APPENDIX A

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: Poughkeepsie Deepwater Habitat

Designated: November 15, 1987

County(ies): Dutchess; Ulster

Town(s): Hyde Park, Poughkeepsie, Wappinger; Esopus, Lloyd, Marlboro

7½' Quadrangle(s): Hyde Park, NY; Poughkeepsie, NY; Wappingers Falls, NY

Score	Criterion
40	Ecosystem Rarity (ER) An extensive area of deep, freshwater, estuarine habitat; rare in New York State, but somewhat common in the Hudson River. Geometric mean: $(25 \times 64)^{\frac{1}{2}} = 40$.
36	Species Vulnerability (SV) Shortnose sturgeon (E) wintering area.
0	Human Use (HU) No significant fish or wildlife related human use of the area.
16	Population Level (PL) Concentrations of sturgeon and other estuarine species are unusual in New York State.
1.2	Replaceability (R) Irreplaceable.

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

= 110

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: POUGHKEEPSIE DEEPWATER HABITAT

HABITAT DESCRIPTION:

The Poughkeepsie Deepwater Habitat encompasses a fourteen mile stretch of the Hudson River extending from the Villages of West Park in Ulster County and Hyde Park in Dutchess County south to the hamlet of Marlboro in Ulster County. Towns with jurisdiction included in the area are Hyde Park, Poughkeepsie, and Wappinger, Dutchess County; and Esopus, Lloyd and Marlborough, Ulster County (7.5' Quadrangle: Hyde Park, N.Y., Poughkeepsie, N.Y., and Wappingers Falls, N.Y.). The important fish and wildlife habitat is a nearly continuous river bottom trench, from 30 feet deep to the bottom. Most of this area has water depths of 50 feet or greater including a small area in the "Crum Elbow" section of the river which exceeds 125 feet in depth.

FISH AND WILDLIFE HABITAT:

Deepwater estuary areas such as the Poughkeepsie Deepwater Habitat are rare in the eastern United States. The Hudson River is the only river in New York State that contains this ecosystem type.

Deepwater areas provide wintering habitat for shortnose sturgeon (E), and support an unusual diversity of marine species in the Hudson River. Shortnose sturgeon also use this area as spawning grounds. Yolk-sac shortnose sturgeon larvae have been collected from this region at depths of 45 feet to 120 feet. Although habitat requirements of this species in the Hudson River are not well known, it is believed that these deepwater areas may be critical throughout the year. A variety of estuarine and marine species appear in numbers in this area, including bay anchovies, silversides, bluefish, weakfish, and hogchokers.

The abundance of shortnose sturgeon and these other estuarine species is unusual in New York State. However, commercial or recreational uses of fish and wildlife in this area are not known to be significant.

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.

Activities that would substantially degrade water quality, including changes in temperature, turbidity, or freshwater to saline distribution, would result in significant impairment of the habitat. This area may be especially sensitive to discharges of municipal or industrial wastewater, sewage effluents, and agricultural runoff.

Major reduction in overall depths along this deepwater trench would also have adverse effects on the endangered shortnose sturgeon utilizing the area. Of particular concern is a past practice of using portions of the deepwater trench as a dredge spoil dumping site. Activities such as this must be controlled to avoid interference with use of the area by shortnose sturgeon. Impingement of shortnose sturgeon on water intake screens could affect the population status of this endangered species.

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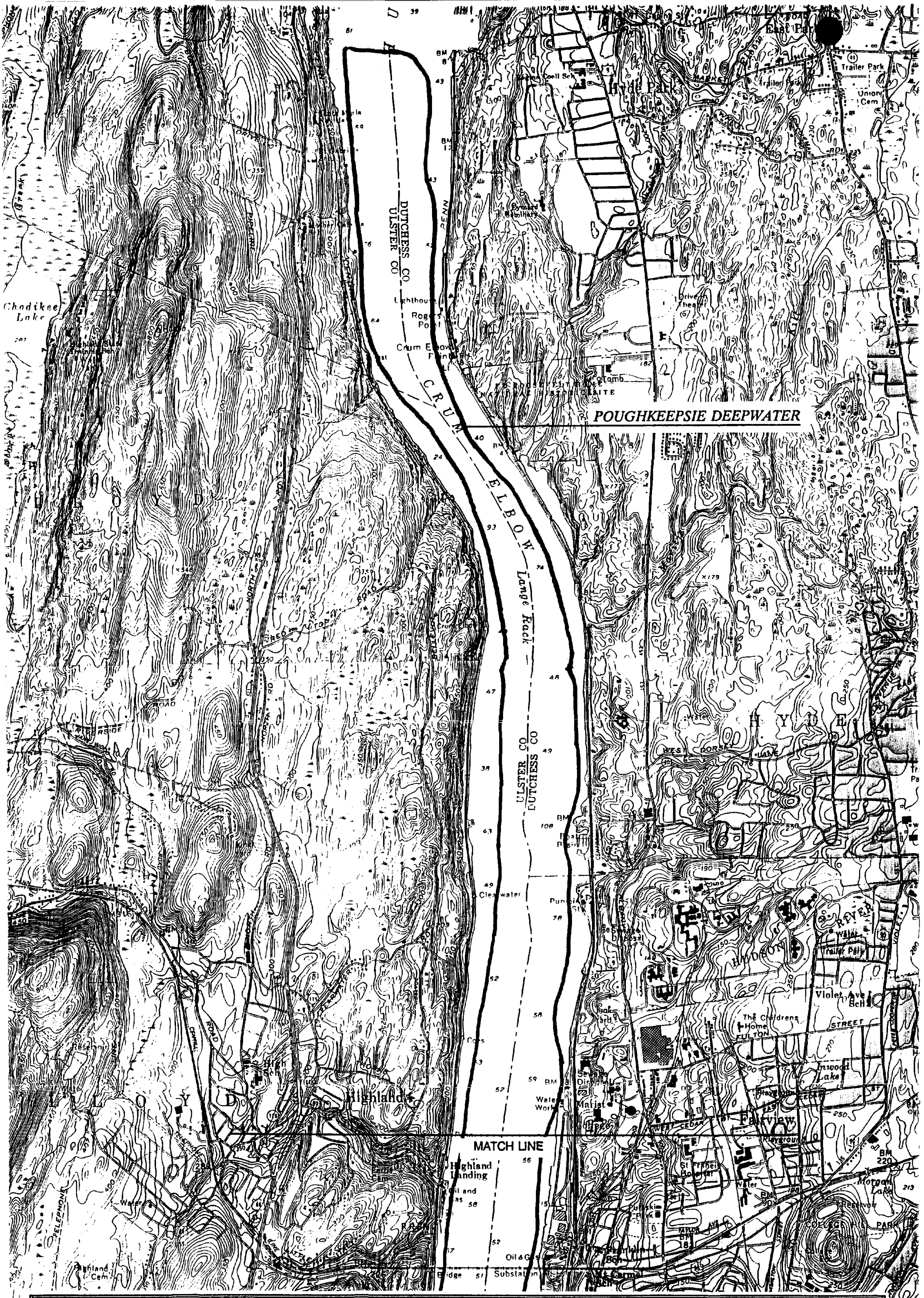


SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS

Poughkeepsie Deepwater (In part)

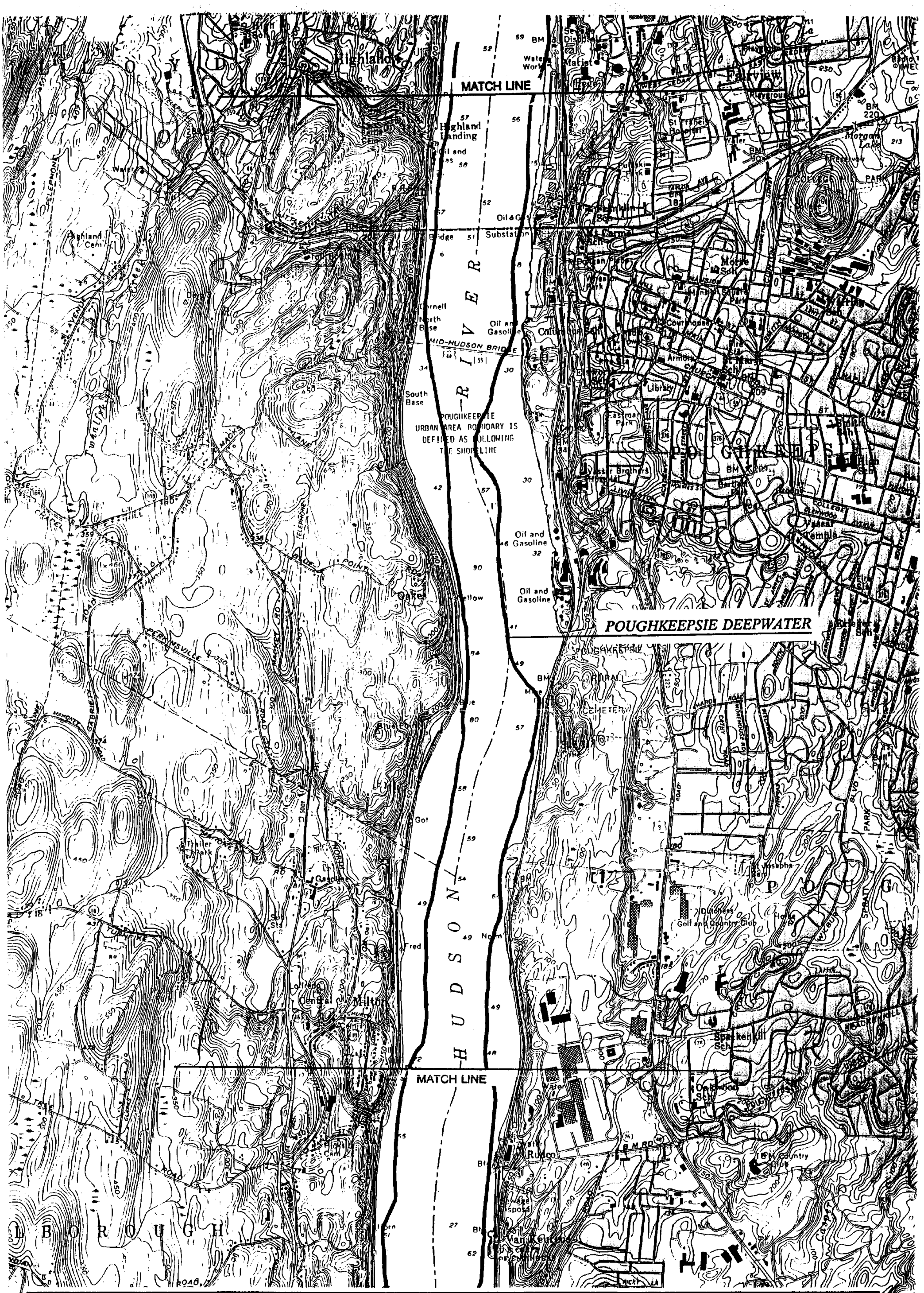
Miles

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



SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS

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Miles

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N

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Prepared by T. Hart and G. Capobianco September 1990

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS

Poughkeepsie Deepwater (in part)

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

Prepared by T. Hart and G. Capobianco September 1990

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Wappinger Creek**

Designated: **November 15, 1987**

County: **Dutchess**

Town(s): **Poughkeepsie, Wappinger**

7½' Quadrangle(s): **Wappingers Falls, NY**

Score	Criterion
12	Ecosystem Rarity (ER) One of the major freshwater tributaries of the lower Hudson River, containing a diversity of habitats (and several rare plant species); rarity reduced by human disturbances. Geometric mean: 9 x 16 = 12.
25	Species Vulnerability (SV) Osprey (T) concentrate at the mouth during spring migration.
4	Human Use (HU) Recreational fishing attracts anglers from throughout Dutchess County.
4	Population Level (PL) Concentrations of anadromous and resident freshwater fish species are unusual in Dutchess County.
1.2	Replaceability (R) Irreplaceable.

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

= **54**

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DESIGNATED HABITAT: WAPPINGER CREEK

HABITAT DESCRIPTION:

Wappinger Creek is located on the east side of the Hudson River, on the boundary between the Towns of Poughkeepsie and Wappinger, Dutchess County (7.5' Quadrangle: Wappingers Falls, N.Y.). The fish and wildlife habitat is an approximate two mile segment of this freshwater tributary, extending from its mouth on the Hudson River to the first dam upstream, located in the Village of Wappingers Falls.

Wappinger Creek is a relatively large, perennial, warmwater stream, with a drainage area of over 180 square miles, and an average annual discharge volume in excess of 250 cubic feet per second. The first quarter mile of stream below the dam flows through a steep, rocky, rapids, situated in a wooded ravine. Below this stretch, the creek is within the tidal range of the Hudson River, and contains mudflats, sandbars, aquatic beds, emergent marsh, and rocky shore communities. At least part of this segment appears to have been dredged or channelized in the past, to accomodate navigation to commercial and industrial developments along the creek in Wappingers Falls. Despite this disturbance, much of land bordering Wappinger Creek remains in a relatively natural condition, dominated by steep wooded slopes.

Habitat disturbance in the area is generally limited to the presence of road and railroad crossings, discharges of stormwater runoff, low density residential development, small-scale dredging operations, and upstream water uses.

FISH AND WILDLIFE VALUES:

Wappinger Creek is one of about 5 major tributaries emptying into the lower portion of the Hudson River estuary. The considerable length of stream channel accessible to migratory fishes, the diversity of habitats, and the lack of significant human disturbance in upper portions of the creek, provide favorable habitat conditions for many fish and wildlife species.

Past disturbances, including dredging and invasion by waterchestnut (still abundant), may have reduced habitat quality in the area. However, several rare plant species, including grassleaf arrowhead, subulate arrowhead, kidneyleaf mud-plantain, and Maryland bur-marigold are known to occur in the estuarine portion of Wappinger Creek.

Wappinger Creek is an important spawning area for anadromous fishes, such as alewife, blueback herring, white perch, tomcod, and striped bass. Generally, these species enter the stream between April 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 lower creek channel and the Hudson River. An exception is tomcod, which spawn in the area in December and January. A substantial warmwater fish community also occurs in Wappinger Creek throughout the year. Resident species include largemouth bass, bluegill, pumpkinseed, red-breasted sunfish, and brown bullhead. The abundant fisheries resources of the Wappinger Creek provide significant opportunities for recreational fishing by Dutchess County residents, especially for black bass.

Although no developed public access facilities exist in the area, many anglers gain access from a privately-owned informal boat ramp on the south shore of the creek mouth area.

In addition to its importance as a fisheries resource, Wappinger Creek provides productive feeding habitats for various wildlife species. Herons, waterfowl, furbearers, and turtles may be found in the area at almost any time of year. Concentrations of osprey (T) have been observed at the mouth of Wappinger Creek during spring migration (mid-April through May).

Freshwater inflows from Wappinger Creek are also important for maintaining water quality in Hudson River fish and wildlife habitats.

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, reduce flows, or increase water temperatures in Wappinger Creek would result in significant impairment of the habitat. Any physical alteration of the habitat, 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 incubation periods, which generally extend from April through July for most warmwater species. Discharges of sewage or stormwater runoff containing sediments or chemical pollutants (including fertilizers, herbicides, or insecticides) may result in significant adverse impacts on fish populations. However, efforts to control water chestnut may be desirable or necessary to maintain habitat quality in this area. Clear water areas at the mouths of tributary streams are important feeding areas for osprey during migration. Of particular concern in this major tributary are the potential effects of upstream disturbances, including water withdrawals, impoundments, stream bed disturbances, and effluent discharges. Development of hydroelectric facilities or municipal water supplies should only be allowed with run-off river operations, and minimum flow restrictions, respectively.

Barriers to fish migration, whether physical or chemical, would have significant impacts on fish populations in the creek as well as in the Hudson River. Existing areas of natural vegetation bordering Wappinger Creek should be maintained to provide bank cover, soil stabilization, perching sites, and buffer areas. It is recommended that rare plant species occurring in the creek be protected from adverse effects of human activities. Development of appropriate public access to the creek may be desirable to ensure that adequate opportunities for compatible human uses of the fish and wildlife resources are available.

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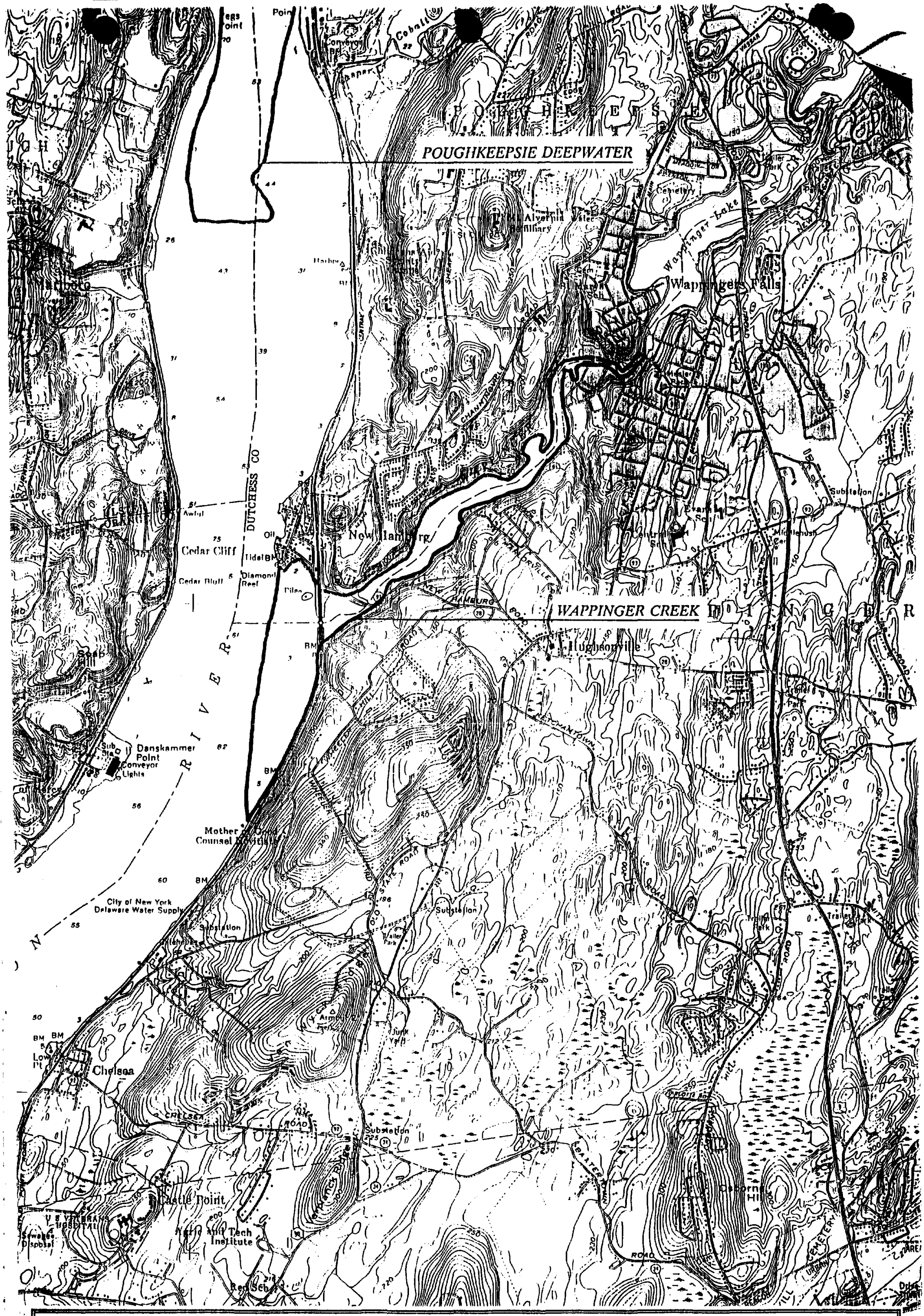

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS

Wappinger Creek / Poughkeepsie Deepwater (In part)

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