

APPENDIX B

VOSBURGH SWAMP AND MIDDLE GROUND FLATS HABITAT

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Vosburgh Swamp and Middle Ground Flats**

Designated: **November 15, 1987**

County: **Greene**

Town(s): **Coxsackie, Athens**

7½' Quadrangle(s): **Hudson North, NY**

Score Criterion

- 25** Ecosystem Rarity (ER)
 An extensive area of tidal mudflats, wetlands, and littoral zones; rare in the Hudson Valley region.
- 0** Species Vulnerability (SV)
 Mud turtle (T) and least bittern (SC) reported, but not confirmed.
- 14** Human Use (HU)
 Commercial shad fishery and waterfowl hunting support significant use by residents of the Hudson Valley;
 additive division: $9 + 9/2 = 14$.
- 9** Population Level (PL)
 Concentrations of waterfowl and various anadromous fish species are unusual in the Hudson Valley.
- 1.2** Replaceability (R)
 Irreplaceable.
-

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

= 57

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: VOSBURGH SWAMP AND MIDDLE GROUND FLATS

HABITAT DESCRIPTION:

Vosburgh Swamp and Middle Ground Flats extend for approximately four miles along the western shore of the Hudson River, upstream from the Village of Athens, in the Towns of Cossackie and Athens, Greene County (7.5' Quadrangle: Hudson North, N.Y.). The fish and wildlife habitat encompasses approximately 1,200 acres, comprised primarily of extensive mudflats and shallows, off-channel open water areas, hardwood swamp, a freshwater impoundment (Vosburgh Swamp) and spoil bank islands. The habitat also includes Murderers Creek, upstream approximately one-half mile to Sleepy Hollow Lake dam, which is the first impassable barrier to fish.

FISH AND WILDLIFE VALUES:

Extensive tidal mudflats and shallow littoral zones are relatively rare in the Hudson Valley region of New York. These habitat types, along with the emergent wetlands and open water areas, make the Vosburgh Swamp and Middle Ground Flats area very attractive to many fish and wildlife species. The mudflats, marshes, and littoral zones in this area provide valuable feeding and resting habitat for large concentrations of waterfowl during the fall and spring migrations. Approximately 10,000 canvasbacks, along with various other waterfowl species, have been reported in the area during seasonal migrations. When open water is available, this area also provides an important waterfowl wintering area in the upper Hudson Valley region, especially significant for redhead and canvasback ducks. Several spoil bank islands on Middle Ground Flats provide relatively unique vertical sand banks that have been colonized by bank swallows. This is one of the few locations in this section of the Hudson River where this species has been confirmed breeding.

A heavy concentration of American shad utilize the littoral zone areas at West Flats and around Middle Ground Flats for spawning. This area, including Murderers Creek, is also utilized as a spawning, nursery, and feeding area by striped bass, alewife, blueback herring, white perch, and a variety of resident freshwater species. Mud turtles (T) and least bittern (SC) have been reported to reside in Vosburgh Swamp, but this has not been confirmed for either species. This wetland area does provide potential habitat for various other marsh-nesting birds, including green-backed heron, American bittern, black duck, mallard, wood duck, Virginia rail, common moorhen, and marsh wren.

Several rare plant species, including heartleaf plantain, and subulate arrowhead, occur in river shoreline areas near Vosburgh Swamp.

Human use of the Vosburgh Swamp and Middle Ground Flats area is of regional significance. The area receives very heavy waterfowl hunting pressure during the fall migration period. In addition, one of the northernmost commercial shad fisheries is established in the vicinity of Middle Ground Flats. A NYSDEC boat launch is located on the south side of Murderer's Creek, providing access for recreational fishing throughout 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 applying 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, increase turbidity or temperature, or alter water depths in the Vosburgh Swamp and Middle Ground Flats habitat would result in significant impairment of the habitat. Disruption of the freshwater or tidal flows in these areas could have major consequences to the littoral zones, wetlands, and mudflats which contribute significantly to the value of this habitat. Elimination of productive wetland and littoral areas, through dredging, filling, or bulkheading would have significant impacts on the fish and wildlife resources of Vosburgh Swamp and Middle Ground Flats.

Spills of oil or other hazardous substances are an especially significant threat to this area, because the biological activity of tidal flats is concentrated at the soil surface, much of which may be directly exposed to these pollutants. Thermal discharges, depending on time of year, may have variable effects on use of the area by aquatic species (and wintering waterfowl); shad spawning activities and survival are directly affected by water temperature. Installation and operation of water intakes could have significant impacts on fish populations in the area, through impingement of juvenile and adult fish, or entrainment of fish eggs and larval stages.

KNOWLEDGEABLE CONTACTS:

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VOSBURG SWAMP AND MIDDLE GROUND FLATS

STOCKPORT CREEK AND FLATS

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS

Stockport Creek and Flats (in part) / Vosburg Swamp and Middle Ground Flats

