APPENDIX C

COASTAL FISH & WILDLIFE HABITAT RATING FORMS AND SUMMARIES

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: Marshlands Conservancy

Designated: November 15, 1987

County: Westchester

Town(s): Rye

7½' Quadrangle(s): Mamaroneck, NY

Score	Criterion
9	Ecosystem Rarity (ER) The only sizeable, undisturbed, salt marsh and tidal flat community in Westchester County.
16	Species Vulnerability (SV) Diamondback terrapin (SC) breeding area.
6	Human Use (HU) Environmental education programs and opportunities for informal (recreational) nature study attract visitors from throughout Westchester County. Additive division: 4 + 4/2 = 6.
4	Population Level (PL) Concentrations of various fish and wildlife species associated with tidal wetlands (especially marsh-nesting birds) are unusual in Westchester County.
1.2	Replaceability (R) Irreplaceable.

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

= 42

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS PROGRAM
A PART OF THE NEW YORK COASTAL MANAGEMENT PROGRAM

BACKGROUND

New York State's Coastal Management Program (CMP) includes a total of 44 policies which are applicable to development and use proposals within or affecting the State's coastal area. Any activity that is subject to review under Federal or State laws, or under applicable local laws contained in an approved local waterfront revitalization program will be judged for its consistency with these policies.

Once a determination is made that the proposed action is subject to consistency review, a specific policy aimed at the protection of fish and wildlife resources of statewide significance applies. The specific policy statement is as follows: "Significant coastal fish and wildlife habitats will be protected, preserved, and, where practical, restored so as to maintain their viability as habitats." The New York State Department of Environmental Conservation (DEC) evaluates the significance of coastal fish and wildlife habitats, and following a recommendation from the DEC, the Department of State designates and maps specific areas. Although designated habitat areas are delineated on the coastal area map, the applicability of this policy does not depend on the specific location of the habitat, but on the determination that the proposed action is subject to consistency review.

Significant coastal fish and wildlife habitats are evaluated, designated and mapped under the authority of the Coastal Management Program's enabling legislation, the Waterfront Revitalization and Coastal Resources Act (Executive Law of New York, Article 42). These designations are subsequently incorporated in the Coastal Management Program under authority provided by the Federal Coastal Zone Management Act.

This narrative, along with its accompanying map, constitutes a record of the basis for this significant coastal fish and wildlife habitat's designation and provides specific information regarding the fish and wildlife resources that depend on this area. General information is also provided to assist in evaluating impacts of proposed activities on parameters which are essential to the habitat's values. This information is to be used in conjunction with the habitat impairment test found in the impact assessment section to determine whether the proposed activities are consistent with the significant coastal habitats policy.

DESIGNATED HABITAT: MARSHLANDS CONSERVANCY

HABITAT DESCRIPTION:

Marshlands Conservancy is located on Milton Harbor, in the City of Rye, Westchester County (7.5' Quadrangle: Mamaroneck, N.Y.).

The fish and wildlife habitat is an approximate 250 acre area, encompassing all of the County-owned Marshlands Conservancy property, as well as adjacent salt marsh to the east of the Marshlands property (south of the Rye golf course), tidal flats and shallows in Milton Harbor, tidal flats of Greenhaven Harbor southwest of the Marshlands property and salt marsh areas surrounding Hen Island. Marshlands Conservancy is a wildlife sanctuary and environmental education center operated by the Westchester County Department of Parks, Recreation, and Conservation. This area contains a diversity of fish and wildlife habitats, including salt marsh, tidal flats, mature woodlands, rocky islands, fields, and freshwater ponds. The land area bordering Marshlands Conservancy is predominantly residential, including the Rye golf course on the northeast side.

FISH AND WILDLIFE VALUES:

The Marshlands Conservancy and its adjacent wetlands comprise one of the largest contiguous areas of undeveloped coastal land in southern Westchester County including an undisturbed tidal marsh area in the Marshlands, which is the largest of its kind in the county (about 40 acres). The productive and relatively undisturbed wetlands and uplands of the Marshlands and adjacent areas in Milton Harbor, Greenhaven Harbor and Hen Island are all part of an integral system which supports a diversity and abundance of wildlife species that is unusual around western Long Island Sound.

A full complement of coastal wildlife species occur in and around the marshes at Marshlands Conservancy. Nesting bird species include green-backed heron, yellow-crowned night heron, Canada goose, mallard, black duck, clapper rail, fish crow, marsh wren, red-winged blackbird, sharp-tailed sparrow, seaside sparrow, Virginia rail and possibly least bittern (SC). Many species of waterfowl, shorebirds, herons, raptors, and passerine birds, use the area as a stopover during spring and fall migrations. At low tide, the exposed tidal flats of Milton Harbor and Greenhaven Harbor support large concentrations of wading birds and shorebirds. These flats also provide important feeding habitat for overwintering waterfowl especially after freeze-up in other areas.
Areas such as this also 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. The most visible evidence of this are the concentrations of hard clams, ribbed mussels, fiddler crabs, and horseshoe crabs found throughout the area. Diamondback terrapin (SC) breed on sandy spits adjoining Marshland's tidal wetlands.

In addition to the wetlands, Marshlands Conservancy has a diversity of other fish and wildlife habitats. Upland areas at Marshlands support many of the typical species in the region. The woodlands include both wet and well-drained areas with representative stands of oaks, hickory, beech, tulip poplars, and sweetgum. Dead and fallen trees provide cover for cavity dwellers, such as woodpeckers, owls, raccoon, striped skunk, flying squirrel, and bats. The meadow area is one

of the largest remaining open field habitats in southern Westchester County, and supports mice, eastern cottontail, red fox, various passerine birds, and hawks. As an environmental education center, Marshlands Conservancy is an important facility, attracting visitors from throughout Westchester County. Public use of the area centers on birdwatching during spring and fall, environmental education classes during the school year, and informal nature study and outdoor recreation throughout the year. A visitor's center and system of trails have been developed in the area.

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 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 nature preserve and environmental education center, Marshlands Conservancy remains vulnerable to a number of potential impacts. Surrounding land uses may be the most important factor affecting the fish and wildlife resources of this area. Encroachment of human disturbance, including industrial, commercial, or residential development, would have significant impacts on various species using the area. Discharges of polluted runoff (containing sediments or chemical pollutants, such as pesticides) from adjacent areas could degrade the wetland and aquatic habitats in Marshlands Conservancy.

Other forms of water pollution that would adversely affect the area include oil spills, waste disposal, and sewage discharges.
Alteration of tidal patterns in wetland areas would have major impacts on fish, shellfish, and wildlife use of these areas. Dredging to maintain existing boat channels in Milton Harbor should be scheduled in late fall and winter to minimize potential impacts on aquatic organisms. Elimination of salt marsh and intertidal areas, through excavation or filling, would result in a direct loss of valuable habitat area. Construction 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 have a significant impact on the fish and wildlife resources of Marshlands Conservancy. Opportunities for compatible public uses of the area should be maintained or enhanced to utilize this valuable fish and wildlife resource.

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COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Playland Lake and Manursing Island Flats**

Designated: **November 15, 1987**

County: **Westchester**

Town(s): **Rye**

7½' Quadrangle(s): **Mamaroneck, NY**

Score	Criterion
9	Ecosystem Rarity (ER) Relatively undeveloped, sheltered, tidal flats and shallows; unusual in Westchester County.
0	Species Vulnerability (SV) No endangered, threatened or special concern species reside in the area.
4	Human Use (HU) This is a popular birdwatching area for Westchester County residents.
0	Population Level (PL) Concentrations of wintering waterfowl occur throughout the Westchester County area of Long Island Sound, but population levels at Playland are not known to be significant.
1.2	Replaceability (R) Irreplaceable.

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

= 16

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS PROGRAM
A PART OF THE NEW YORK COASTAL MANAGEMENT PROGRAM

BACKGROUND

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This narrative, along with its accompanying map, constitutes a record of the basis for this significant coastal fish and wildlife habitat's designation and provides specific information regarding the fish and wildlife resources that depend on this area. General information is also provided to assist in evaluating impacts of proposed activities on parameters which are essential to the habitat's values. This information is to be used in conjunction with the habitat impairment test found in the impact assessment section to determine whether the proposed activities are consistent with the significant coastal habitats policy.

DESIGNATED HABITAT: PLAYLAND LAKE AND MANURSING ISLAND FLATS

HABITAT DESCRIPTION:

Playland Lake and Manursing Island Flats is located on Long Island Sound, in the City of Rye, Westchester County (7.5' Quadrangle: Mamaroneck, N.Y.). The fish and wildlife habitat includes all of Playland Lake, Kirby Pond, the southern portion of Port Chester Harbor, and various interconnecting channels, below mean high water. The habitat area also includes a segment of the Long Island Sound shoreline south of Playland Lake comprised of intertidal marsh, sand bars, shoal mudflats and adjacent beach.

This approximate 220 acre area is comprised primarily of tidal mudflats, shallow open water, and limited amounts of salt marsh. Playland Lake was formed by dredging tidal marshes and mudflats between the mainland and Manursing Island; it is located within Playland Park (owned by Westchester County), and has been set aside as a conservation area. A portion of the Park land south of Playland Lake has been set aside as the Edith G. Read Nature Preserve and Wildlife Sanctuary. Kirby Pond and the tidal flats west of North Manursing Island are privately owned, and remain in a relatively natural condition. The lands bordering Playland Lake and Manursing Island Flats include the heavily used Playland amusement park of the south, and predominantly low density residential areas.

FISH AND WILDLIFE VALUES:

Playland Lake and Manursing Island Flats comprise one of the largest areas of sheltered, undeveloped, tidal flats and shallows on the south shore of Westchester County. Although natural communities in Playland Lake have been altered by dredging, on-going habitat disturbance is minimal. Areas such as Manursing Island Flats and the shoreline south of Playland Lake are important habitats for commercially and recreationally important invertebrates and fishes, and serve as feeding sites for a variety of migratory birds.

Concentrations of hard clams, soft clams, ribbed mussels, and fiddler crabs are found throughout the area. However, Playland Lake and Manursing Island Flats is closed to shellfishing because of water pollution problems (high coliform levels).

Populations of waterfowl occurring in western Long Island Sound, such as black duck, mallard, greater or lesser scaup, bufflehead, and common goldeneye, utilize these areas as feeding and refuge sites, especially during fall and early winter months (October-freeze up). Playland Lake and Manursing Island Flats are also valuable as nesting and feeding areas during the spring and summer months for a variety of shorebirds, gulls, terns, and herons. Breeding species in the area include black duck, mallard, American bittern, green-backed heron, marsh wren, and red-winged blackbird.

Diamondback terrapin (SC) have been observed in the channel between Playland Lake and the Manursing Island Flats and nested in 1987 on the sandy and grassy southern shoreline of Playland Lake in the Read Nature Preserve.

Playland Park including the Read Nature Preserve, provides access year round for informal nature study, environmental education and birdwatching for Westchester county residents.

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.

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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;
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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 the water quality in Playland Lake and Manursing Island Flats would result in significant impairment of the habitat. All species of fish and wildlife may be affected by water pollution, such as chemical contamination (including food chain effects), oil spills, excessive turbidity or sedimentation, waste disposal, and sewage discharges.

Tidal mudflats are sensitive to such impacts because their biological activity is concentrated at the soil surface, where pollutants would tend to accumulate. Efforts should be made to improve water quality in the area, by reducing waste discharges from recreational boats and upland sources. Alteration of tidal patterns in Playland Lake and Manursing Island Flats could have major impacts on fish, shellfish, and wildlife use of these areas.

Dredging to maintain existing boat channels should be scheduled in late fall and winter to minimize potential impacts on aquatic organisms; no new navigation channels should be constructed in the area. Elimination of salt marsh and intertidal areas, through excavation or filling, would result in a direct loss of valuable habitat area, although creation of small open water areas within the tidal flats may increase suitability of the habitat for certain fish or wildlife species.

Efforts to restore natural tidal wetland communities in Playland Lake could enhance the productivity of this area. Construction 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 have a significant impact on the fish and wildlife resources of Playland Lake and Manursing Island Flats.

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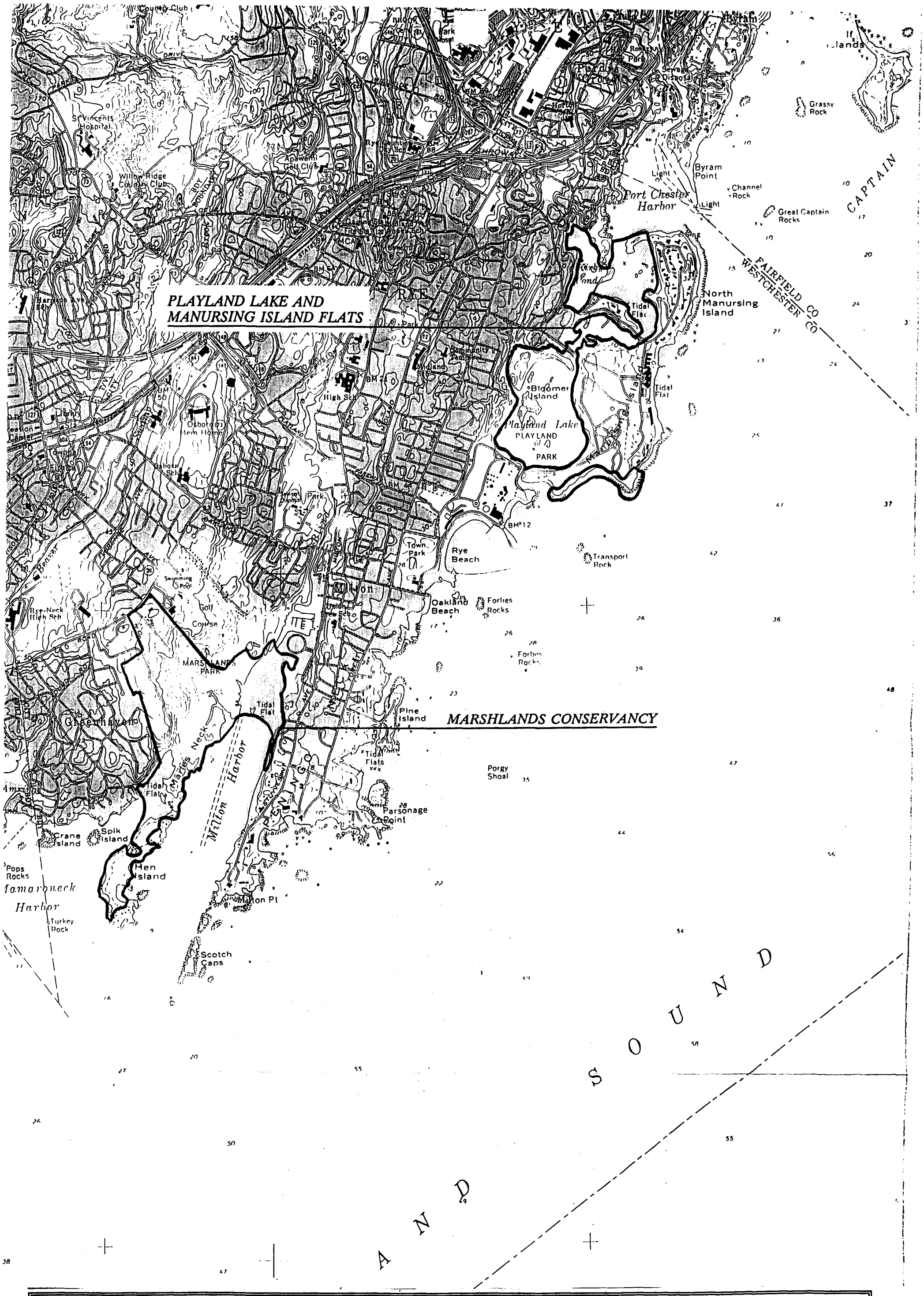

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS

Marshlands Conservancy / Playland Lake and Manursing Island Flats

Miles
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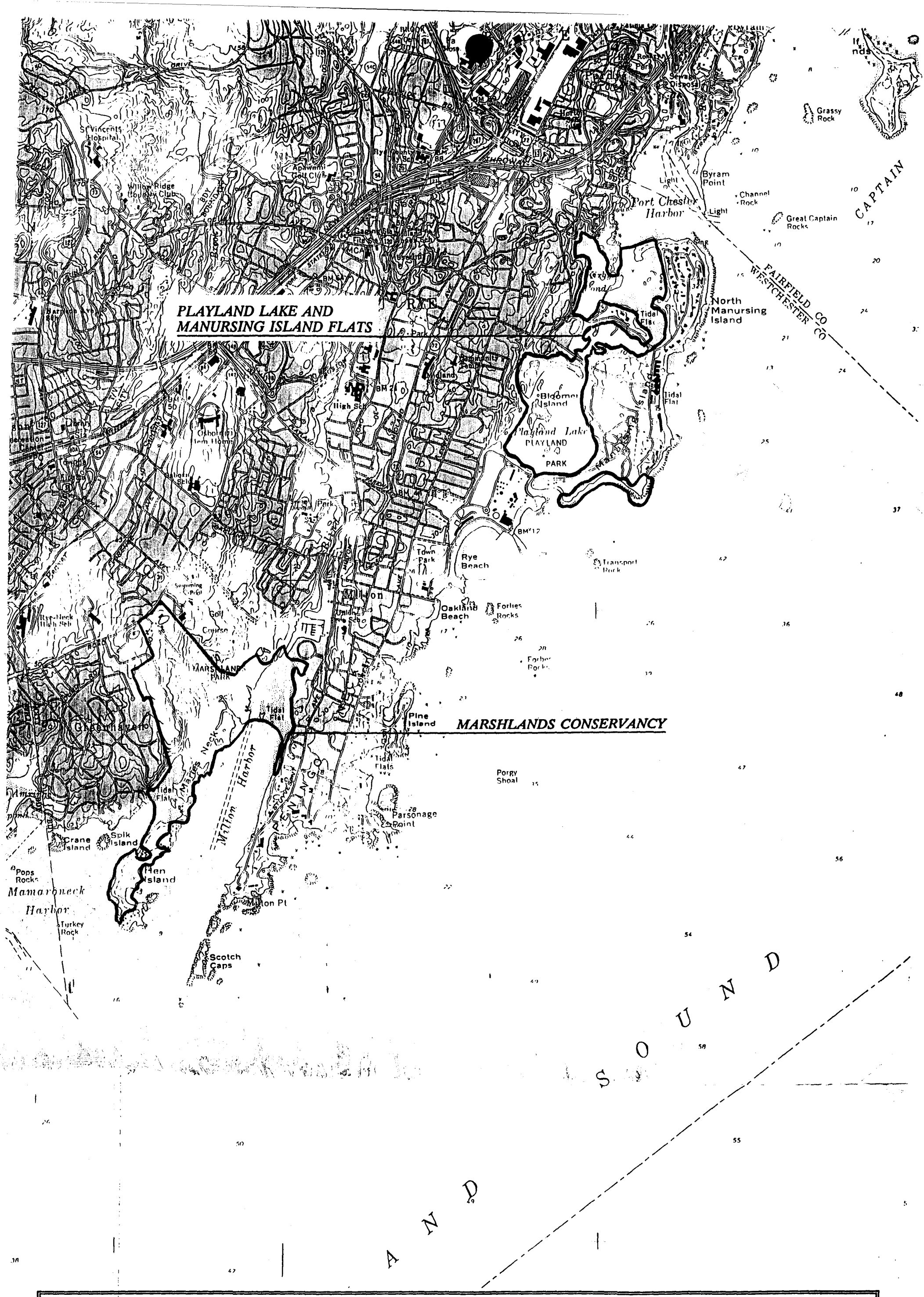
New York State Department of State Division of Coastal Resources and Waterfront Revitalization

Prepared by T. Hart and G. Capobianco September 1990



SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS

Marshlands Conservancy / Playland Lake and Manursing Island Flats

Miles
0 ½ 1

N

New York State Department of State Division of Coastal Resources and Waterfront Revitalization

Prepared by T. Hart and G. Capobianco September 1990