

COASTAL FISH AND WILDLIFE RATING FORM

Name of area: **Mill Creek Wetlands**
 Designated: **November 15, 1987**
 Revised: **August 15, 2012**
 County: **Columbia**
 Town(s): **Stuyvesant**
 7.5' Quadrangles: **Ravena, NY**

<u>Assessment Criteria</u>	<u>Score</u>
Ecosystem Rarity (ER) -- the uniqueness of the plant and animal community in the area and the physical, structural and chemical features supporting this community.	
ER Assessment – Contains ecological communities that are rare in New York State: freshwater tidal marsh and freshwater tidal swamp.	64
Species Vulnerability (SV) – the degree of vulnerability throughout its range in New York State of a species residing in the ecosystem or utilizing the ecosystem for its survival.	
SV Assessment – Wintering bald eagle (T) roosting site.	25
Human Use (HU) – the conduct of significant, demonstrable commercial, recreational, or educational wildlife-related human use, either consumptive or non-consumptive, in the area or directly dependent upon the area.	
HU Assessment – Provides area for recreational fishing and bird watching in Hudson River Valley ecological region and local residents in Columbia County.	9
Population Level (PL) – the concentration of a species in the area during its normal, recurring period of occurrence, regardless of the length of that period of occurrence.	
PL Assessment – Concentrations of many wildlife species occurring in this area are unusual in Columbia County; this area supports an unusually diverse population of amphibians and reptiles.	4
Replaceability (R) – ability to replace the area, either on or off site, with an equivalent replacement for the same fish and wildlife and uses of those same fish and wildlife, for the same users of those fish and wildlife.	
R Assessment – Irreplaceable	1.2
Habitat Index (ER+SC+HU+PL)= 102	Significance Value(HI x R)= 122.4

LOCATION AND HABITAT DESCRIPTION

Mill Creek Wetlands is located on the east side of the Hudson River approximately two miles north of the hamlet of Stuyvesant in the Town of Stuyvesant, Columbia County (7.5' Quadrangle: Ravena, N.Y.). This fish and wildlife habitat is an approximate 270-acre tidal freshwater wetland, with community types ranging from mudflats, submerged aquatic vegetation beds and emergent marshes to flooded shrubs and deciduous tidal swamp. Mill Creek Wetlands is a very diverse and productive tidal freshwater wetland. The predominant ecological communities; freshwater tidal marsh and freshwater tidal swamp are rare in New York State, only occurring in the Hudson Valley coastal region.

The submerged aquatic vegetation beds are mainly water celery (*Vallisneria americana*) and Hudson River water nymphs (*Najas guadalupensis* ssp. *Meunsheri*) (E). The wetlands have formed at the mouths of several relatively small, medium gradient, warm water streams, including Mill Creek. However, there is relatively little open water within the area. A number of listed plant species are present here: (Southern estuary beggar ticks *Bidens bidentoides*) (R) and Long's bittercress (*Cardamine longii*) (T).

The habitat is bisected by the railroad but is otherwise subject to minimal human disturbance. The railroad is situated on an elevated causeway and has two bridges that accommodate tidal fluctuations throughout the area. The invasive species common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*) and water chestnut (*Trapa natans*) have been documented in the habitat. Most of the freshwater tidal swamp (approximately 100 acres) is within the Lewis A. Swyer Preserve, owned and managed by The Nature Conservancy. The remainder of the site is under private ownership.

FISH AND WILDLIFE VALUES

Mill Creek Wetlands has a high degree of plant diversity, minimal human disturbance, and a number of freshwater inflows, creating favorable habitat conditions for a variety of fish and wildlife species. Mill Creek provides spawning habitat for coastal migratory fishes such as alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*). Resident fish species such as white perch (*Morone americana*), minnows, killifish (*Fundulus diaphanous*), and bluegill (*Lepomis macrochirus*) also inhabit the shallow water areas. Submerged aquatic vegetation beds located within Mill Creek Wetlands provide food for fish, invertebrates and waterfowl as well as refuge for fish and invertebrates.

This wetland area is also habitat for spotted turtle (*Clemmys guttata*) (SC), map turtle (*Graptemys geographica*), painted turtle (*Chrysemys picta*), mudpuppy (*Necturus maculosus*), American toad (*Bufo americanus*), spring peeper (*Pseudoacris crucifer*), wood frog (*Rana sylvatica*), northern leopard frog (*Rana pipiens*), bullfrog (*Rana catesbeiana*), spotted salamander (*Ambystoma maculatum*), green frog (*Rana clamitans*), grey tree frog (*Hyla versicolor*) and blue-spotted salamander (*Ambystoma laterale*)(SC).

Concentrations of waterfowl, herons, northern harrier (*Circus cyaneus*) (T), osprey (*Pandion haliaetus*) (SC) and shorebirds may occur in Mill Creek Wetlands, especially during spring and fall migrations. Other wildlife species inhabiting the area include white-tailed deer, raccoon and muskrat.

Opportunities for bird watching, informal nature study, and other passive recreation attract local and regional residents to this productive wetland.

IMPACT ASSESSMENT

Any activities that would degrade water quality, increase turbidity, increase sedimentation, reduce water levels, affect temperature or alter tidal fluctuations in the Mill Creek Wetlands or its tributaries would result in significant impairment of the habitat. Of special concern are the potential effects of upstream disturbances, including water withdrawals, impoundments, streambed disturbances, or discharges of agricultural or municipal runoff.

Elimination of wetlands, littoral zones, or mudflats associated with Mill Creek, through the loss of tidal connection, excavation or filling would result in the direct loss of valuable habitat. 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. Aquatic habitat disturbances would be most detrimental during bird nesting, and fish spawning and nursery periods, which generally extend from March through August for most warm water species.

Existing areas of natural vegetation bordering Mill Creek Wetlands and its tributaries should be maintained and where possible restored to provide perch sites, bank cover, soil stabilization, maintain or improve water quality and provide buffer areas from development. Clearing or dieback of the tidal wetland forest would result in the loss of an unusual habitat type in the Hudson Valley region.

The presence of invasive species and the expansion of its range within the marsh may result in changes in native plant, vertebrate and invertebrate species composition and abundance. In particular, changes in plant community may affect marsh-nesting birds. Effective control of invasive plant species, through a variety of means, may improve fish and wildlife species use of the area. Application of herbicides or insecticides along or within the marsh may result in adverse impacts on various fish and wildlife species and should be avoided. However, limited and monitored application of herbicides or pesticides to control invasive species may be beneficial in maintaining habitat for native fish and wildlife species.

HABITAT IMPAIRMENT TEST

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:

1. destroy the habitat; or,
2. 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, and 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).

KNOWLEDGABLE CONTACTS

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