COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Pelham Bay Park Wetlands**

Designated: **September 15, 1992**

County: **Bronx**

Town(s): **New York City (Bronx)**

7½' Quadrangle(s): **Mt. Vernon, NY; Flushing, NY**

Score	Criterion
25	Ecosystem Rarity (ER) Relatively large area of undisturbed tidal wetlands and rocky intertidal coastline; unusual in Manhattan Hills ecological region.
16	Species Vulnerability (SV) Barn Owl (SC); other listed species are known to occur in the area, but the extent of use has not been adequately documented.
9	Human Use (HU) The area attracts visitors from throughout northern New York City for both recreational and educational nature study. Geometric mean: $(4x9)^{½}$. Additive division: 6 + 6/2 = 9.
6	Population Level (PL) Concentrations of various fish and wildlife species associated with tidal wetlands are unusual on the north shore of western Long Island Sound. Geometric mean: $(4x9)^{½}$.
1.2	Replaceability (R) Irreplaceable.

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

= **67**

DESIGNATED HABITAT: PELHAM BAY PARK WETLANDS

HABITAT DESCRIPTION:

Pelham Bay Park is located on Long Island Sound, in the northeastern corner of the Borough of the Bronx, Bronx County (7.5' Quadrangles: Flushing, NY; and Mount Vernon, NY.). Pelham Bay Park is the largest municipal park in New York City, and contains extensive natural areas, including nearly 500 acres of tidal marshes. The fish and wildlife habitat encompasses two major coastal wetland areas within the park: an approximate 475 acre area of high marsh, intertidal marsh, and salt flats associated with the Hutchinson River and upper Eastchester Bay; and the Lagoon, an approximate 275 acre narrow bay and wetland complex located around Hunter Island. The Hutchinson River wetlands are relatively undisturbed except for several major highway and railroad corridors through the area. In contrast, the area across the Hutchinson River from Pelham Bay Park has been intensively developed for industrial, commercial, and residential uses. The Lagoon also remains in an essentially natural condition, characterized by a rocky intertidal shore, with small areas of marsh vegetation and sand beach. This mile-long embayment opens into Long Island Sound at the Bronx County-Westchester County line, where there has been considerable development of shoreline areas. Also included in the fish and wildlife habitat is the marine rocky intertidal zone which extends south from Hog Island to the shores off Twin Island. The area is managed by the City of New York Department of Parks and Recreation.

FISH AND WILDLIFE VALUES:

Pelham Bay Park Wetlands are the only relatively undisturbed tidal wetland areas remaining in the Bronx, and one of the largest natural estuarine habitats on the north shore of western Long Island Sound. These wetlands and rocky intertidal areas are inhabited by a diversity and abundance of fish and wildlife species that are unusual in the Manhattan Hills ecological region.

The assemblage of fish and wildlife species that occurs in Pelham Bay Park Wetlands is characteristic of natural estuarine habitats. Probable or confirmed breeding bird species in the area include green heron, Canada goose, American black duck, mallard, clapper rail, belted kingfisher, fish crow, marsh wren, red-winged blackbird, sharp-tailed sparrow, and swamp sparrow. Barn owls (SC) have occasionally nested on the New England Thruway Bridge, however, this use is not well documented. The area is also a feeding ground for other heron species which nest on nearby Huckleberry Island and North and South Brother Islands. Significant numbers of herons, waterfowl, shorebirds, raptors, and passerine birds use Pelham Bay Park Wetlands as a stopover during spring and fall migrations (March - May and mid-August - November), and some remain through winter. The area is of particular significance for Osprey (T) migration, with as many as 1600 birds documented during fall migration by the Pelham Bay Hawkwatch program. Osprey often fish and roost near the lagoon during their stopover. Birds frequently sighted in these areas during winter include waterfowl such as loons, grebes, cormorants, brant, Canada, and snow geese, American black duck, American wigeon, canvasback, common goldeneye, bufflehead, mergansers, and scaup; and raptors, such as northern harrier (T), and short-eared owl (SC). However, the extent to which these birds utilize the wetland areas during non-breeding seasons is not well documented. Diamondback terrapin (SC) have been regularly observed during spring and summer in the southern lagoon. These turtles are suspected to be breeding in this area, however, this has yet to be documented. Other wildlife species occurring in Pelham Bay Park Wetlands include raccoon, muskrat, meadow vole, diamondback terrapin (SC; occasional use), and brown snake.

Areas such as Pelham Bay Park Wetlands play an important role as habitats for commercially and recreationally important invertebrates and fishes, and function as sites for the conversion of plant production into animal biomass. Intertidal and subtidal areas along the Hutchinson River and in the Lagoon serve as productive nursery or feeding areas (from April-November, generally) for a variety of marine finfish and shellfish, including striped bass, bluefish, Atlantic silversides, menhaden, winter flounder, mummichog, banded killifish, hard clam, ribbed mussel, common oyster, fiddler crab, and horseshoe crab.

As one of the largest publicly-owned natural areas in New York City, Pelham Bay Park provides valuable opportunities for fish and wildlife related activities. The abundance and diversity of species found in the park's major wetland habitats attract visitors year-round from throughout northern New York City for birdwatching, photography, and informal nature study. Access to portions of the Pelham Bay Park Wetlands is limited by the location of major highways. Access within certain portions of the Park is also limited to protect ecologically sensitive areas from excessive human disturbance.

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:
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> - destroy the habitat; or,
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> - 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 appplying 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.

Despite its current status as a natural parkland, fish and wildlife habitats in Pelham Bay Park remain vulnerable to a number of potential impacts. Surrounding land use may be the most important factor affecting the fish and wildlife resources of this area. Any activity that would substantially degrade water quality or alter tidal fluctuations in Pelham Bay Park Wetlands would adversely affect fish and wildlife populations in the area. Discharges of sewage, stormwater runoff, or industrial effluents (containing heavy loads of sediments, nutrients, or chemical pollutants) into contiguous water bodies could seriously degrade wetland and aquatic habitats in Pelham Bay Park. Other forms of water pollution that would adversely affect the area include oil spills, waste disposal, and excessive turbidity caused by dredging or construction activities. Alteration of tidal patterns would have major impacts on fish, shellfish, and wildlife use of these areas. Dredging to maintain existing boat channels in the Hutchinson River should be scheduled in late fall and winter to minimize potential impacts on aquatic organisms. Elimination of salt marsh and intertidal areas within the park, through excavation or filling, would result in a direct loss of valuable habitat area. Construction and maintenance of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development (i.e., natural salt marsh or mudflats) may also have significant impacts on fish and wildlife resources of Pelham Bay Park. Upland areas bordering the wetlands should be maintained in natural plant communities to provide cover for wildlife, roosting sites, erosion control, and buffer zones from human disturbance. Compatible public uses of the area should be maintained or enhanced to utilize this valuable fish and wildlife resource.