Appendix A-4

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area:	**Hudson River Mile 44-56**
Designated:	**November 15, 1987**
County(ies):	**Orange; Rockland; Putnam; Westchester**
Town(s):	**Cornwall, Highlands; Stony Point; Philipstown; Cortlandt**
7½' Quadrangle(s):	**West Point, NY; Peekskill, NY**

Score	Criterion
25	Ecosystem Rarity (ER) An extensive area of deep, turbulent river channel with strong currents and rocky substrates; unusual in the Hudson River estuary.
36	Species Vulnerability (SV) Bald eagle (E) wintering area. Possibly an important nursery area for shortnose sturgeon (E).
38	Human Use (HU) Striped bass production in this area supports commercial and recreational fisheries throughout the northeastern U.S.; additive division: 25 + 25/2 = 38.
25	Population Level (PL) The major spawning area for Hudson River striped bass; population levels are unusual in the northeastern United States.
1.2	Replaceability (R) Irreplaceable.

SIGNIFICANCE VALUE = [(ER + SV + HU + PL) X R] = **148**

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 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 this policy.

DESIGNATED HABITAT: HUDSON RIVER MILE 44-56

HABITAT DESCRIPTION:

Hudson River Mile 44-56 extends roughly from Cornwall Bay to Peekskill Bay, in the Towns of Cornwall and Highlands, Orange County; Stony Point, Rockland County; Philipstown, Putnam County; and Cortlandt, Westchester County (7.5' Quadrangles: West Point, N.Y.; and Peekskill, N.Y.). The fish and wildlife habitat encompasses all of the main river channel below mean low water over an approximate twelve mile reach. This area is a very narrow and deep (up to 200 feet deep) section of the Hudson River, with strong currents and a rocky bottom substrate.

During spring and early summer, surface salinity in the area is almost always less than one part per thousand, i.e., essentially freshwater. During late summer and fall, however, salt intrusion often extends upstream beyond River Mile 56. The land area bordering Hudson River Mile 44-56 is predominantly steep, rocky, hillsides, with a variety of land uses, including undeveloped forestland (e.g., Storm King, Bear Mountain, and Hudson Highlands State Parks), small urban centers, and the West Point Military Reservation. In addition, Penn Central railroad tracks closely follow the shoreline on both sides of River Mile 44-56. The habitat also includes most of Iona Island, which is part of the Hudson River Estuarine Sanctuary (an area dedicated to environmental research and education).

FISH AND WILDLIFE VALUES:

Hudson River Mile 44-56 is one of several relatively long reaches of the river channel that are very deep and narrow, with strong currents and rocky substrates. It is the most extensive area of this habitat type in the Hudson River, and contains the majority of deepwater (and greatest maximum depth) in the entire Hudson estuary.

River flows in this segment are considerably larger than in upstream narrow areas, because of the additional input of three major tributaries (Wappinger, Fishkill, and Moodna Creeks). This area is also significant because it is the southernmost extent of essentially freshwater in the Hudson River estuary during fish spawning periods.

The combination of rocky substrates, swift currents, and freshwater (during spring runoff), over this large area provides highly favorable conditions for reproduction by anadromous fishes, especially striped bass and white perch. Deep turbulent areas appear to be primary spawning habitat for striped bass, and according to both historical and recent data, River Mile 44-56 is the most important spawning area for this species in the Hudson River. In recognition of this, much of the area has restrictions on operation of gillnets to protect the spawning population. Generally, these two species enter the area to spawn in May and June; the adults leave the area shortly after spawning, and within

several weeks, the eggs have hatched, and larval fish begin moving downstream to nursery areas in the brackish portion of the Hudson River. Although the commercial fishery for striped bass in the Hudson River was closed in 1985 due to high contaminant (polychlorinated biphenyls) levels, River Mile 44-56 contributes significantly to commercial and recreational fisheries throughout this migratory range.

Striped bass stock discrimination studies conducted in coastal New York and southern New England indicate that approximately 50 percent of striped bass harvested in these fisheries were of Hudson River origin, the remainder primarily originating from the Chesapeake Bay system. With the documented poor Chesapeake production from 1983-1985, it is anticipated that the relative contribution of the Hudson stock to the coastal migratory striped bass population will continue to rise above 50 percent. Deepwater areas such as Hudson River Mile 44-56 are also used by concentrations of species which spawn elsewhere in the Hudson River estuary. Deep areas are used as migrational routes by Atlantic sturgeon and shortnose sturgeon (E), and may be important nursery areas for these species. As the salt front moves up through this area, a variety of marine species, such as bluefish, anchovy, silversides, hogchoker, and blue claw crab may also enter the area. The concentrations of anadromous and marine fishes occurring in Hudson River Mile 44-56 attract significant recreational fishing pressure within the area, attracting visitors from throughout the lower Hudson Valley.

Associated with the fisheries resources in Hudson River Mile 44-56 is a significant concentration of wintering bald eagles (E). Apparently, upwellings along the river shoreline bring fish concentrations near the surface, and because this area rarely freezes, it provides a dependable prey base for these birds. Bald eagles have been reported in this area since at least 1981, with as many as 12 occurring here at one time. Winter residence in the area generally extends from December through March. These birds feed throughout River Mile 44-56, and Iona Island is a primary roosting area; the latter has been designated as an eagle sanctuary by the Palisades Interstate Park Commission. Other roosting areas include undisturbed woodlands along both sides of the river, especially near sheltered coves. Fish species commonly taken by the wintering eagles include goldfish, brown bullhead, alewife, white perch, and sunfish.

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.

Any activity that would substantially degrade water quality, reduce flows, alter tidal fluctuations, or increase water temperatures in Hudson River Mile 44-56 would result in significant impairment of the habitat. Of primary concern in this deep estuarine area would be diversion of freshwater flows out of the Hudson, contamination by toxic chemicals, major structural alterations to the underwater habitat (e.g., dredging, filling, or construction of jetties), and thermal discharges. All species of fish and wildlife may be adversely affected by water pollution, such as chemical contamination (including food chain effects), oil spills, excessive turbidity or sedimention, and waste disposal.

Transient habitat disturbances, such as dredging or in-river construction activities, could have significant impacts on striped bass populations during spawning and incubation periods (May-July, primarily). Installation and operation of water intakes could also have significant impacts on fish populations in the area, through impingement of juveniles and adults, or entrainment of eggs and larval stages. The potential effects of human disturbance (especially pedestrians) on wintering bald eagles are not well documented, but should be minimized around known roosting and feeding areas.

It is essential that activities in the vicinity of Iona Island also be evaluated with respect to its use for environmental research and education, and the need to maintain natural or controlled experimental conditions.

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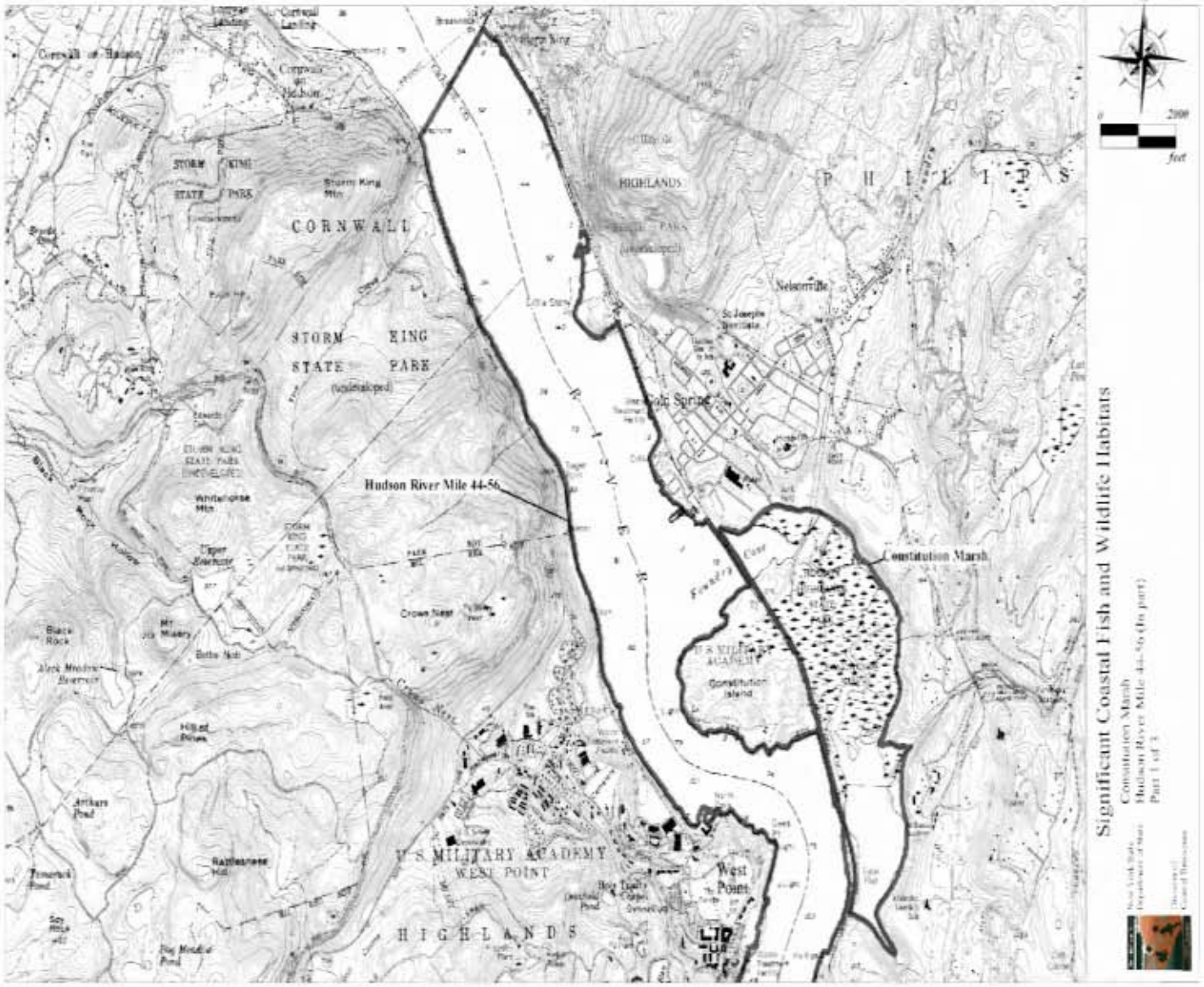
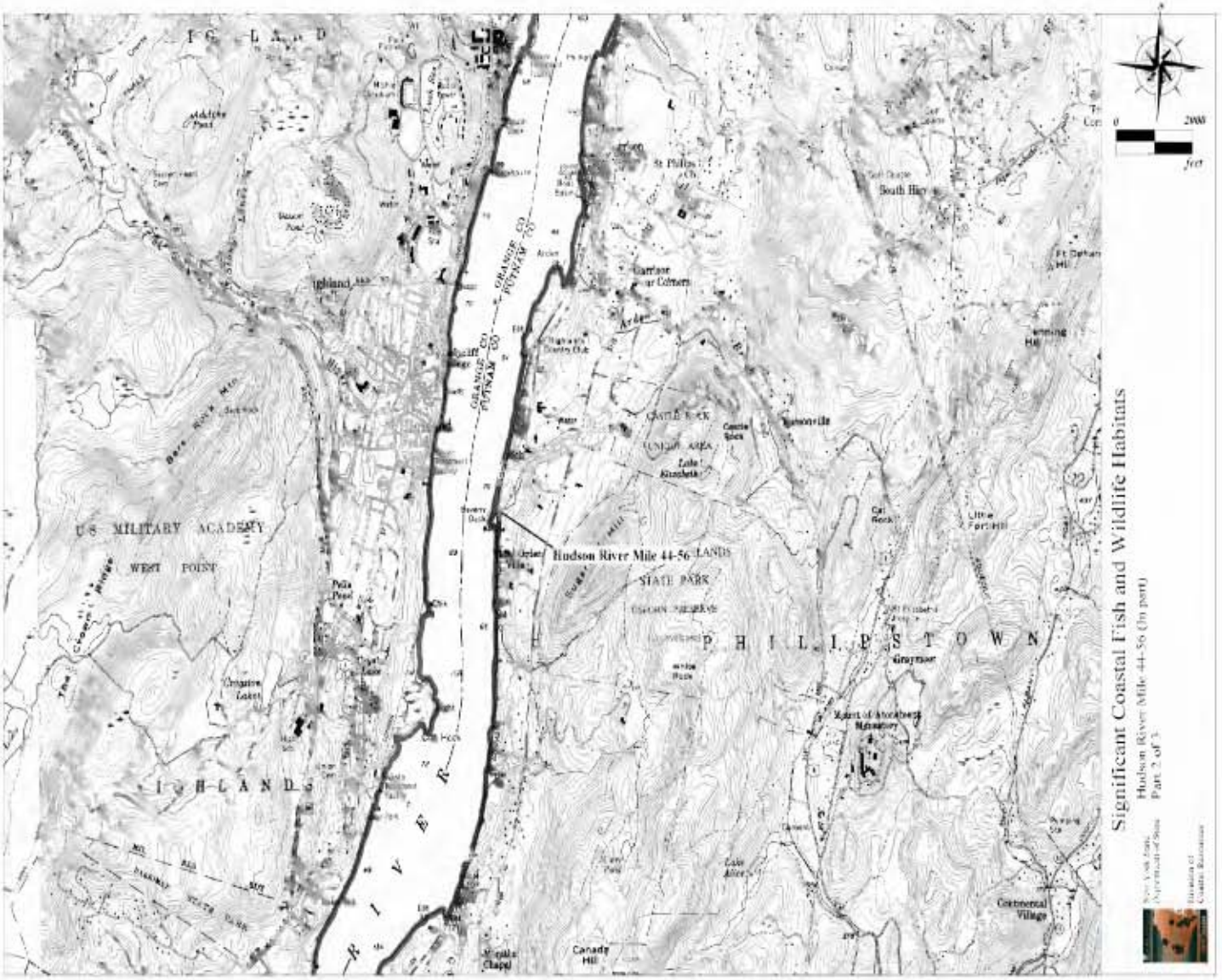
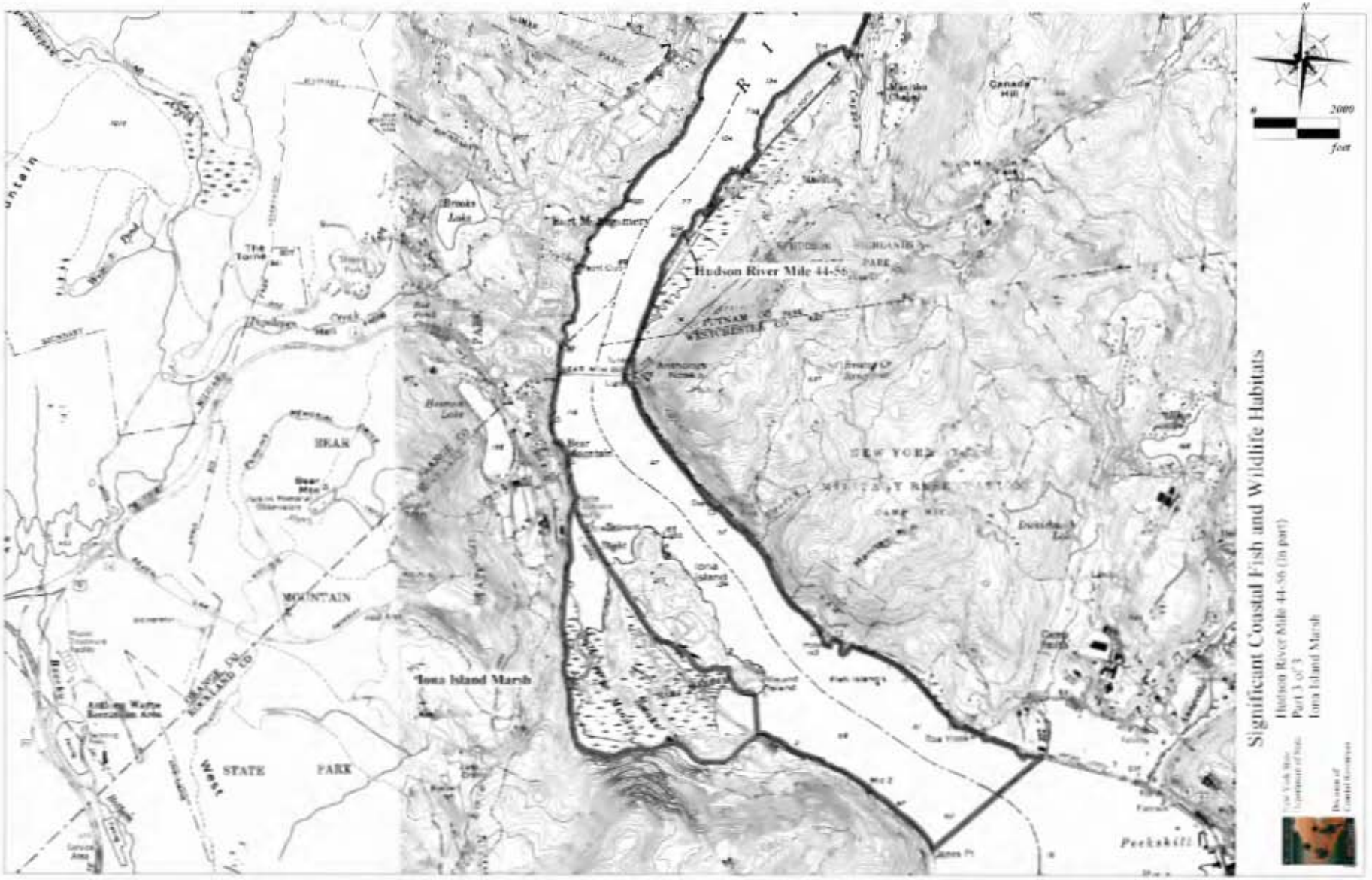

CORNWALL
STORM KING STATE PARK
(undeveloped)
HIGHLANDS
P H I L I P S
Nelsonville
Cold Spring
Hudson River Mile 44-56
Constitution Marsh
U.S. MILITARY ACADEMY
WEST POINT
West Point
HIGHLANDS
Significant Coastal Fish and Wildlife Habitats
Constitution Marsh
Hudson River Mile 44-56 (in part)
Part 1 of 2
0
2000
feet


U.S. MILITARY ACADEMY
WEST POINT
Hudson River Mile 44-56 LANDS
STATE PARK
PHILIPSTOWN
HIGHLANDS
RIVER
0
2000
feet
Significant Coastal Fish and Wildlife Habitats
Hudson River Mile 44-56 (In part)
Part 2 of 3


Significant Coastal Fish and Wildlife Habitats
Hudson River Mile 44-56 (in part)
Part 3 of 3
Iona Island Marsh
Hudson River Mile 44-56
Iona Island Marsh
BEAR
MOUNTAIN
STATE
PARK
Brooks Lake
Canada Hill
Peekskill
N
0
2000
feet

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area:	**Haverstraw Bay**
Designated:	**November 15, 1987**
County(ies):	**Rockland; Westchester**
Town(s):	**Clarkstown, Haverstraw, Stony Point; Cortlandt**
7½' Quadrangle(s):	**Haverstraw, NY; NOAA Chart No. 12343**

Score	**Criterion**
40	Ecosystem Rarity (ER) The most extensive area of shallow estuarine habitat in the lower Hudson River (and in New York State), but rarity reduced by human disturbances; geometric mean: $(25 \times 64)^{½} = 40$.
36	Species Vulnerability (SV) Shortnose sturgeon (E) regularly occur in the area.
38	Human Use (HU) The area contributes to recreational and commercial fisheries throughout the northeastern U.S.; additive division: 25 + 25/2 = 38

Population Level (PL)

25 A major spawning, nursery, and wintering area for various estuarine fish species; population levels unusual in the northeastern U.S.

Replaceability (R)

1.2 Irreplaceable.

SIGNIFICANCE VALUE = [(ER + SV + HU + PL) X R] = **166**

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS PROGRAM

A PART OF THE NEW YORK COASTAL MANAGEMENT PROGRAM

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DESIGNATED HABITAT: HAVERSTRAW BAY

HABITAT DESCRIPTION:

Haverstraw Bay extends approximately six miles on the Hudson River, from Stony Point to Croton Point, in the Towns of Stony Point, Haverstraw, and Clarkstown, in Rockland County, and the Town of Cortlandt, in Westchester County (7.5' Quadrangle: Haverstraw, N.Y.; NOAA Chart No. 12343).

The fish and wildlife habitat encompasses the entire river over this approximate six mile reach, which is the widest section of the Hudson estuary. Haverstraw Bay has extensive shallow areas (less than 15 feet deep at mean low water) which deepen to a navigation channel (which is dredged to maintain a depth of about 35 feet) in the western half of the area. During much of the year, this area is the place where freshwater from the upper river mixes with salt water from the Atlantic, producing a predominantly brackish water habitats, with salinities varying from 0-10 ppt. The land area surrounding Haverstraw Bay supports a variety of land uses, including industrial, commercial, residential, and recreational developments, although much undeveloped forestland also remains.

Habitat disturbances, such as dredging, shoreline filling and bulkheading, waste disposal, and pollution from upland and in-river sources, have all been significant at some time during the recent history of this area.

FISH AND WILDLIFE VALUES:

Despite various habitat disturbances, Haverstraw Bay possesses a combination of physical and biological characteristics that make it one of the most important fish and wildlife habitats in the Hudson River estuary. The regular occurrence of brackish water over extensive areas of shallow bottom creates highly favorable (if not essential) conditions for biological productivity within the estuary, including submergent vegetation, phytoplankton and zooplankton, aquatic invertebrates, and many fish species.

Although the location of the salt front varies annually (and seasonally), Haverstraw Bay regularly comprises a substantial part of the nursery area for striped bass, American shad, white perch, tomcod, and Atlantic sturgeon that are produced in the Hudson. Other anadromous species, such as blueback herring and alewife, spawn in upstream freshwater areas, but move south and concentrate in this area before leaving the river in the fall.

Haverstraw Bay is also a major nursery and feeding area for certain marine species, most notably bay anchovy, Atlantic menhaden, and blue claw crab. Depending on location of the salt front, a majority of the spawning and wintering populations of Atlantic sturgeon in the Hudson may reside in Haverstraw Bay. Shortnose sturgeon (E) usually winter in this area as well. Significant numbers of waterfowl may occur in Haverstraw Bay during spring (March-April) and fall (September-November) migrations, but the extent of this use is not well documented.

Haverstraw Bay is a critical habitat for most estuarine-dependent fisheries originating from the Hudson River. This area contributes directly to the production of in-river and ocean populations of food, game, and forage fish species. Consequently, commercial and recreational fisheries throughout the North Atlantic depend on, or benefit from, these biological inputs from the Hudson River estuary.

IMPACT ASSESSMENT:

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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 water quality, increase turbidity or sedimentation, or alter water salinities or temperatures in Haverstraw Bay would result in significant impairment of the habitat. Any physical modification of the habitat or adjacent wetlands, through dredging, filling, or bulkheading, would result in a direct loss of valuable habitat area.

Habitat disturbances would be most detrimental during fish spawning and early developmental periods, which generally extend from April through August for most anadromous species using the area. Discharges of sewage or stormwater runoff containing sediments or chemical pollutants may result in significant adverse impacts on fish populations. Similarly, spills of oil or other hazardous substances, and leachate of contaminated groundwater, constitute a potential threat to fish and wildlife in the bay. Of particular concern in this major estuarine system are the potential effects of hydrologic disturbances, and effluent discharges. Existing areas of natural vegetation bordering Haverstraw Bay should be maintained to provide soil stabilization and buffer areas.

KNOWLEDGEABLE CONTACTS:

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Significant Coastal Fish and Wildlife Habitats

Haverstraw Bay (In part)
Part 1 of 2

New York State Department of State
Division of Coastal Resources

HUDSON
HAVERSTRAW
BAY
CROTON
BAY
Haverstaw Bay
Croton River & Bay
Centenary
0
2000
feet
Significant Coastal Fish and Wildlife Habitats
Croton River & Bay
Haverstraw Bay (In part)
Part 2 of 2
New York State
Department of State
Division of
Coastal Resources

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area:	**Iona Island Marsh**
Designated:	**November 15, 1987**
County:	**Rockland**
Town(s):	**Stony Point**
7½' Quadrangle(s):	**Peekskill, NY**

Score	Criterion
25	Ecosystem Rarity (ER) One of about 5 large, undeveloped, tidal marshes in the Hudson River; rare in the major ecological region.
16	Species Vulnerability (SV) Least bittern (SC) nesting.
15	Human Use (HU) Part of the Hudson River Estuarine Sanctuary; regionally significant for fish and wildlife research and education. Also popular among Rockland County birders. Additive division: 9 + 9/2 + 4/4 = 15.
4	Population Level (PL)

Concentrations of various wetland wildlife species are unusual in Rockland County.

1.2

Replaceability (R)

Irreplaceable.

SIGNIFICANCE VALUE = [(ER + SV + HU + PL) X R] = **71**

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This narrative 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 this policy.

DESIGNATED HABITAT: IONA ISLAND MARSH

HABITAT DESCRIPTION:

Iona Island Marsh is located between Iona Island and the west shore of the Hudson River, approximately three miles northwest of the City of Peekskill, in the Town of Stony Point, Rockland County (7.5' Quadrangle: Peekskill, N.Y.). The fish and wildlife habitat is an approximate 270 acre tidal, freshwater to brackish, wetland, dominated by narrow-leaved cattail. Non-vegetated tidal flats, subtidal aquatic beds, and rocky uplands also occur in the area. Tidal creek channels meander through the marsh, but account for a very limited amount of open water. Iona Island Marsh receives freshwater inflows from Doodletown Brook, a small, high gradient, stream. Parts of Iona Marsh are locally known as Salisbury Meadow, Ring Meadow, and Snake Hole Creek. The marsh is hydrologically connected to the Hudson River through openings in the railroad at each end of Iona Island.

The land area surrounding Iona Island Marsh is steep, rocky, undeveloped, forestland, subject to limited human disturbance. Principal habitat disturbances in the area are limited to traffic on N.Y.S. Route 9W and the Conrail railroad (which parallel the western and eastern boundaries of the area, respectively), and recreational activities on Iona Island, including use of a man-made causeway for access to the island. This causeway bisects the marsh, but flow of tidal water is accomodated by culvert pipes which run under the road. Iona Island Marsh is located within Bear Mountain State Park, and is owned by The Palisades Interstate Park Commission (PIPC).

FISH AND WILDLIFE VALUES:

Iona Island Marsh is one of the largest, undeveloped, tidal

wetlands on the Hudson River. Tidal marshes and flats such as those found in Iona Island Marsh are among the most valuable fish and wildlife habitats in the Hudson Valley. The ecological importance of Iona Island Marsh has been recognized in several formal designations: it is one of four sites comprising the Hudson River Estuarine Sanctuary (an area dedicated to environmental research and education); and, it is registered as a National Natural Landmark with the U.S. Department of the Interior.

Iona Island Marsh is a highly productive wetland, with minimal human disturbance, providing favorable habitats for a variety of fish and wildlife species. The marsh is especially important for marsh-nesting birds; probable or confirmed breeding species include green-backed

heron, least bittern (SC), Canada goose, mallard, wood duck, Virginia rail, sora, common moorhen, spotted sandpiper, belted kingfisher, marsh wren, red-winged blackbird, and swamp sparrow. Concentrations of herons, waterfowl, osprey (T), and shorebirds also occur in Iona Island Marsh during spring (March-April) and fall (September-November) migrations but the extent of use has not been documented. Other resident wildlife species in the area include muskrat, mink, snapping turtle, northern water snake, and green frog.

Shallow bay areas and creek channels in Iona Marsh provide spawning and nursery habitats for a variety of anadromous and resident freshwater fishes. Species found in the area include alewife, blueback herring, white perch, striped bass, banded killifish, and mummichog. In addition to fish and wildlife values, the rocky islands bisected by the causeway contain fragile strands of walking fern and prickly pear cactus, two unusual plant species in New York.

The diversity and abundance of wildlife species in Iona Island Marsh are unusual in the lower Hudson River. In 1947, the PIPC designated the marsh a Bird Sanctuary. Opportunities for birdwatching, along with recreational fishing, and informal nature study, attract a substantial number of Rockland County residents to the area. More important, however, is that designation of Iona Marsh as an Estuarine Research Reserve will focus research and education activities in the Hudson Valley on this 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.

It is essential that any potential impacts on Iona Island Marsh be evaluated with respect to its use for environmental research and education, and the need to maintain natural or controlled experimental conditions. Any activity that would substantially degrade water quality, increase turbidity or sedimentation, reduce freshwater inflows, or alter tidal fluctuations in Iona Island Marsh would result in significant impairment of the habitat. Application of herbicides or insecticides along the railroad right-of-way may result in adverse impacts on various fish and wildlife species, and should be avoided. Elimination of wetland or shallow areas, through dredging, filling, or bulkheading, would result in a direct impact on valuable fish and wildlife habitats.

Potentially, the Conrail Railroad could affect the hydrodynamics of this wetland, through changes in the causeway, bridges, and number of tracks. Likewise, any alteration of the access road to Iona Island should be designed to maintain or enhance natural tidal flows in the marsh. Activities that would subdivide this relatively large, undisturbed area into smaller fragments should be restricted. However, habitat management activities, including expansion of productive littoral areas, may be designed to maintain or enhance populations of certain fish or wildlife species.

Existing areas of natural vegetation bordering Iona Island Marsh should be maintained for their value as cover, perch sites, and buffer zones; significant human encroachment into the adjacent area could adversely affect certain species of wildlife. It is recommended that rare plant species occurring in the area be protected from adverse effects of human activities. Strict management of public access may be necessary to ensure that the various human uses of fish and wildlife resources in the area are compatible.

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Significant Coastal Fish and Wildlife Habitats
Hudson River Mile 44-56 (in part)
Part 3 of 3
Iona Island Marsh
New York State Department of State
Division of Coastal Resources
Hudson River Mile 44-56
Iona Island Marsh
Bear Mountain
Fort Montgomery
Peekskill
0
2000
feet