

Attachment B:

COASTAL FISH & WILDLIFE HABITAT ASSESSMENT FORM

Name of Area: **South Oyster Bay**
Designated: **March 15, 1987**
Date Revised: **December 15, 2008**
County: **Nassau**
Town(s): **Hempstead, Oyster Bay, Babylon**
7½' Quadrangle(s): **Amityville, NY; Freeport, NY; Jones Inlet, NY; West Gilgo Beach, 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 wetlands 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) nesting. **25**

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. **9**

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 brant concentrations of statewide significance. One of three locations with nesting Forster’s tern on Long Island. Additive division: $16 + 9/2 = 20.5$ **20.5**

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) = 118.5 **Significance: (HI x R) = 142.2**

NEW YORK STATE
SIGNIFICANT COASTAL FISH AND WILDLIFE HABITAT
NARRATIVE

SOUTH OYSTER BAY

LOCATION AND DESCRIPTION OF HABITAT:

South Oyster Bay is located along the south shore of Long Island, east of the Wantagh State Parkway, and extends to a north-south channel just east of the Nassau-Suffolk County line, in the Towns of Hempstead and Oyster Bay, Nassau County, and the Town of Babylon, Suffolk County (7.5' Quadrangles: Freeport, N.Y.; Jones Inlet, N.Y.; Amityville, N.Y.; and West Gilgo Beach, N.Y.). This approximately 7,700 acre area is generally defined by the mean high water elevation on the north side, by the Gilgo Cut boat channel on the east, by the center line of the State boat channel to the south, and by Zach's Bay and the Wantagh Causeway right-of-way to the west. The bay is bordered on the north by extensive residential development and small craft harbor facilities. The remainder of the area is bordered by undeveloped highway right-of-way, State parklands, and Great South Bay. 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 spoil areas on the Line Island complex resulted from construction of the Cedar Creek sewage treatment effluent pipeline.

South Oyster Bay is an integral part of an interconnected marsh complex that also includes the three Hempstead bays. A healthy subsystem of sensitive estuarine intertidal areas exists in the bay. Characteristic communities of the 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 South Oyster Bay are generally less than 6 feet below mean low water, except in Zach's Bay and in portions of some dredged navigation channels. Tidal range in the bay averages approximately 1.4 feet depending on the location. Most of South Oyster Bay is owned by the Towns of Hempstead and Oyster Bay, and is managed as a wetland conservation area.

FISH AND WILDLIFE VALUES:

South Oyster Bay comprises 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 many locations throughout the bay, including the Line Island Group, Black Banks Island, Goose Island, Neds Island, and several unnamed marsh islands in the eastern end of the area. For the 13 year period from 1993 to 2005, an annual average of 438 nesting pairs of common terns (T) were observed in South Oyster Bay (602 in peak year). Common terns (T) nest in large colonies located in sand, gravel, shells, and seaweed above the high tide mark. 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. Although historical data is limited for Forster's tern, the species has shown

an increasing presence in the bay since 2001. From 2001 to 2005, shorebird surveys estimate an annual average of 27 nesting pairs of Forster's tern were documented in the bay, making this area one of three areas on Long Island with a significant breeding population. An estimated annual average of 2 breeding pairs of osprey (SC) were observed on the salt marsh islands of South Oyster Bay from 1999 to 2004. South Oyster Bay is an important nesting area and feeding ground for a variety of colonial wading birds, including snowy egret, great egret, black-crowned night heron, tri-colored heron, glossy ibis, and green-backed heron. Other species nesting in the area include herring gull, great black-backed gull, American oystercatcher, black skimmer (SC), and least tern (T). The salt marshes, intertidal flats, and shallows in this area (especially the Line Islands) provide invertebrate-rich feeding grounds for birds nesting here and for many migratory shorebirds, including sanderling, dowitchers, red knot, ruddy turnstone, marbled godwit, plovers, American oystercatchers, and sandpipers.

South Oyster Bay is one of the most important waterfowl wintering areas (November - March) on Long Island. Mid-winter aerial surveys of waterfowl abundance for the twelve year period from 1986-1998, (excluding 1997), indicate average concentrations of 2,997 birds in the bay each year (5,582 in peak year), including approximately 1,947 brant (4,288 in peak year), 598 American black duck (792 in peak year), 211 greater and/or lesser scaup, along with lesser numbers of merganser (common, hooded, and red-breasted), mallard, common goldeneye, bufflehead, Canada goose, ruddy duck, and historic populations of long-tailed duck, and American widgeon. The Hempstead - South Oyster Bay complex supports one of the largest wintering concentrations of brant in the Atlantic Flyway region, representing 8% of the total population. South Oyster Bay alone represents 11% of the state's total brant population. Waterfowl use of the bay during winter is influenced in part by the extent of ice cover each year. Brant and American black duck congregate to feed and rest in the shallow waters around salt marsh islands and tidal flats, while scaup and red-breasted mergansers concentrate in the deeper waters of the numerous channels. Concentrations of waterfowl also occur in South Oyster Bay during spring and fall migrations (March - April and October - November, respectively). All of South Oyster Bay is open to the public for waterfowl hunting, and the area supports regionally significant hunting pressure.

In addition to having significant bird concentrations, South Oyster Bay is a productive area for marine finfish, shellfish, and other wildlife. The bay serves as critical pre-migratory habitat for yearling striped bass and bluefish. It is also an important spawning ground for winter flounder and Atlantic menhaden, as well as forage fish species including Atlantic silverside, bay anchovy, and killifish. Harvest records from South Oyster Bay include winter and summer flounder, weakfish, grey snapper, and kingfish. Mollusks and crustaceans in the bay include soft clam, hard clam, scallop, ribbed mussel and blue crab. There is a small-scale shellfish hatchery (floating upweller system or grow-out raft) within South Oyster Bay. 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, South Oyster Bay receives heavy recreational fishing and shellfishing pressure, of regional significance. Great Island Channel and Sloop Channel are extensively used for recreational fishing. Diamondback terrapin nest among the salt marsh islands in the bay.

South Oyster Bay consists of over 2,544 acres of submerged rooted aquatic vegetation beds, accounting for approximately 33% of the entire habitat area. These beds consist of rooted plants, primarily by eelgrass (*Zostera marina*) with some wigeon grass (*Ruppia maritima*), as well as unattached macrophytes, growing in shallow, quiet waters below the spring low tide level. Submerged aquatic vegetation beds provide spawning and foraging habitat for an array of mollusks, crustaceans, juvenile fish, as well as diving ducks. The distribution and abundance of benthic species in the bay's eelgrass community is likely controlled by a number of factors that include eelgrass stem density, water

temperature and salinity, sediment type, predation, food supply, and human harvest.

IMPACT ASSESSMENT:

Any activity that would degrade water quality, increase turbidity, increase sedimentation, or alter flows, temperature, or water depths would affect the biological productivity of this area. Most species would be adversely 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 South Oyster Bay (e.g., sediment removal by dredging, channelization, bulkheading) would have negative impacts on the biotic communities present. Elimination 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. 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 South Oyster Bay. 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 through resuspension of seafloor sediments and through shoreline erosion which may reduce water clarity and increase sedimentation. 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. Docks, piers, catwalks, or other structures may be detrimental to submerged aquatic vegetation (SAV) beds through direct or indirect effects from shading, mooring chain scarring, and other associated human uses. Where environmental parameters are appropriate, opportunities for restoration of SAV beds may exist. Any restoration of SAV beds should utilize the best available science and implement proper monitoring protocols.

Thermal discharges, depending on time of year, may have variable effects on use of the area by marine species, such as sea turtles 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 South Oyster 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, picnicking) of those islands which contain bird nesting areas could easily eliminate the use of this site as a breeding area 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 South Oyster 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.

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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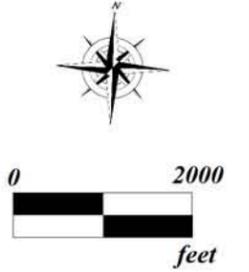
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Significant Coastal Fish and Wildlife Habitats

- South Oyster Bay (In Part)
- part 1 of 2
- Parking Lot 9, Jones Beach State Park
- Tobay Sanctuary (In Part)
- East Hempstead Bay (In Part)

New York State
Department of State
Division of
Coastal Resources



PARKING LOT 9, JONES BEACH STATE PARK



Significant Coastal Fish and Wildlife Habitats

- South Oyster Bay (In Part)
part 2 of 2
- Great South Bay - West (In Part)
- Tobay Sanctuary (In Part)
- Jones Beach East (In Part)

Contours at 1-foot intervals shown unrevised from 1969
Datum is mean sea level