

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Little Neck Bay**

Designated: **September 15, 1992**

County(ies): **Queens; Nassau**

Town(s): **New York City (Queens); North Hempstead**

7½' Quadrangle(s): **Flushing, NY**

Score **Criterion**

16 Ecosystem Rarity (ER)
One of several major bays on the north shore of Long Island; rare in ecological subregion.

0 Species Vulnerability (SV)
No endangered, threatened or special concern species are known to reside in the area.

20.5 Human Use (HU)
Recreational fishing pressure is of statewide significance; commercial clam harvest for transplanting is of regional significance. Additive division: $16 + 9/2 = 20.5$.

13.5 Population Level (PL)
One of about five major waterfowl wintering areas on the north shore of Long Island, of regional significance. Also, one of the most significant striped bass nursery areas in the region. Additive Division: $9 + 9/2 = 13.5$.

1.2 Replaceability (R)
Irreplaceable.

SIGNIFICANCE VALUE = [(ER + SV + HU + PL) X R]

= **60**

DESIGNATED HABITAT: LITTLE NECK BAY

HABITAT DESCRIPTION:

Little Neck Bay is the westernmost bay on the north shore of Long Island, located between Fort Totten Military Reservation and Great Neck. This approximate 1400 acre area is located in the Borough of Queens, Queens County, and in the Town of North Hempstead, Nassau County (7.5' Quadrangle: Flushing, N.Y.). The fish and wildlife habitat consists of open water area in the bay, extending out to Willets Point on the west side, and to the Village of Kings Point on the east. Most of Little Neck Bay is less than 8 feet deep at mean low water, and has a tidal fluctuation of approximately 7 feet. The outer limit of the area is at the approximate 18-foot depth contour (below mean low water). The bay is bordered by dense residential development, Fort Totten, the Cross Island Parkway, and extensive recreational boating facilities.

FISH AND WILDLIFE VALUES:

Little Neck Bay is one of several major embayments on Long Island's north shore. This relatively shallow coastal bay is important to fish and wildlife throughout the year. Little Neck Bay is one of about 5 major waterfowl wintering areas (November - March) on the north shore. Mid-winter aerial surveys of waterfowl abundance for the ten year period 1978-1987 indicate average concentrations of over 1,200 birds in the bay each year (2,564 in peak year), including approximately 900 scaup (2,250 in peak year), 160 canvasbacks (875 in peak year), and 140 American black ducks (345 in peak year), along with lesser numbers of mallard, Canada goose, common goldeneye, and red-breasted merganser. Waterfowl use of the bay during winter is influenced in part by the extent of ice cover each year. Concentrations of waterfowl also occur in Little Neck Bay during spring and fall migrations (March - April and October - November, respectively).

In addition to waterfowl use, Little Neck Bay is a productive area for marine finfish and shellfish. The bay serves as an important nursery and feeding area for striped bass. Other fish species found here at various times of the year for nursery and feeding use (April - November, generally) include scup, bluefish, Atlantic silversides, menhaden, winter flounder, and blackfish. As a result of the abundant fisheries resources in the bay, and its proximity to the metropolitan New York area, Little Neck Bay receives very heavy recreational fishing pressure, of statewide significance. Little Neck Bay is also valuable as a hard clam producing area. Although the bay waters are not certified for commercial shellfishing, significant numbers of young clams are removed for transplanting into approved waters.

IMPACT ASSESSMENT:

A **habitat impairment test** must be met for 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** that must be met 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 below to assist in applying the habitat impairment test to a proposed activity.

Any activity that would substantially degrade water quality in Little Neck Bay would affect the biological productivity of this area. Many species of fish and wildlife are adversely affected by water pollution, such as chemical contamination (including food chain effects), oil spills, excessive turbidity or sedimentation, and waste disposal. Efforts should be made to improve water quality in the bay, which is primarily dependent upon controlling discharges from combined sewer overflows, municipal point sources, and parkway runoff. Excavation of new navigation channels should be minimized, and maintenance dredging activities should be scheduled in late fall or winter to minimize potential impacts on most aquatic organisms. Dredge spoils should be deposited in upland containment areas. Thermal discharges, depending on time of year, may have variable effects on use of the area by marine species and wintering waterfowl: beneficial effects may result during winter months, while effects would generally be adverse during summer months. Installation and operation of water intakes would have a significant impact on juvenile (and adult, in some cases) fish concentrations, through impingement or entrainment. Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development (i.e., natural beach or salt marsh) may result in the loss of productive areas which support the fish and wildlife resources of Little Neck Bay.

