

COASTAL FISH AND WILDLIFE RATING FORM

Name of area: **Rogers Island**
 Designated: **November 15, 1987**
 Revised: **August 15, 2012**
 County: **Columbia**
 Town(s): **Greenport**
 7.5' Quadrangles: **Hudson South, 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 – Includes a rare shallow vegetated secondary channel unusual in the Hudson Valley ecological region. Habitat contains freshwater tidal swamp; a rare ecosystem type in New York State.	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 – Shortnose sturgeon (E), Bald eagle (T), least bittern (T), American bittern (SC) Additive Division: $36 + 25/2 + 25/4 + 16/8 = 56.75$	56.75
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 -- Popular waterfowl hunting areas on the Hudson River. Geometric mean: $\sqrt{16 \times 9} = 12$	12
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 and diversity of fish and wildlife in this area are unusual in the Hudson Valley ecological region.	9
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+SV+HU+PL)= 141.75	Significance (HI x R)= 170.1

LOCATION AND DESCRIPTION OF HABITAT

Rogers Island is located approximately two miles south of the City of Hudson, on the east side of the Hudson River, in the Town of Greenport, Columbia County (7.5' Quadrangle: Hudson South, N.Y.). The fish and wildlife habitat is an approximate 680 acre area, encompassing tidal freshwater swamp on Rogers Island, and a secondary channel, Hallenbeck Creek, on the east side of the island which contains extensive mudflats, freshwater tidal marshes and vegetated shallow areas. Extensive tidal mudflats and vegetated shallows exist to the north, south, and west of the island.

Along with several important waterfowl food plants, there are a number of threatened and rare plants growing in this area: golden club (*Orontium aquaticum*) (T), Southern estuary beggar ticks (*Bidens bidentoides*) (R), Long's bittercress (*Cardamine longii*) (T), swamp lousewort (*Pedicularis lanceolata*) (T), heartleaf plantain (*Plantago cordata*) (T) and smooth bur-marigold (*Bidens laevis*) (T).

Roger's Island is a Wildlife Management Area administered by the NYSDEC. The Rip Van Winkle Bridge spans the habitat, but is otherwise relatively free from human disturbance except the presence of invasive species including common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), and water chestnut (*Trapa natans*).

The Hallenbeck Creek has been identified as a high quality secondary channel reference site to inform future restoration activities throughout the upper Hudson River estuary.

FISH AND WILDLIFE VALUES

Rogers Island is a very diverse and productive coastal wetland habitat. It includes the largest tidal forested wetland on the Hudson River (and in New York State), along with extensive mudflats and littoral zones. The Hallenbeck Creek secondary channel provides spawning and juvenile fish forage and refuge habitat for a variety of resident and migratory fish species that are important to the coastal ecosystem.

The various habitat types found in the Rogers Island area are very attractive to many fish and wildlife species. Littoral zone areas are used as spawning, nursery, and feeding habitats by American shad (*Alosa sapidissima*), alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), striped bass (*Morone saxatilis*), white perch (*Morone americana*), shortnose sturgeon (*Acipenser brevirostrum*) (E) and a variety of resident freshwater species. The submerged aquatic vegetation, mainly water celery (*Vallisneria americana*) provides food for fish, invertebrates and waterfowl as well as refuge for fish and invertebrates.

Secondary channels also provide refuge and forage areas for resident and migratory bird species. The interspersed forest and wetland cover types provide favorable nesting areas for American bittern (*Botaurus lentiginosus*) (SC), least bittern (*Ixobrychus exilis*) (T), green-backed heron (*Butorides virescens*), American black duck (*Anas rubripes*), wood duck (*Aix sponsa*) and many passerine bird species. Bald eagles (*Haliaeetus leucocephalus*) (T) use this habitat through much of the year. The mudflats and littoral zones in this area provide valuable feeding and resting habitat for large concentrations of waterfowl during fall and spring migrations. This area also provides an important waterfowl wintering area in the upper Hudson Valley region.

In addition to supporting fish and birds, this area provides habitat for common map turtles (*Graptemys geographica*), water snake (*Nerodia s. sipedon*), spotted salamander (*Ambystoma maculatum*), red-spotted newt (*Notophthalmus v. viridescens*), redback salamander (*Plethodon cinereus*), American toad (*Bufo americanus*), gray treefrog (*Hyla versicolor*), spring peeper (*Pseudacris crucifer*), bullfrog (*Rana catesbeiana*), green frog (*Rana clamitans*) and wood frog (*Rana sylvatica*).

Human use of Rogers Island is of regional significance. Rogers Island is a popular waterfowl hunting area during the fall migration period. Non-motorized recreational boating is also popular in this area.

IMPACT ASSESSMENT

It is essential that any potential impacts on Rogers Island be evaluated with respect to its use for environmental and restoration research, and the need to maintain natural conditions.

Any activity that would substantially degrade water quality, increase turbidity or sedimentation, alter flows, temperature or water depths at Roger's Island habitat would result in significant impairment of the habitat. All species may be affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, excessive turbidity or sediment loading, nonpoint source runoff, and waste disposal. Discharges of sewage or stormwater runoff containing sediments or chemical pollutants (including fertilizers, herbicides and/or insecticides) may result in adverse impacts on the habitat area. 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.

Any physical modification of the habitat or adjacent wetlands, through dredging, filling or bulkheading, would result in a direct loss of valuable habitat area. Elimination of productive wetland and littoral areas through dredging, filling, or bulkheading would result in significant impairment of the habitat. Clearing or dieback of the tidal wetland forest would result in the loss of an unusual habitat type in the Hudson Valley region. Activities that would subdivide this relatively large, undisturbed area into smaller fragments should be restricted. Adjacent wetland, shoreline, and forested habitats should be protected and where possible restored to provide bank cover, stabilize soil, maintain or improve water quality and provide buffer area from development.

Alteration to existing railroad causeways and bridges could affect the hydrology within habitat areas. Any construction related to these structures should utilize the best available science and technology to reduce and avoid negative impacts to the habitat area.

Thermal discharges, depending on time of year, could have adverse effects on use of the area by migratory and resident species. Entrainment and impingement causes significant mortality to all life stages of fish, including endangered species.

The presence of invasive species and the expansion of their range within the habitat may result in changes in native plant, vertebrate and invertebrate species composition and abundance. In particular, changes in plant communities 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. Control methods, including biological controls and regulated use of herbicides must only be implemented, if other methods of control have been explored, and then only under permit with strict adherence to all precautionary measures to avoid impacts to non-target species. The primary goals of such efforts must be recovery and maintenance of habitat for native fish and wildlife species.

Unrestricted use of motorized vessels, including personal watercraft, in shallow waters can have adverse effects on the benthic community, and on fish and wildlife populations through re-suspension of bottom sediments and through shoreline erosion which may reduce water clarity and increase sedimentation. Use of motorized vessels should be controlled (e.g., no wake zone, speed zones, no motor zone) in and adjacent to shallow waters and adjacent wetlands. Docks, piers, catwalks, or other structures may be detrimental to submerged aquatic vegetation beds through direct or indirect effects from shading, mooring

chain and propeller scarring, and other associated human uses. In particular, the submerged aquatic vegetation beds are especially vulnerable to impacts that decrease light penetration into the water.

Where opportunities exist, appropriate restoration of intertidal and subtidal shallow habitats should be undertaken using the best available science and proper monitoring protocols. Restoration and enhancement efforts should be monitored, and the associated habitat effects should be reported and evaluated.

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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