COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Calf Island**

Designated: **August 15, 1993**

County(ies): **Jefferson**

Town(s): **Hounsfield**

7½' Quadrangle(s): **Stony Point, NY; Point Peninsula, NY; Galloo Island, NY; or NOAA Nautical Chart No. 14802**

| Score | Criterion |
|---|---|
| **25** | Ecosystem Rarity (ER)<br>An isolated and undisturbed island and extensive shoal area; unusual in the Great Lakes Plain ecological region. |
| **0** | Species Vulnerability (SV)<br>No endangered, threatened or special concern species are known to reside in the area. |
| **18** | Human Use (HU)<br>Shoals support a recreational fishery for smallmouth bass of statewide importance, and county level commercial fishery for perch and bullhead. Additive division: 16 + 4/2 = 18 |
| **6** | Population Level (PL)<br>Concentrations of colonial waterbirds, waterfowl, and shorebirds using the island are unusual in the eastern Lake Ontario Plain ecological subzone. Geometric mean: $(4x9)^{½} = 6$. |
| **1.2** | Replaceability (R)<br>Irreplaceable. |

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

= **59**

**DESIGNATED HABITAT: CALF ISLAND**

HABITAT DESCRIPTION:

Calf Island is located in eastern Lake Ontario, approximately one-half mile southwest of Stony Island, in the Town of Hounsfield, Jefferson County (7.5' Quadrangles: Point Peninsula, NY; Stony Point, NY; and Galloo Island, NY; or NOAA Nautical Chart No. 14802). The island is a tilted limestone shelf, approximately 34 acres in size, with a thin layer of soil. Calf Island contains a relatively large inland pond and wetland area, and approximately 25% cover of second-growth hardwoods and shrubs. The fish and wildlife habitat includes the surrounding underwater shoals to a depth of approximately 20 feet below mean low water (a total area of approximately 600 acres). Calf Island is owned by Phillips Petroleum Company and is subject to minimal human disturbance.

FISH AND WILDLIFE VALUES:

Calf Island is one of very few uninhabited islands in eastern Lake Ontario. The island provides an undisturbed upland environment and underwater shoal area that are uncommon throughout the Great Lakes Plain ecological region of New York. Consequently, the island is an important refuge for various bird species nesting in or migrating through the eastern Lake Ontario area. Calf Island is regularly visited by double-crested cormorants, black-crowned night herons, and gulls, nesting on nearby Little Galloo Island. The island serves as a feeding and roosting area for these birds, and as a refuge during storms, for many species waterfowl and shorebirds. Large concentrations of scaup, bufflehead, grebe, and American black duck often occur in the area during fall migration.

The extensive littoral zone around Calf Island is prime spawning habitat for smallmouth bass, generally between depths of 2 to 20 feet. Lake trout, which are being restored to Lake Ontario through stocking by the NYSDEC, are also known to use these shoals as an important spawning area. Other warmwater fish species that spawn in the area include walleye, rock bass, pumpkinseed, yellow perch, white perch, and bullhead.

Many New York residents and visitors from out of state use the Lake Ontario Islands area, including Calf Island, for recreational fishing. Other recreational uses here include waterfowl hunting and birdwatching by local residents. There is a commercial fishery in the vicinity for yellow perch, white perch, and bullhead.

IMPACT ASSESSMENT:

A **habitat impairment test** must be applied to 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** 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:
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> - destroy the habitat; or,
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> - 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 appplying 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 activities that would degrade water quality, increase temperature or turbidity, or alter water depths around Calf Island, especially during fish spawning periods (March-July for most warmwater species, and September-October for lake trout), could adversely affect the fisheries in this area. Dredging and disposal of spoil material in the shoals surrounding the island could be very detrimental. Any activity that may disrupt the use of Calf Island as a feeding and resting area by migratory birds, or use as a nesting site by colonial birds, could adversely affect the wildlife resources of this area. Increased human disturbance or loss of woody vegetation would be especially significant. Introduction of mammalian species could also affect suitability of the habitat for nesting bird species.