
COASTAL FISH & WILDLIFE HABITAT ASSESSMENT FORM

Name of Area: **Oyster Bay and Cold Spring Harbor**
Counties: **Nassau, Suffolk**
Town(s): **Oyster Bay, Huntington**
7½' Quadrangle(s): **Bayville, NY-CT; Lloyd Harbor, NY-CT; Hicksville, NY**
Originally Designated: **March 15, 1987**
Modified: **October 15, 2005**

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 several major embayments on the north shore of Long Island; rare in ecological subregion.

16

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: Least tern (T) foraging.

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: Commercial oyster farming of statewide significance; recreational fishery and commercial clam harvest of regional significance; educational use of county-level significance.
Additive Division: $16 + 9/2 + 9/4 + 4/8 = 23.5$

23.5

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: Concentrations of American oyster are unusual in New York State. One of the most important waterfowl wintering areas on the north shore of Long Island. One of the tributaries contains the only known spawning population of brook trout in Nassau County.

16

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] = 80.5

Significance = HI x R = 96.6

NEW YORK STATE
SIGNIFICANT COASTAL FISH AND WILDLIFE HABITAT
NARRATIVE

OYSTER BAY AND COLD SPRING HARBOR

LOCATION AND DESCRIPTION OF HABITAT:

The Oyster Bay and Cold Spring Harbor habitat is located on the north shore of Long Island, between Mill Neck and the Town of Huntington shoreline, in the Towns of Oyster Bay, Nassau County, and Huntington, Suffolk County (7.5' Quadrangles: Bayville, NY-CT; Lloyd Harbor, NY-CT; and Hicksville, NY). The harbor complex is approximately 5,281 acres in size. The fish and wildlife habitat consists of the open water and tidal wetland areas in the bay and harbor, extending from the Bayville Bridge to the west to Whitewood Point to the east, including Plum Point Marsh on Centre Island. All lands and waters within the Oyster Bay National Wildlife Refuge are federally excluded from the coastal area. Water depths in Oyster Bay and Cold Spring Harbor range from 6 to 30 feet below mean low water (with depths of 30 to 60 feet between Centre Island and Cove Neck and 70 feet near Whitewood Point), and have a tidal range of approximately 7 feet. The Oyster Bay and Cold Spring Harbor habitat is generally less than six feet deep at mean low water and contains intertidal mudflats, salt marsh, and sand islands. The harbor complex is bordered by residential development, scattered forested headlands, and extensive recreational boating facilities, with only a few areas of undeveloped salt marsh remaining.

FISH AND WILDLIFE VALUES:

The Oyster Bay Harbor/Cold Spring Harbor complex is one of several major embayments on Long Island's north shore. This protected coastal bay system is important to fish and wildlife throughout the year. Least tern (T) forage in Oyster Bay, often following schools of bait fish. Although suitable maritime beach nesting habitat is limited within the overall habitat area, at least one piping plover (E, T-Fed) pair was observed on the beach at Plum Point marsh on Centre Island in 2002. Unfortunately, further documentation of use by piping plover (E, T-Fed) is unavailable.

Oyster Bay Harbor/Cold Spring Harbor is one of the most important waterfowl wintering areas (November-March) on the north shore. Mid-winter aerial surveys of waterfowl abundance for the period 1986-1999 (excluding 1997) indicate average concentrations of 1,723 birds in the bay each year (3,079 in peak year), including 612 greater and/or lesser scaup (2000 in peak year), 258 American black duck (655 in peak year), 167 canvasback (1000 in peak year), 117 common goldeneye (457 in peak year), 284 Canada goose (1090 in peak year), along with lesser numbers of mallard, bufflehead, long-tailed duck, and merganser (common, hooded, and/or red-breasted). Oyster Bay/Cold Spring Harbor provides the most important wintering area for greater and lesser scaup on the north shore of Long Island. Waterfowl use of the bay during winter is influenced in part by the extent of ice cover each year. Concentrations of waterfowl are also documented in Oyster Bay Harbor/ Cold Spring Harbor during spring and fall migrations (March-April and October-November, respectively).

In addition to waterfowl use, Oyster Bay/Cold Spring Harbor complex is a highly productive area for marine finfish and shellfish. The harbors serve as nursery and feeding areas (from April 1 - November 30, generally) for striped bass, scup, summer flounder, bluefish, Atlantic silversides, Atlantic menhaden, winter flounder, and blackfish. The Cold Spring Harbor area is also one of the few areas on Long Island where smelt spawning runs (in mid-March) have been documented. Mill Pond, despite problems with water quality, supports a brown trout fishery. Spawning brook trout have been documented in the Mill Pond outlet stream as well as its inlet upstream to Glen Cove Road. The Mill Pond outlet stream contains the only known spawning population of native brook trout in Nassau County. As a result of the abundant fisheries resources in the area, and its proximity to the metropolitan New York area, Oyster Bay and Cold Spring Harbor supports an extensive recreational fishery, of regional significance.

The Oyster Bay Harbor/Cold Spring Harbor complex is also widely renowned as one of the most important oyster producing areas in New York State, producing approximately 90% of the State's oyster harvest. Oysters are generally found in waters greater than 6 feet deep. Spawning occurs in early summer. The harbor complex is also a valuable hard clam area, producing up to 40% of New York State's hard clam harvest in any given year. Most of the waters in Oyster Bay Harbor/Cold Spring Harbor are certified for shellfishing and are leased for commercial harvest (*i.e.*, farming) of this resource, especially in the Oyster Bay Harbor portion of the habitat. The southernmost regions of Oyster Bay and Cold Spring Harbors are uncertified for commercial shellfish harvesting while several areas are seasonally certified for commercial shellfishing.

Presence of diamondback terrapin has been documented within the Oyster Bay and Cold Spring Harbor habitat complex. Research into the health of the diamondback terrapin populations in this area are ongoing. The western shore of Oyster Bay Harbor has also been utilized as a winter haul-out site for harbor seal although adequate documentation is needed to fully understand the use of the area.

St. Johns' Marsh, which lies at the south end of Cold Spring Harbor, is used for environmental education and research activities of county-level significance. In addition, Oyster Bay Harbor functions as a living laboratory as part of the educational initiatives associated with the development of the Oyster Bay Waterfront Center. In 2004, the Center had approximately 5500 visitors, including 3,000 people who sailed on the Center's oyster vessel.

IMPACT ASSESSMENT:

Any activity that would substantially degrade the water quality in Oyster Bay Harbor/Cold Spring Harbor would adversely affect the biological productivity of this area. All species of fish and wildlife would be affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, non-point source contamination, excessive turbidity, and waste disposal (including vessel wastes). Efforts should be made to improve water quality in the bay, including the reduction or elimination of discharges from vessels and upland sources. Vegetated upland buffer zones should be protected or established to reduce non-point source pollution and sedimentation from upland sources.

Alteration of tidal patterns in Oyster Bay/Coldspring Harbor could have major impacts on the fish and wildlife communities present. No new navigation channels should be excavated within the area. Dredging to maintain existing boat channels should be scheduled between September 15 and December 15 to minimize adverse effects on aquatic organisms, and to allow for the upland placement of dredged material when wildlife populations are least sensitive to disturbance. Dredged material placement in this area would be detrimental, but such activities may be designed to maintain or improve the habitat for certain species of wildlife. Existing and proposed dredging operations in this area should incorporate the use of best management practices to avoid and reduce adverse effects. Any expansion of fishing, small boat use, and educational activities should be compatible with the preservation of natural habitats.

Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development, may result in the loss of productive areas which support the fish and wildlife resources of Oyster Bay Harbor/Cold Spring Harbor. Elimination of salt marsh and intertidal areas, through loss of tidal connection, ditching, excavation, or filling, would result in a direct loss of valuable habitat area. Alternative strategies for the protection of shoreline property should be examined, including innovative, vegetation-based approaches. Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values.

Unrestricted use of motorized vessels including personal watercraft in the protected, shallow waters of bays, harbors, and tidal creeks of this area could have adverse effects on aquatic vegetation and fish and wildlife populations. Use of motorized vessels should be controlled (*e.g.*, no-wake zones, speed zones, zones of exclusion) in and adjacent to shallow waters and vegetated wetlands.

Thermal discharges, depending on time of year, may have variable effects on use of the area by marine species and wintering waterfowl. Installation and operation of water intakes could have a significant impact on juvenile (and, in some cases, adult) fish concentrations, through impingement or entrainment.

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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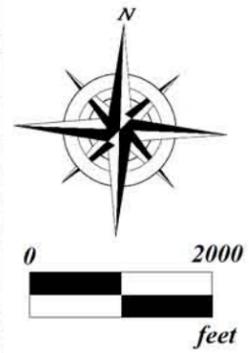
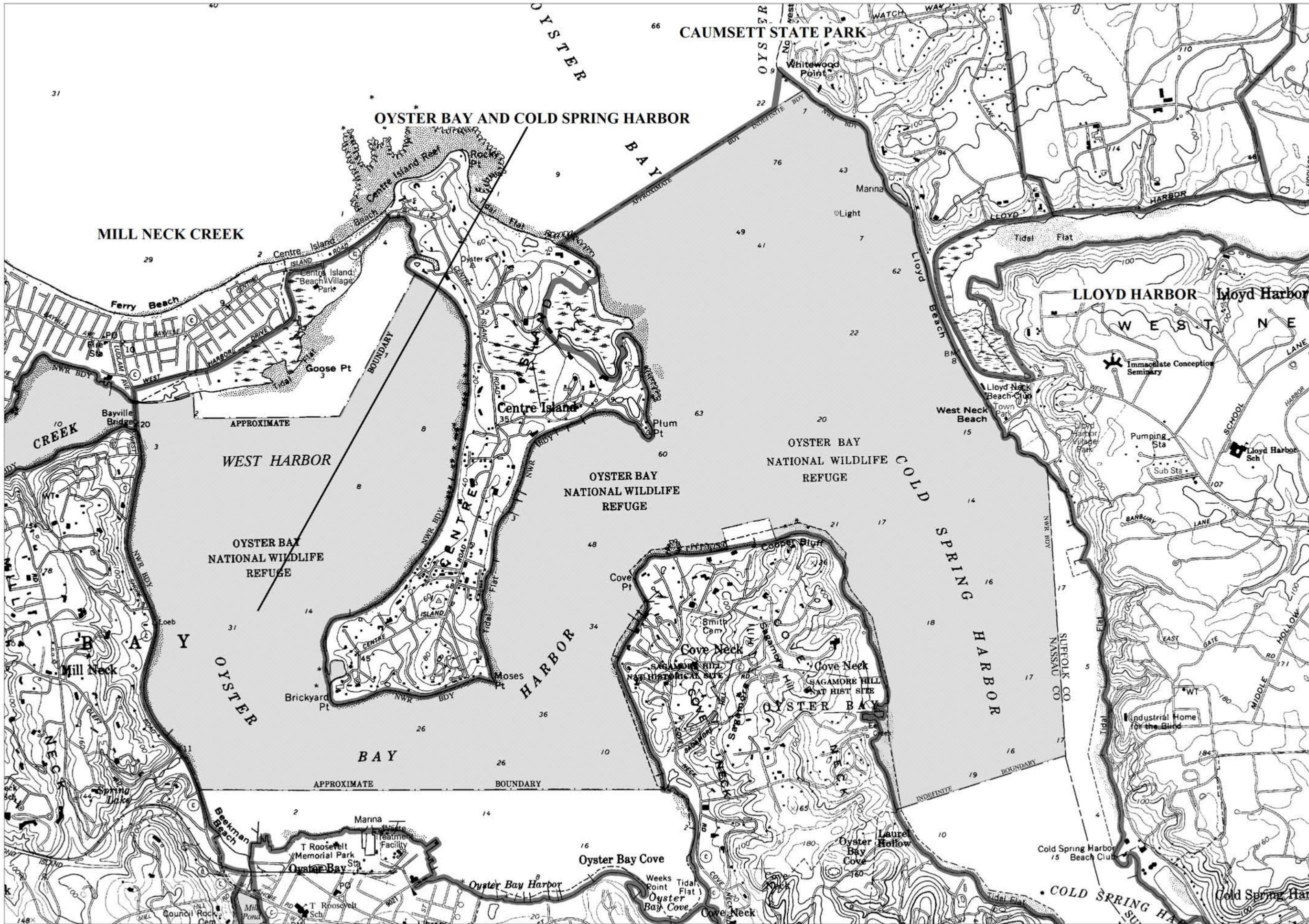
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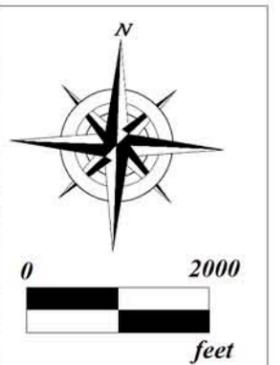
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- Significant Coastal Fish and Wildlife Habitats**
- Oyster Bay and Cold Spring Harbor (In part)
 - Caumsett State Park (In part)
 - Lloyd Harbor (In part)
 - Mill Neck Creek (In part)
- Oyster Bay National Wildlife Refuge**
- Federally Excluded Lands**



Oyster Bay National Wildlife Refuge
 Federally Excluded Lands

Significant Coastal Fish and Wildlife Habitats
 Oyster Bay and Cold Spring Harbor (In part)
 Part 2 of 2
 Mill Neck Creek (In Part)

from 1967
 sea level -200
 Mill River
 Country Club
 Vernon
 Mid Sch