

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Wilson Hill Wildlife Management Area**

Designated: **May 15, 1994**

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

Town(s): **Louisville**

7½' Quadrangle(s): **Louisville, NY-ONT**

Score Criterion

- 20** Ecosystem Rarity (ER)
An extensive shallow water area, subject to minimal human disturbance; unusual in the St. Lawrence Plains, but rarity is reduced by artificial creation of the habitat.
Geometric mean: $(16 \times 25)^{1/2} = 20$.
- 37** Species Vulnerability (SV)
Northern harrier (T) and least bittern (SC) nesting; blue-spotted salamander (SC) also present.

Additive division: $25 + 16/2 + 16/4 = 37$.
- 21** Human Use (HU)
Hunting and trapping opportunities attract considerable use by residents of New York State; also of scientific value as a major goose banding site in the region.
Additive division: $16 + 9/2 = 21$.
- 9** Population Level (PL)
Nesting waterfowl concentrations are unusual in the St. Lawrence Plains ecological region.
- 1.0** Replaceability (R)
Uncertain of ability to replace; cost may be prohibitive.

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

= **87**

DESIGNATED HABITAT: WILSON HILL WILDLIFE MANAGEMENT AREA

HABITAT DESCRIPTION:

Wilson Hill Wildlife Management Area is located along the lower St. Lawrence River (Lake St. Lawrence), approximately seven miles west of the Village of Massena, in the Town of Louisville, St. Lawrence County (7.5' Quadrangle: Louisville, N.Y.-Ont.). The fish and wildlife habitat encompasses approximately 3,400 acres, including a very large, shallow freshwater impoundment, upland fields and woodlots, shallow river areas, and many small islands. This entire area is publicly owned and administered by the NYSDEC. Most of the open water areas at Wilson Hill were created when the St. Lawrence River level was raised for development of the St. Lawrence Seaway. Water levels within the impounded area are generally less than 4 feet deep, and are regulated for wildlife management purposes. Much of the land area bordering Wilson Hill Wildlife Management Area is rural in nature, including scattered residences, active agriculture, and abandoned fields. An exception is the north shore of Wilson Hill Island, which has been extensively developed with seasonal camps and permanent residences along the St. Lawrence River.

FISH AND WILDLIFE VALUES:

Wilson Hill Wildlife Management Area contains one of the largest shallow water areas along the shoreline of the St. Lawrence River. Although current habitat conditions are largely man-made, the area has become a very important fish and wildlife habitat. Water level stability has resulted in unique lower river habitat values that are attractive to significant numbers of fish and wildlife. The diked area can also be considered an important refugium for waterfowl from hazardous materials spills in the area.

Wilson Hill Wildlife Management Area is a very productive nesting area for a variety of waterfowl and other marsh birds. It is especially well known for its large nesting populations of Canada geese (as many as 100 pairs in some years), which occupy many of the islands in the area. An unusual diversity of duck species also nest at Wilson Hill, including mallard, American black duck, gadwall, blue-winged teal, American wigeon, wood duck, redhead, ring-necked duck, lesser scaup, and possibly pintail and hooded merganser. Other bird species reported breeding in the area include pied-billed grebe, green-backed heron, least bittern (SC), American bittern, northern harrier (T), Virginia rail, common moorhen, ruffed grouse, turkey, killdeer, common snipe, spotted sandpiper, belted kingfisher, marsh wren, black-billed cuckoo, brown thrasher, red-winged blackbird, and swamp sparrow. Wilson Hill also serves as a resting and feeding area for waterfowl, passerines, gulls, terns and other shorebirds during spring and fall migrations (March - May and September - November, respectively). Some winter roosting by bald eagles has been observed in mature tree stands on Nichol's and Bradford Islands, but the importance of this area to these birds has not been adequately documented. Other wildlife species occurring in the Wildlife Management Area include muskrat, raccoon, white-tailed deer, eastern cottontail, snapping turtle, painted turtle, various frogs, blue-spotted salamander (SC), and many nesting passerine bird species.

The diversity and abundance of wildlife in this large, publicly owned area provide substantial opportunities for human use of the habitat. Waterfowl hunting is especially popular, attracting many visitors from throughout New York State. In 1985, almost half of the individuals who utilized the area were from outside of St. Lawrence and Jefferson Counties. Wilson Hill is one of the major muskrat trapping areas in the St. Lawrence River. In addition to these recreational uses, the NYSDEC conducts an intensive Canada goose banding effort in the area each summer to collect data on regional population dynamics of this species.

Fisheries resources within the Wilson Hill Wildlife Management Area are of limited significance with one exception. Young of year muskellunge have been documented near the west shores of Bradford Island, indicating that the area serves as nursery habitat for this species. Species commonly found in the St. Lawrence River, such as brown bullhead and northern pike, may occur in the area, but no unusual

concentrations are present. Of particular note, is the concentration of carp in the areas outside the impoundment. This species supports considerable recreational use for bowfishing; as of 1984, the world record catch of carp (6 tons taken in one weekend) was from the Wilson Hill area. The fish community within The impounded area serves as a fish nursery and consists largely of yellow perch, brown bullhead, and various minnow species.

IMPACT ASSESSMENT:

A **habitat impairment test** must be applied 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** 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.

Despite its status as a Wildlife Management Area, Wilson Hill's fish and wildlife habitats remain vulnerable to a number of potential impacts. Surrounding land use is an important factor potentially affecting the wildlife resources of this area. Encroachment of human disturbance, including commercial or residential development, could have significant impacts on species using the area. Discharges of polluted runoff (including fertilizers, herbicides, insecticides) from adjacent areas could seriously degrade the wetland and aquatic habitats in Wilson Hill Wildlife Management Area. Spills of oil or other hazardous substances are a potentially serious threat to fish and wildlife in the open river area, and every effort should be made to prevent such contamination. Any activity which would reduce the ability to control water levels at this refuge would hamper beneficial management practices and result in impairment of the habitat. Habitat management activities may be desirable to maintain or enhance populations of certain fish or wildlife species. For example, the fisheries potential of the impoundment may be increased by providing seasonal open access to the river or by creating deeper water areas. However, fisheries management activities should be carefully evaluated with respect to timing, geographic scope of alterations, and target species before any departure from existing conditions is pursued. Provision of public access may be desirable for compatible human uses of the Wilson Hill Wildlife Management Area, however access may also result in significant impairment of the habitat value and is secondary in importance when considered along with protection of fish and wildlife. Exclusion of public access may be required for protection of vulnerable species from disturbance.