

Appendix A Fishkill Creek Coastal Fish and Wildlife Habitat

Name of Area: **Fishkill Creek**
 Designated: **November 15, 1987**
 County: **Dutchess**
 Town(s): **Fishkill, Beacon**
 7½' Quadrangle(s): **West Point, NY**

Score	Criterion
16	Ecosystem Rarity (ER) One of the major freshwater tributaries of the lower Hudson River (containing a diversity of estuarine habitats) and a relatively large, wooded peninsula, isolated from human disturbance.
33	Species Vulnerability (SV) Concentrations of osprey (T) occur in the area regularly, and least bittern (SC) nesting. Additive division: $25 + 16/2 = 33$.
9	Human Use (HU) This area is a focal point for osprey research in the Hudson Valley, including attempts to establish a nesting pair.
9	Population Level (PL) Concentrations of osprey during migration are unusual in the lower Hudson Valley; concentrations of anadromous and resident fishes are unusual in Dutchess County.
1.2	Replaceability (R) Irreplaceable.

SIGNIFICANCE VALUE = $[(ER + SV + HU + PL) \times R] = 80$

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 habitats 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: FISHKILL CREEK

HABITAT DESCRIPTION:

Fishkill Creek is located on the east side of the Hudson River, in the City of Beacon and the Town of Fishkill, Dutchess County (7.5' Quadrangle: West Point, N.Y.). The fish and wildlife habitat is an approximate one-half mile segment of this relatively large, perennial, warmwater stream, extending from its mouth on the Hudson River to the first dam upstream. A short section of Creek below the dam flows over a steep, rocky, rapids. However, most of the habitat (up to the first road bridge) is within the tidal range of the Hudson River, and contains extensive areas of mudflats, emergent marsh, and subtidal beds of aquatic vegetation. The habitat includes an approximate 80 acre shallow bay area located at the

creek mouth (west of the Conrail railroad), and undeveloped portions of Denning Point, a wooded, sand peninsula which shelters the area. Nearly all of the land area bordering Fishkill Creek, including Denning Point, remains in a relatively natural condition. Habitat disturbance in the area is generally limited to the presence of road and railroad crossings, invasion by water chestnut, upstream water uses, and potential effects of industrial and landfill operations located just north of the area.

FISH AND WILDLIFE VALUES:

Fishkill Creek is one of about 5 major tributaries emptying into the lower portion of the Hudson River estuary. The diversity of natural ecological communities, and lack of significant human disturbance in the area, provides favorable habitat conditions for a variety of fish and wildlife species. Habitat quality in the open bay portion may be reduced by extensive invasion by water chestnut. However, several rare plant species, including subulate arrowhead, and kidneyleaf mud-plantain, occur in the estuarine portion of Fishkill Creek.

Fishkill 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 shallows near the creek mouth and other nursery areas in the Hudson River. An exception is tomcod, which spawn in the area in December and January. A substantial warmwater fish community also occurs in Fishkill Creek throughout the year. Resident species include largemouth bass, bluegill, brown bullhead, and goldfish. Fishkill Creek probably marks the northern extent of blueclaw crab (in abundance), and is occasionally used by marine fishes, such as bluefish, anchovy, silversides, and hogchoker. Freshwater inflows from Fishkill Creek play an important role in maintaining water quality (e.g., salinity gradient) in the Hudson River estuary.

The abundant fisheries resources of Fishkill Creek provide significant opportunities for recreational fishing. However, the stream channel is relatively inaccessible, and angling pressure throughout the area is light.

In addition to its importance as a fisheries resource, Fishkill Creek provides productive feeding habitats for various wildlife species. Locally significant concentrations of herons, waterfowl, furbearers, and turtles, may be found in the area at almost any time of year. Fishkill Creek is reported to be a major crossing point for raptors migrating through the Hudson Valley, along the northern slope of the Hudson Highlands. Although complete data on these bird populations are not available, concentrations of osprey (T) have been observed regularly at Fishkill Creek during Point, and a man-made nesting platform has been constructed on the southern end of the peninsula. This is one of only 3 sites on the Hudson River where researchers are hoping to establish a breeding pair of these birds. In addition, least bittern (SC) has been reported as a probable breeding species in the marshes at the mouth of Fishkill Creek.

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 includes but is 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, increase turbidity or sedimentation, reduce flows, alter tidal fluctuations, or increase water temperatures in Fishkill Creek would result in significant

impairment of the habitat. Discharges of sewage or stormwater runoff containing sediments or chemical pollutants (including fertilizers, herbicides, or insecticides) may result in significant impairment of the habitat. However, efforts to control water chestnut may be desirable or necessary to maintain the ecological importance of this area. Of particular concern in this major tributary are the potential effects of upstream disturbances, including water withdrawals, impoundments, stream bed disturbances, and effluent discharges. Clear water areas at the mouths of major tributary streams are important feeding areas for osprey during migration. Development of hydroelectric facilities or municipal water supplies should only be allowed with run-of-river operations and appropriate minimum flow restrictions, respectively. Barriers to fish migration, physical or chemical, would have significant impacts on fish populations in the creek as well as in the Hudson River. Habitat disturbances would be most detrimental during fish spawning and incubation periods, which generally extend from April through July for most warmwater species. Elimination of wetlands or significant human encroachment into the area, through dredging or filling, could result in a direct loss of valuable fish and wildlife habitats.

Existing areas of natural vegetation bordering Fishkill Creek should be maintained to provide bank cover, soil stabilization, nesting and perching sites, and buffer areas. Human disturbance around Denning Point should be minimized when osprey are in the area. It is also recommended that rare plant species occurring in Fishkill Creek be protected from adverse effects of human activities.

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