

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Chippewa Bay**
 Designated: **May 15, 1994**
 County(ies): **St. Lawrence**
 Town(s): **Hammond**
 7½' Quadrangle(s): **Chippewa Bay, NY**

Score **Criterion**

- 40** Ecosystem Rarity (ER)
 Largest shallow, open water bay with substantial littoral zone in St. Lawrence County. High quality area, somewhat protected from exposure. The only habitat type of its kind in the St. Lawrence Plains ecological region and one of the only two examples of this ecosystem type in New York State. Geometric mean: $(25 \times 64)^{1/2} = 40$.
- 33** Species Vulnerability (SV)
 Common tern (T) feeding area near or adjacent to five documented tern nesting sites. Nesting by common loons (SC) on islets in the bay. Used as a feeding area by bald eagles (E) prior to ice cover; use is not available throughout winter although roosting at several sites has been documented. Additive division:
 $25 + 16/2 = 33$.
- 15** Human Use (HU)
 Warmwater fishery attracts participants year round between the Thousand Islands region and State levels. Geometric mean:
 $(9 \times 16)^{1/2} = 12$. Also waterfowl hunting and trapping significant at the county level. Additive division: $12 + 4/2 + 4/4 = 15$.
- 4** Population Level (PL)
 Muskellunge nursery habitat has been documented at two locations, other suitable nursery sites may be in the bay but have not been evaluated. Warmwater fish populations are unusual in the county. Migratory staging of waterfowl, shorebirds, and passerines are unusual at the county level.
- 1.2** Replaceability (R)
 Irreplaceable.

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

= **110**

DESIGNATED HABITAT: CHIPPEWA BAY

HABITAT DESCRIPTION:

Chippewa Bay a large shallow open water bay with substantial littoral zone, located at the mouths of Chippewa Creek and Crooked Creek, in the Town of Hammond, St. Lawrence County (7.5' Quadrangle: Chippewa Bay, NY). The fish and wildlife habitat encompasses the whole bay and extends from Chippewa Point south to just west of Indian Point. Chippewa Bay consists of islands, shallows, shoals, and emergent marsh totalling approximately 1900 acres. The habitat also includes Blind Bay, located at the northernmost section of the bay. Chippewa bay contains many small islands as well as a relatively large island, called Oak Island, which is situated in the south-central portion of the bay. The Thousand Islands Land Trust holds conservation easements for most of Oak Island. Among the many smaller islands in the bay, all are privately owned except for a portion of Cedar Island, which is a State Park. Vegetation on the islands range from forest to shrubland to sparse shoreline outcrop communities. The bay is fed by two warmwater streams and wetland complexes, Chippewa Creek to the north and Crooked Creek to the south.

Upland areas bordering the bay are largely rural in nature, including forestland, abandoned fields, active agricultural lands, and low density residential development.

FISH AND WILDLIFE VALUES:

Chippewa Bay is the largest coastal shallow water ecosystem area in St. Lawrence County. The extensive littoral zones have a high degree of interspersion of wetland vegetation, spits and shoals, deeper open water, and several island upland types, creating favorable conditions for many fish and wildlife species. Human disturbances in the bay are limited to recreational boating, fishing, hunting, and camping. Chippewa Bay has been identified as one of four documented tern feeding areas in St. Lawrence County. The bay is near or adjacent to five documented tern nesting sites. Bald eagles (E) have been noted feeding in the bay prior to ice cover. Although the bay is not available for feeding during ice cover, eagles have been documented roosting at several island and headland sites throughout the winter. The area also supports nesting common loons (SC) on or near islets in the bay.

Chippewa Bay is considered one of about ten principal areas on the St. Lawrence River that are used by concentrations of waterfowl (including mallard, blue-winged teal, American black duck, gadwall, redhead, scaup, and canvasback) for feeding and resting during spring and fall migrations. The area is used for migratory staging by shorebirds, passerines, and to some extent raptors. Waterfowl and other birds nesting in marshes that fringe islands in the bay include: mallard, blue-winged teal, common gallinule, marsh wren, red-winged blackbird, swamp sparrow, song sparrow, and yellow warbler. Chippewa Bay provides foraging habitat for great blue herons which nest in a dense rookery on nearby Ironsides Island. Green heron, and osprey (T), often feed in the area during the breeding season, but the extent of use by these birds is not well documented.

The extensive shoals and beds of submergent and aquatic vegetation in Chippewa Bay are valuable as very high quality fish nursery habitat. Muskellunge nursery habitat has been documented at Chippewa Point and Cedar Islands. Other suitable nursery sites for muskellunge may exist in the bay, but have not been evaluated. Chippewa Bay is a productive fisheries habitat for a variety of other species including: northern pike, smallmouth bass, brown bullhead, white sucker, redbfin pickerel, rock bass, black crappie, pumpkin seed, bluegill, and perch. The extent to which other wildlife species use the area has not been adequately documented.

The abundance and diversity of fish and wildlife species in Chippewa Bay provide substantial opportunities for various human uses of the area. Access to the bay for recreational uses is available at a number of

locations. Year round recreational fishing attracts the greatest number of visitors to the area. Waterfowl hunting also attracts some local residents to the 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 activity that would substantially degrade water quality, increase turbidity or sedimentation, reduce or increase water levels, alter flows, or increase water level fluctuations in Chippewa Bay could 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) may result in adverse impacts on fish and wildlife resources in the area. Spills of oil or other hazardous substances are a potentially serious threat to fish and wildlife in Chippewa Bay, and every effort should be made to prevent such contamination. Elimination of wetland habitats, or significant human encroachment into the area, through dredging, filling, construction of roads, waste disposal, marina construction or expansion, or extensive shoreline development could severely reduce the bay's value to fish and wildlife. Development of motorboat access to the area should be confined to existing sites to minimize potential disturbance of fish and wildlife species that may be adversely affected by human activities. Habitat disturbances would be especially detrimental during fish spawning and nursery periods (March - July for most warmwater species) and wildlife breeding seasons (April - July for most species). Existing areas of natural vegetation bordering Chippewa Bay, and mature tree stands on islands should be maintained for their value as cover for wildlife, bald eagle roosting and perching sites, and buffer zones.