

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Wilson Hill Island - Tucker Terrace Area**

Designated: **May 15, 1994**

County(ies): **St. Lawrence**

Town(s): **Louisville**

7½' Quadrangle(s): **Massena, NY; Louisville, NY**

Score **Criterion**

- 9** Ecosystem Rarity (ER)
A shallow littoral embayment with moderate amounts of submerged aquatic vegetation and substrates composed of sand, gravel, and rocks; one of only four similar embayment complexes in the county.
- 25** Species Vulnerability (SV)
Common tern (T) feeding area adjacent to three nesting sites supporting approximately 160 pairs of birds.
- 4** Human Use (HU)
Contributes to a sport fishery of county level importance. Also a locally important waterfowl hunting area.
- 4** Population Level (PL)
Muskellunge nursery habitat has been documented, unusual at the county level.
- 1.2** Replaceability (R)
Irreplaceable.
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SIGNIFICANCE VALUE = [(ER + SV + HU + PL) X R]

= **50**

DESIGNATED HABITAT: WILSON HILL ISLAND - TUCKER TERRACE AREA

HABITAT DESCRIPTION:

Wilson Hill Island - Tucker Terrace Area is located in the lower St. Lawrence River, approximately three miles west of the City of Massena, in the Town of Louisville, St. Lawrence County (7.5' Quadrangles: Louisville, NY; Massena, NY). The fish and wildlife habitat is an approximate 500 acre area of shallows just east of the Wilson Hill Wildlife Management Area dike and encompasses the Sand Islands. Water depths in this habitat range from 3 to 13 feet. Bottom substrates consist of rocks, gravel, and sand with some submerged vegetation. Sand Islands are small undeveloped islands, with mostly open and shrubby vegetation. Sand Islands are privately owned.

FISH AND WILDLIFE VALUES:

Wilson Hill Island - Tucker Terrace Area support a variety of fish and wildlife values. The shallow embayment receives little tributary inflow, has little adjacent emergent wetland, and provides a moderately protected environment. These relatively protected bays are uncommon in the lower reaches of the St. Lawrence River, with only four other ecologically similar areas in the county. This shallow area supports warmwater fish species including northern pike, brown bullhead, smallmouth bass, largemouth bass, yellow perch, pumpkinseed and a variety of forage fish species. Though not as well documented, the area also supports walleye.

Of special significance, however, is the use of this area by muskellunge. Repeated sampling from 1976 through 1987 has documented either adult muskellunge in spawning condition or young-of-year muskellunge in this broad, shallow embayment. The consistent evidence of annual muskellunge use of these bays along with the number of young indicate that this nursery area supports and contributes to the area's adult muskellunge population. The adult muskellunge population is the basis of a sports fishery which attracts anglers from throughout the Thousand Islands major recreational region of New York State.

Wilson Hill Island - Tucker Terrace Area also provides feeding habitat for common terns (T) which depend on concentrations of small forage fish. The use of this area for feeding is well documented. Three tern colonies (supporting as many as 160 pairs of birds) are located adjacent to the bay, with the entire area falling within a one mile range of these colonies. This area is one of the four most important common tern (T) feeding grounds in St. Lawrence County (the other areas are Wilson Hill WMA, Coles Creek, and Chippewa Bay). During the breeding season, Canada goose and other waterfowl nest and on the islands and feed in this area. The area is also used during each spring and fall by migrating waterfowl populations. In particular, dabbling ducks such as mallard, American black duck, and blue-winged teal feed in these productive shallows.

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, significantly reduce water levels during spawning season, or increase short term water level fluctuations at Wilson Hill Island - Tucker Terrace Area could adversely affect fish and wildlife use of this area. 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 Wilson Hill Island - Tucker Terrace Area, and every effort should be made to prevent such contamination. 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 area'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. Habitat disturbances would be especially detrimental

during fish spawning and nursery periods (March - July for most warmwater species. Existing areas of natural vegetation bordering Wilson Hill Island - Tucker Terrace Area should be maintained for their values as cover for wildlife, perching sites, and buffer zones.