
COASTAL FISH & WILDLIFE HABITAT ASSESSMENT FORM

Name of Area: **Conscience Bay, Little Bay, and Setauket Harbor**
County: **Suffolk**
Town(s): **Brookhaven**
7½' Quadrangle(s): **Port Jefferson, 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: Relatively large area of undeveloped tidal flats and shallows; rare on the north shore of Long Island.

9

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: Documented least tern (T) and common tern (T) foraging site. Possible use by Atlantic ridley (E) sea turtles, but use is poorly documented. Additive division: $25 + (25/2) = 37.5$

37.5

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: Although somewhat limited by restrictions on shellfishing, commercial shellfishing is of county-level significance.

4

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: Waterfowl and shellfish concentrations unusual in northern Suffolk County.

4

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] = 54.5

Significance = HI x R = 65.4

NEW YORK STATE
SIGNIFICANT COASTAL FISH AND WILDLIFE HABITAT
NARRATIVE

CONSCIENCE BAY, LITTLE BAY AND SETAUKET HARBOR

LOCATION AND DESCRIPTION OF HABITAT:

Conscience Bay, Little Bay, and Setauket Harbor are located west of Port Jefferson Harbor, surrounding Strongs Neck, in the Town of Brookhaven, Suffolk County (7.5' Quadrangles: Saint James, NY; and Port Jefferson, NY). The fish and wildlife habitat consists of all lands in this area below mean high water. This is approximately a 560 acre area comprised primarily of intertidal mudflats, with limited amounts of salt marsh and shallow open water areas. Portions of Setauket Harbor are heavily used as mooring areas for recreational boats, and much of the shoreline there has been disturbed by residential development. A considerable amount of unfragmented salt marsh lines the shores of Conscience Bay and Little Bay.

The New York Natural Heritage Program has documented the presence of northern gamma grass (*Trypsacum dactyloides*) near the southwest corner of Conscience Bay, threatened in New York state.

FISH AND WILDLIFE VALUES:

Conscience Bay, Little Bay, and Setauket Harbor together comprise one of the largest areas of intertidal mudflats on the north shore of Long Island. Areas such as these play a valuable role as habitat for commercially and recreationally important invertebrates and fishes, and serve as foraging sites for a variety of migratory birds. Conscience Bay, Little Bay, and Setauket Harbor are valuable foraging areas for a variety of gulls, wading birds, and shorebirds during the spring and summer months including least terns (T) and common terns (T) which nest at Old Field Beach.

Populations of waterfowl documented in Port Jefferson Harbor, such as American black duck, mallard, scaup (greater and/or lesser), northern pintail, and American widgeon, also depend heavily on these areas as foraging sites, especially during the fall and winter months (October-March). Wintering waterfowl in the Conscience Bay Narrows include common goldeneye, bufflehead, red-breasted merganser and canvasback. Setauket Harbor is a wintering area for bufflehead, red-breasted merganser, mallard, American black duck and American wigeon.

Conscience Bay, Little Bay, and Setauket Harbor host a variety of shellfish species including hard clams, soft clams, American oysters, and ribbed mussels. Although some of this area is closed to shellfishing year round (or is conditionally certified for shellfishing) because of water quality problems, the area does support a commercial shellfishery for soft clams, hard clams, and oysters. Nearly 14% of the combined habitat area is certified for shellfishing. The Conscience Bay Narrows support a recreational finfishery for winter flounder in the spring and bluefish during the summer months. Juveniles of many other finfish species are also found in this area.

Conscience Bay, Little Bay and Setauket Harbor may also be critical for juvenile Atlantic ridley sea turtles (E) especially during the late summer and fall. More documentation is needed on the use of this area by sea turtle species, including the Atlantic ridley. These areas provide opportunities for

local residents to observe a variety of wildlife species throughout the year.

IMPACT ASSESSMENT:

Any activity that would substantially degrade the water quality in Conscience Bay, Little Bay, or Setauket Harbor would adversely affect the biological productivity of this area. Degradation of water quality in the bay, or to its water sources, from chemical contamination (including food chain effects), oil spills, excessive turbidity, and waste disposal (including vessel wastes) would adversely affect all fish and wildlife. Efforts should be made to improve water quality in the bays, including the control and reduction of discharges from vessels and upland sources. Vegetated upland buffer zones should be protected or established to further reduce water quality impairment from upland sources.

Alteration of tidal patterns in Conscience Bay, Little Bay, or Setauket Harbor, by modification of inlet configurations or other means, could have adverse effects on the biotic communities present. Dredging to maintain existing boat channels in the harbor and bays should be scheduled between September 15 and December 15 to minimize adverse effects on aquatic organisms, and to allow for dredged material placement when wildlife populations are least sensitive to disturbance. 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. Existing and proposed dredging operations in this area should incorporate the use of best management practices to avoid and reduce adverse effects.

Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development, would result in the loss of productive areas which support the fish and wildlife resources of Conscience Bay, Little Bay, or Setauket 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 can 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, such as sea turtles and overwintering waterfowl. Installation and operation of water intakes could have a significant impact on juvenile (and adult, in some cases) 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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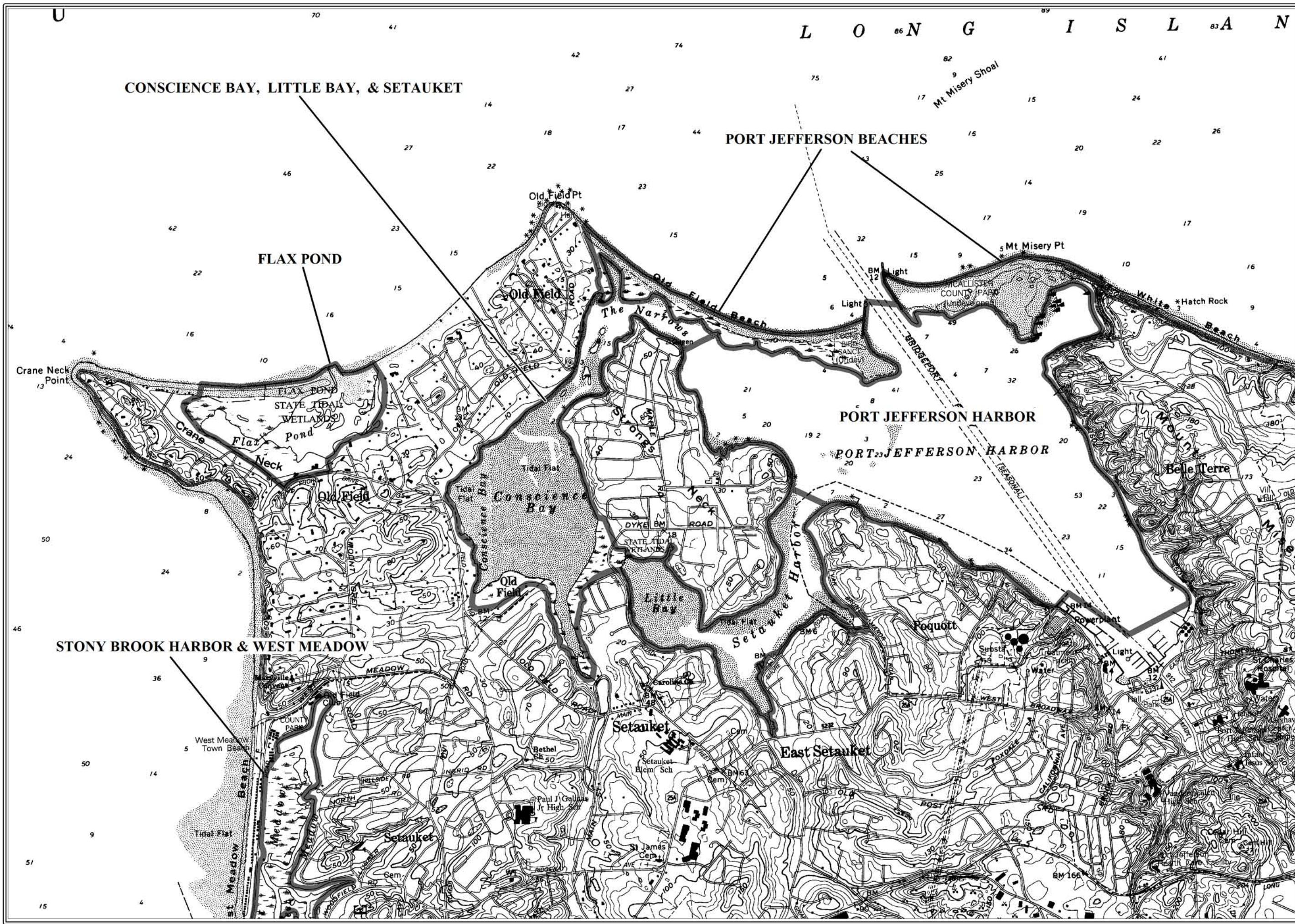
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L O N G I S L A N D

CONSCIENCE BAY, LITTLE BAY, & SETAUKET

PORT JEFFERSON BEACHES

FLAX POND

STONY BROOK HARBOR & WEST MEADOW



Significant Coastal Fish and Wildlife Habitats

- Flax Pond
- Conscience Bay, Little Bay & Setauket
- Port Jefferson Harbor
- Port Jefferson Beaches
- Stony Brook Harbor & West Meadow (In Part)

