Ecosystem Rarity (ER)–the uniqueness of the plant and animal community in the area and the physical, structural, and chemical features supporting this community.

ER assessment: One of the largest, undeveloped, coastal wetland ecosystems in New York State.

64

Species Vulnerability (SV) – the degree of vulnerability throughout its range in New York State of a species residing in the ecosystem or utilizing the ecosystem for its survival. (E = Endangered, T = Threatened, SC = Special concern)

SV assessment: Common tern (T) and osprey (SC) nesting. Additive division: $25 + 16/2 = 33$

33

Human Use (HU) – the conduct of significant, demonstrable, commercial, recreational, or educational wildlife-related human uses, either consumptive or non-consumptive, in the area or directly dependent upon the area.

HU assessment: One of the most important waterfowl hunting areas on Long Island. Regionally important for recreational fishing. Additive division: $9 + 9/2 = 13.5$

13.5

Population Level (PL) – the concentration of a species in the area during its normal, recurring period of occurrence, regardless of the length of that period of occurrence.

PL assessment: Wintering waterfowl concentrations (brant, especially) of regional significance.

9

Replaceability (R) – ability to replace the area, either on or off site, with an equivalent replacement for the same fish and wildlife and uses of those same fish and wildlife, for the same users of those fish and wildlife.

R assessment: Irreplaceable.

1.2

Habitat Index: (ER + SV + HU + PL) = 119.5

Significance: (HI x R) = 143.4

NEW YORK STATE
SIGNIFICANT COASTAL FISH AND WILDLIFE HABITAT
NARRATIVE

EAST HEMPSTEAD BAY

LOCATION AND DESCRIPTION OF HABITAT:

East Hempstead Bay ("East Bay") is located along the south shore of Long Island, between the Meadowbrook State Parkway and Wantagh State Parkway, in the Town of Hempstead, Nassau County (7.5' Quadrangles: Freeport, N.Y.; and Jones Inlet, N.Y.). This approximately 5,000 acre area is generally defined by the mean high water elevation on the north and south sides, by the shoulder of the Meadowbrook Parkway on the west, and by the edge of the Wantagh Parkway right-of-way on the east. The fish and wildlife habitat is the entire bay, which includes extensive areas of undeveloped salt marsh, tidal flats, dredged material islands, and open water. The bay is bordered by high density residential development and small craft harbor facilities to the north. All other sides of the bay are bordered by undeveloped highway corridors, including the Bay State Parkway in Jones Beach State Park, south of the Sloop Channel. Most of East Hempstead Bay is owned by the Town of Hempstead and is managed as a wetland conservation area.

East Hempstead Bay is characterized by an extensive system of sheltered shallow bays and salt marsh islands connected by a network of channels and tidal creeks. The mainland salt marshes and tidal creeks in this section have been virtually eliminated by bulkheading and filling, thus there are no sizable tributaries entering the bay. Characteristic communities of this estuarine intertidal subsystem include high and low salt marshes and salt pannes dominated by smooth cordgrass (*Spartina alterniflora*), common glasswort (*Salicornia europaea*), salt hay grass (*Spartina patens*), spike grass (*Distichlis spicata*), and perennial salt marsh aster (*Aster tenuifolius*). Water depths in the bay vary from less than 6 feet (below mean low water) in the natural creeks and small bays, to over 20 feet in portions of some dredged navigation channels and in the large open water areas of the bay. Tidal range in the bay averages approximately 1.9 to 2.7 feet depending on the location.

FISH AND WILDLIFE VALUES:

East Hempstead Bay comprises approximately one-fourth of the vast Hempstead - South Oyster Bay wetland complex. The bay represents one of the largest undeveloped coastal wetland ecosystems in New York State. This highly diverse area is important to fish and wildlife throughout the year. Common terns (T) nest in several locations in the bay, including, but not limited to Deep Creek Meadow, Neds Meadow, Olivers Island and Cuba Island. Between 1993 and 2005, an estimated annual average of 355 pairs of common tern (T) (468 in peak year) nested in East Hempstead Bay. Common terns (T) typically nest in simple scrapes built in sand, gravel, shells, and seaweed above the high tide mark. Tern breeding colonies may contain several hundred to several thousand birds, including roseate (E), least (T), common (T), and gull-billed terns, along with black skimmer. Productivity of the surrounding waters is of vital importance to common terns (T) because they feed on small fish, shrimp, and aquatic insects. Forster's tern has been moving northward along the Atlantic Coast in recent years, resulting in an increasing population on Long Island. East Hempstead Bay's population of Forster's tern is among the largest on Long Island, with an average of approximately 37 nesting pairs per year (121 in peak year). Forster's

tern frequents large marshes and the surrounding open water during the breeding season, nesting in salt marsh islands along the coast. On the east coast, Forster's tern nests are usually large, well-built piles of dead grasses and sedges lined with reeds.

East Hempstead Bay, as a part of The Hempstead Bay - South Oyster Bay complex, along with adjacent areas of western Great South Bay, contains one of the more important sites in the New York Bight study area and the most important areas on Long Island for nesting by colonial wading birds (heron, egrets, and ibises), with over 900 pairs nesting in 1995. Species of wading birds nesting in this area include snowy egret, glossy ibis, black-crowned night-heron, great egret, little blue heron, green-backed heron, tri-colored heron, yellow-crowned night-heron, and cattle egret. Nests are usually placed in woody vegetation which has become established on abandoned highway right-of-ways and dredged material deposits.

The salt marsh islands in East Hempstead Bay are also home to breeding osprey (SC). From 1998 to 2004 an estimated annual average of 6 pairs (7 in peak year) of breeding osprey (SC) were observed in East Hempstead Bay. Northern harrier (T) and short-eared owl (SC) nested in East Bay (along the Meadowbrook State Parkway right-of-way) in 1983 and 1984, but unfortunately, more recent data is unavailable. Other species nesting in the area include Canada goose, herring gull, American black duck, mallard, American oystercatcher, gull-billed tern, clapper rail, willet, fish crow, marsh wren, sharp-tailed sparrow, and seaside sparrow (SC). The salt marshes, intertidal flats, and shallows in East Hempstead Bay are used extensively as feeding areas for birds nesting here and for many other species during migration (shorebirds in particular).

East Hempstead Bay is one of the most important waterfowl wintering areas (November - March) on Long Island. Mid-winter aerial surveys of waterfowl abundance in East Hempstead Bay for the 13 year period from 1986-1998 (excluding 1997) indicate average concentrations of almost 1,850 birds in the bay each year (3,272 in peak year), including approximately 1,211 brant (3,105 in peak year), 319 American black duck (1,100 in peak year), and 208 greater and/or lesser scaup (1,155 in peak year), along with lesser numbers of merganser (common, red-breasted and/or hooded), common goldeneye, bufflehead, and Canada goose. East Hempstead Bay supports regionally significant concentrations of brant. Waterfowl use of the bay during winter is influenced in part by the extent of ice cover each year. Generally, brant and geese feed in open, shallow water areas through midwinter, while later in spring (prior to migration), the birds feed extensively in the salt marshes. Scaup and mergansers concentrate in the deeper waters of the numerous channels. Concentrations of waterfowl also occur in the area during spring and fall migrations (March - April and October - November, respectively). Annual November Atlantic Brant Productivity Surveys from 1999 through 2004 (excluding 2001) indicate average annual concentrations of approximately 2,842 brant in East Hempstead Bay. All of East Hempstead Bay is open to the public for waterfowl hunting, and the area supports regionally significant hunting pressure.

In addition to having significant bird concentrations, East Hempstead Bay is a productive area for marine finfish, shellfish, and other wildlife. Atlantic menhaden, weakfish, and winter flounder spawn in the sandy shallows, while American sandlance, killifish, pipefish, sticklebacks, and Atlantic silversides spawn in edge habitat provided by the mosaic of salt marsh islands. Young bluefish, striped bass, summer flounder, and tautog are dependent upon the bays as nurseries. Harvest records from the Hempstead Bays include winter and summer flounder, weakfish, grey snapper, and northern kingfish. Mollusks and crustaceans in the bay include soft clam, hard clam, bay scallop, ribbed mussel and blue crab. Horseshoe crab is found within the East Hempstead Bay significant habitat as well. Almost all of East Hempstead Bay is open for shellfishing, with areas designated as conditionally certified. Landings data reported from all of the Hempstead Bay - South Oyster Bay Complex indicate an average annual commercial

harvest of 8,469 bushels of hard clams, and 1,547 bushels of soft clams from 1993 to 2003. As a result of the abundant fisheries resources in the bay, and its proximity to the New York metropolitan area, East Hempstead Bay receives heavy recreational fishing pressure, of regional significance. Diamondback terrapin nest among the salt marsh islands in the bay. Deep Creek Meadow, in East Hempstead Bay provides an important haulout area for harbor seals, which they use for resting and sunning. This location is one of about five major haulouts around Long Island, serving as a focal point for seals feeding in the bay.

IMPACT ASSESSMENT:

Any activity that would degrade water quality, increase turbidity, increase sedimentation, or alter flows, temperature, or water depths would adversely affect the biological productivity of this area. All species may be affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, excessive turbidity or sediment loading, non-point source runoff, waste disposal (including vessel wastes), and stormwater runoff. Efforts should be made to improve water quality in the bay, including the reduction or elimination of discharges from vessels and upland sources, effective oil and toxic chemical spill prevention and control programs, upgrading of wastewater treatment plants, enactment of pet waste ordinances to reduce coliform contributions to the bay, and the implementation of erosion control and stormwater pollution prevention best management practices. Vegetated upland buffer zones (e.g. wetlands, dunes, and forested areas) should be protected or established to reduce non-point source pollution and sedimentation from upland sources.

Alteration of tidal patterns in East Hempstead Bay (e.g., sediment removal by dredging, channelization, bulkheading), would have negative impacts on the biotic communities present. No new navigation channels should be excavated within the area. Dredging to maintain existing boat channels in the bay should be scheduled in between September 15 and December 15 to minimize adverse effects on aquatic organisms. Unregulated dredged material placement in this area would be detrimental to the habitat, but such activities may be designed to maintain or improve the habitat for certain species of wildlife.

Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development (e.g., natural salt marsh, tidal flats, or shallows), would result in the loss of productive areas which support the fish and wildlife resources of East Hempstead Bay. Elimination or significant disturbance of salt marsh and intertidal areas, through loss of intertidal connection, ditching, excavation, or filling, would result in a direct loss of a valuable habitat. Restoration of previously connected portions of the habitat, including the removal of structures (e.g. bulkheads, groins, jetties) which disrupt natural sedimentation and deposition patterns and physically alter the habitat may be beneficial. Maintenance of existing erosion control structures which interfere with natural coastal process should be carefully evaluated for need and where possible, non-structural solutions should be utilized.

Unrestricted use of motorized vessels including personal watercraft in shallow waters can have adverse effects on the benthic community and on fish and wildlife populations. Use of motorized vessels should be controlled (e.g., no wake zone, speed zones, zones of exclusion) in and adjacent to shallow waters and adjacent wetlands.

Thermal discharges, depending on time of year, may have variable effects on use of the area by marine species and overwintering waterfowl. Installation and operation of water intakes could have significant impact on juvenile (and adult, in some cases) fish concentrations, through impairment or entrainment. Activities that would enhance migratory, spawning, or nursery fish habitat, particularly where an area is

essential to a species' life cycle or helps to restore an historic species population would be beneficial. Where appropriate, hydrological modifications (e.g. dams, dikes, channelization, bulkheading, sedimentation, etc.) should be mitigated or removed, including the rejoining of formerly connected tributaries, and the removal of obstructions or improvements to fish passage.

Nesting birds inhabiting the islands of East Hempstead Bay are highly vulnerable to disturbance by humans from April 15 through August 15. Significant pedestrian traffic or recreational use (e.g., boat and personal watercraft landing, off-road vehicle use, picnicking) and highway maintenance activities in or adjacent to significant bird nesting areas could easily eliminate the use of breeding areas and should be minimized during this period. Predation of chicks and destruction of eggs or nests by unleashed pets (e.g., dogs, cats) and natural predators may also occur, and predator control should be implemented where feasible. Fencing and/or annual posting of the bird nesting area should be provided to help protect the nesting bird species.

Activities to protect or restore wetland habitat in East Hempstead Bay, consistent with best management practices, (including the restoration of historic tidal regime, planting of native vegetation, control of invasive species, etc.) may enhance habitat values for fish and wildlife species.

Any permanent alteration or human disturbance of the seal haulout area, or obstruction of seal migrations would adversely affect this species. Significant underwater noise, from dredging or other underwater activities, may also preclude harbor seals from using the area.

HABITAT IMPAIRMENT TEST:

A **habitat impairment test** must be applied to any activity that is subject to consistency review under federal and State laws, or under applicable local laws contained in an approved local waterfront revitalization program. If the proposed action is subject to consistency review, then the habitat protection policy applies, whether the proposed action is to occur within or outside the designated area.

The specific **habitat impairment test** is as follows.

In order to protect and preserve a significant habitat, land and water uses or development shall not be undertaken if such actions would:

- destroy the habitat; or,
- significantly impair the viability of a habitat.

Habitat destruction is defined as the loss of fish or wildlife use through direct physical alteration, disturbance, or pollution of a designated area or through the indirect effects of these actions on a designated area. Habitat destruction may be indicated by changes in vegetation, substrate, or hydrology, or increases in runoff, erosion, sedimentation, or pollutants.

Significant impairment is defined as reduction in vital resources (e.g., food, shelter, living space) or change in environmental conditions (e.g., temperature, substrate, salinity) beyond the tolerance range of an organism. Indicators of a significantly impaired habitat focus on ecological alterations and may include but are not limited to reduced carrying capacity, changes in community structure (food chain relationships, species diversity), reduced productivity and/or increased incidence of disease and mortality.

The *tolerance range* of an organism is not defined as the physiological range of conditions beyond which a species will not survive at all, but as the ecological range of conditions that supports the species population or has the potential to support a restored population, where practical. Either the loss of individuals through an increase in emigration or an increase in death rate indicates that the tolerance range of an organism has been exceeded. An abrupt increase in death rate may occur as an environmental factor falls beyond a tolerance limit (a range has both upper and lower limits). Many environmental factors, however, do not have a sharply defined tolerance limit, but produce increasing emigration or death rates with increasing departure from conditions that are optimal for the species.

The range of parameters which should be considered in applying the habitat impairment test include but are not limited to the following:

1. physical parameters such as living space, circulation, flushing rates, tidal amplitude, turbidity, water temperature, depth (including loss of littoral zone), morphology, substrate type, vegetation, structure, erosion and sedimentation rates;
2. biological parameters such as community structure, food chain relationships, species diversity, predator/prey relationships, population size, mortality rates, reproductive rates, meristic features, behavioral patterns and migratory patterns; and,
3. chemical parameters such as dissolved oxygen, carbon dioxide, acidity, dissolved solids, nutrients, organics, salinity, and pollutants (heavy metals, toxics and hazardous materials).

Although not comprehensive, examples of generic activities and impacts which could destroy or significantly impair the habitat are listed in the Impact Assessment section to assist in applying the habitat impairment test to a proposed activity.

KNOWLEDGEABLE CONTACTS:

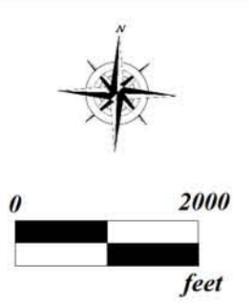
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Significant Coastal Fish and Wildlife Habitats

- East Hempstead Bay
- Storehouse, Jones Beach State Park
- Middle Hempstead Bay (In Part)
- South Oyster Bay (In Part)
- Jones Beach West (In Part)

Contours, at 5-foot intervals, shown unretouched from 1969 U.S. Geological Survey map, datum, mean sea level.

STOREHOUSE, JONES BEACH STATE PARK

JONES BEACH WEST