

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Gull and Bass Islands**

Designated: **August 15, 1993**

County(ies): **Jefferson**

Town(s): **Hounsfield, Henderson**

7½' Quadrangle(s): **Henderson Bay, NY**

<u>Score</u>	<u>Criterion</u>
25	Ecosystem Rarity (ER) Two isolated and relatively undisturbed islands and associated shoal areas; uncommon in the Great Lakes Plain ecological region.
0	Species Vulnerability (SV) No endangered, threatened or special concern species are known to reside in the area.
16	Human Use (HU) Shoals support a recreational fishery for smallmouth bass of statewide importance.
6	Population Level (PL) Concentrations of colonial waterbirds using the islands is unusual in the Eastern Ontario Plain ecological subzone. Geometric mean: $(4 \times 9)^{1/2} = 6$.
1.2	Replaceability (R) Irreplaceable

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

= **56**

DESIGNATED HABITAT: GULL AND BASS ISLANDS

HABITAT DESCRIPTION:

Gull and Bass Islands are located in eastern Lake Ontario, approximately two miles southwest of the Village of Sackets Harbor, in the Towns of Hounsfield and Henderson, Jefferson County (7.5' Quadrangle: Henderson Bay, NY). Gull Island is approximately 2 acres in size and has been owned and managed by the NYSDEC as a Unique Area since 1982. Bass Island is approximately 3 acres in size and is owned by St. Pious the Tenth, Inc. for use as a religious retreat. These islands are relatively low-lying, with a vegetative cover dominated by shrubs and grasses. Habitat disturbances at Gull and Bass Islands are minimal. 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 340 acres).

FISH AND WILDLIFE VALUES:

Gull and Bass Islands are two of the very few uninhabited islands in eastern Lake Ontario. These islands, and their associated shoal areas, provide relatively undisturbed upland habitats and productive littoral zones that are uncommon throughout the Great Lakes Plain ecological region of New York. Gull and Bass Islands are especially important as a feeding and staging area for various colonial waterbirds nesting on Little Galloo Island. Gull Island is used by a larger number of birds than Bass Island, presumably because the former is uninhabited, whereas the latter has traditionally had seasonal visitors.

Historically (i.e., between 1930 and 1955), Gull Island served as a major nesting site for several uncommon bird species that now nest on Little Galloo Island. In 1945, the first known breeding by double-crested cormorants in New York occurred on Gull Island, and in 1936, the first nesting of ring-billed gulls in New York was reported from the island. In 1936, common terns (T) also nested on Gull Island. The recent decline in use of these islands for nesting may be attributed to changing vegetative cover due to natural succession, and to expansion of ring-billed gull populations. However, it is possible that artificial nest structures or other management techniques could help to restore the black-crowned night heron to Gull and Bass Islands.

The littoral zones surrounding all of the eastern Lake Ontario islands are important for sustaining a substantial smallmouth bass population. Other warmwater fish species using the area include brown bullhead, yellow perch, and a variety of panfish. Lake trout are also known to be using the shoals around these islands as spawning grounds.

Recreational fishing is very important in this area. Fishermen from across New York and out of state are attracted to the area because of its renowned smallmouth bass fishery. These islands are an attraction for local birdwatchers during the breeding season, and some waterfowl hunting occurs in this area.

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:

- 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 activities that would degrade water quality, increase temperature or turbidity, or alter water depths around Gull and Bass Islands, especially during fish spawning periods (March-July for most warmwater species, and September-November for lake trout), could adversely affect the fisheries in this area. Dredging and disposal of spoil material in the shoals surrounding the islands could be very detrimental. Any activity that may disrupt the use of Gull and Bass Islands 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 adversely affect suitability of the habitat for nesting bird species. On the other hand, there is considerable potential for increasing the suitability of these islands for colonial waterbird nesting through various management techniques.