

**COASTAL FISH & WILDLIFE HABITAT RATING FORM**

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Name of Area: **Deer Creek Marsh**

Designated: **October 15, 1987**

County: **Oswego**

Town(s): **Richland**

7½' Quadrangle(s): **Pulaski, NY**

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<b><u>Score</u></b>	<b><u>Criterion</u></b>
<b>25</b>	Ecosystem Rarity (ER) One of the largest undeveloped, coastal barrier-wetland ecosystems in the Great Lakes Plain ecological region.
<b>37</b>	Species Vulnerability (SV) Northern harrier (T), least bittern (SC), and black tern (SC) nesting. Additive division: 25 + 16/2 + 16/4
<b>6</b>	Human Use (HU) Waterfowl hunters from Oswego County and the Syracuse area use the area. Geometric mean: (4 x 9) <sup>½</sup>
<b>9</b>	Population Level (PL) Concentrations of many wetland wildlife species are among the largest in the Great Lakes Plain ecological region.
<b>1.2</b>	Replaceability (R) Irreplaceable

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

**= 92**

## **DESIGNATED HABITAT: DEER CREEK MARSH**

### **LOCATION AND DESCRIPTION OF HABITAT:**

Deer Creek Marsh is located on the eastern shore of Lake Ontario, between the hamlets of Rainbow Shores and Selkirk, in the Town of Richland, Oswego County (7.5' Quadrangle: Pulaski, N.Y.). The fish and wildlife habitat is an approximate 1200 acre area, encompassing an extensive freshwater wetland complex, a mile-long segment of undeveloped barrier beach, and Deer Creek. The wetland area is bisected by an east-west extension of higher ground which has been developed for access to a private campground at Brennans Beach. North of this point, the marsh is dominated by cattail and other emergent wetland vegetation, and comprises a major portion of the NYSDEC's Deer Creek Marsh Wildlife Management Area. Deer Creek, a small, slow-moving, warmwater stream, flows through the middle of this northern area, and serves as the primary hydrologic connection to Lake Ontario. The southern one-third of the habitat area is predominantly scrub-shrub and forested wetland, and is privately owned. All of Deer Creek Marsh is densely vegetated, with less than 2% of the area in open water. The land area bordering the north, east, and south sides of the wetland is rural in nature, including deciduous forest, abandoned fields, agricultural lands, and low density residential development. To the west of the marsh, much of the sand dune formation has been developed for seasonal and permanent residences, campgrounds, recreation areas, and sand mining operations. Such uses were once prevalent on the segment of barrier beach included in the fish and wildlife habitat, prior to acquisition and removal by the NYSDEC in 1979.

### **FISH AND WILDLIFE VALUES:**

Deer Creek Marsh is one of several very large, undeveloped, coastal wetlands in the Great Lakes Plain ecological region of New York. It is the southernmost of the marshes created by the extensive barrier beaches forming the eastern shore of Lake Ontario. The large size, ecological diversity, and lack of human disturbance of Deer Creek Marsh are important factors contributing to the fish and wildlife values of this area.

Deer Creek Marsh provides suitable habitats for a full complement of wetland wildlife species. Studies of the area have documented at least 55 species of breeding birds, 11 species of mammals, 6 species of reptiles, and 6 species of amphibians using the wetland, beach, and fringe areas. Deer Creek Marsh is a very productive nesting area for waterfowl and other marsh birds, including pied-billed grebe, green-backed heron, American bittern, least bittern (SC), mallard, black duck, blue-winged teal, wood duck, northern harrier (T), turkey vulture, Virginia rail, sora, common moorhen, black tern (SC), belted kingfisher, marsh wren, common yellowthroat, red-winged blackbird, and swamp sparrow. Sedge wrens (SC) have also been reported in Deer Creek Marsh, but breeding has not been documented since at least 1980. Concentrations of waterfowl use the area for feeding and nesting during spring and fall migrations, but the extent of their use is limited by the lack of open water areas. Deer Creek Marsh supports sizeable populations of several furbearer species, including muskrat, beaver, raccoon, and mink. Other wildlife species occurring in the area include white-tailed deer, snapping turtle, northern water snake, bullfrog, and wood frog.

Deer Creek supports a relatively small, but significant warmwater fish community, with at least 11 species documented in the area. Resident fishes in Deer Creek include brown bullhead, redbfin pickerel, northern pike, yellow perch, and largemouth bass. The creek is also a locally important spawning area for Lake Ontario fish populations, such as alewife, smelt, and brown bullhead. White sucker, smallmouth bass, and rock bass, occur in Deer Creek, but spawning generally occurs upstream from the marsh, in faster moving waters. Forage fish species found in the area include banded killifish and Johnny darter.

The abundance and diversity of fish and wildlife species in Deer Creek Marsh provide many potential opportunities for human use of the area. Access to the marsh for passive recreational uses is available from several points in the Wildlife Management Area, and from Brennan Beach Campground (by permission only). Hunting, fishing, trapping, and informal nature study attract a significant number of Oswego County residents and campers to the area. Of these activities, waterfowl hunting is one of the most important, attracting many sportsmen from the Syracuse metropolitan 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 substantially degrades water quality, increases turbidity or sedimentation, reduces water levels, alters flows, or increases water level fluctuations in Deer Creek Marsh would adversely affect a variety of fish and wildlife species. Discharges of sewage or stormwater runoff containing sediments or chemical pollutants (including fertilizers, herbicides, or insecticides) could adversely impact on fish and wildlife resources of the area. Elimination of wetland habitats, or further human encroachment into the area, as a result of dredging, filling, construction of roads, or motorboat access development, would severely reduce its value to fish and wildlife. However, habitat management activities, including water level management or expansion of shallow open water areas, may be designed to maintain or enhance populations of certain fish or wildlife species. Adequate drainage of the southern portion of the marsh should be provided through filled areas, by installation and maintenance of culverts, if necessary. Any significant disturbance of Deer Creek between March and July when most warmwater fish spawn, would be especially detrimental. Barriers to fish migration in the creek, whether physical or chemical, would have significant effects on fish populations within the marsh and in connected waters. Existing areas of natural vegetation bordering Deer Creek Marsh should be maintained for their value as cover for wildlife, perch sites, and buffer zones. In particular, the integrity of the sand dunes bordering Deer Creek Marsh must be maintained, by stabilizing vegetative cover and restricting human uses, to protect the fish and wildlife habitat. Incompatible disturbance of the area, including use of motorized vehicles (including boats), camping, and swimming should be controlled through enforcement of existing Wildlife Management Area regulations.