

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Goose Bay and Cranberry Creek**

Designated: **August 15, 1993**

County(ies): **Jefferson**

Town(s): **Alexandria**

7½' Quadrangle(s): **Chippewa Bay, NY; Redwood, NY; Alexandria Bay, NY**

<u>Score</u>	<u>Criterion</u>
64	Ecosystem Rarity (ER) One of the largest, shallow, riverine bay and wetland ecosystems on the St. Lawrence River; subject to minimal disturbance; rare in New York State.
42	Species Vulnerability (SV) Blanding's turtle (T) reside in the area; also nothern harrier (T) and least bittern (SC) nesting. Additive division: $25 + 25/2 + 16/4 = 42$.
12	Human Use (HU) A major recreational fishing area in the Thousand Islands Region; also an important waterfowl hunting and muskrat trapping area in Jefferson County. Additive division: $9 + 4/2 + 4/4 = 12$.
9	Population Level (PL) One of the major concentration areas for migratory birds, including waterfowl, in the St. Lawrence Plains ecological region; also a major warmwater fisheries production area in the ecological region.
1.2	Replaceability (R) Irreplaceable

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

= **152**

DESIGNATED HABITAT: GOOSE BAY AND CRANBERRY CREEK

HABITAT DESCRIPTION:

Goose Bay and Cranberry Creek are located along the middle St. Lawrence River, approximately three miles northeast of the Village of Alexandria Bay, in the Town of Alexandria, Jefferson County (7.5' Quadrangles: Chippewa Bay, NY; Alexandria Bay, NY; and Redwood, NY). The fish and wildlife habitat encompasses approximately 2,000 acres, including the open waters of Goose Bay, the lower one and one-quarter miles of Cranberry Creek (up to Swan Hollow Road), and extensive wetland areas which are an integral part of these aquatic ecosystems. Goose Bay is a very large, shallow (generally less than 6 feet deep below mean low water), sheltered bay on the mainland shore of the St. Lawrence River. Beds of submergent aquatic vegetation occur throughout the bay, which has a bottom of soft mud and organic matter. Goose Bay contains islands of various sizes which shelter much of the area from prevailing winds and wave action.

Cranberry Creek is a sizeable, low gradient, warmwater stream, which empties into the south end of Goose Bay. The drainage area of the creek is small, and little flow is discernible during the summer. Above N.Y.S. Route 12, the creek flows through an emergent marsh (predominantly cattail) covering approximately 130 acres.

Other major wetland areas associated with Goose Bay include: the mouth of Cranberry Creek; Point Marguerite Marsh, an approximate 90 acre emergent wetland located west of Island Number 9; and, North Goose Bay Marsh (also known as Kring Point Road Marsh), an approximate 300 acre area at the northeastern end of Goose Bay. The latter area has a diverse mixture of wetland and upland plant communities. Water levels throughout Goose Bay and Cranberry Creek are generally continuous with those of the St. Lawrence River, although fluctuations in the creek may be affected by a small water control structure at Route 12. Except for a small State-owned parcel (Cranberry Creek Wildlife Management Area), the entire area is privately owned, and remains in a relatively undisturbed condition.

Surrounding uplands are shallow to bedrock and predominantly forested. Cottage developments have avoided most of the wetland sites and are concentrated only at the hamlet of Goose Bay. Habitat disturbances are generally limited to the presence of road crossings, use of motorboats in the area, sewage discharges from adjacent residences, and the occurrence of an oil spill in the vicinity in 1976.

FISH AND WILDLIFE VALUES:

Goose Bay and Cranberry Creek comprise one of the most important coastal freshwater wetland complexes in New York State. Goose Bay is the second largest bay along the New York shoreline of the St. Lawrence River, and the extensive wetlands around its periphery are among the most significant in the region. Goose Bay and Cranberry Creek remain in an unusual state of preservation, and have a high degree of interspersion of wetland communities, productive littoral zones, and uplands. Consequently, this area supports large concentrations of many fish and wildlife species, and provides outstanding opportunities for human use of these resources.

Goose Bay and Cranberry Creek are a major concentration area for migratory birds. Extensive wetlands and undisturbed shorelines throughout this area serve as productive nesting habitats for a variety of waterfowl and other marsh birds, including pied-billed grebe, green heron, American bittern, least bittern (SC), mallard, American black duck, blue-winged teal, wood duck, Canada goose, northern harrier (T), Virginia rail, sora, common gallinule, belted kingfisher, marsh wren, red-winged blackbird, and swamp sparrow. Substantial numbers of dabbling ducks use the area for breeding and post-breeding activities. The marshes and shallows are important feeding areas for great blue herons nesting on nearby Ironsides Island, and for common terns (T) nesting in the vicinity. Concentrations of waterfowl, herons, raptors, and shorebirds also use the area

for feeding and resting during spring and fall migrations. This area is one of about five principal water areas on the St. Lawrence River used by dabbling ducks during migration.

A diversity of non-avian wildlife species also occur in Goose Bay and Cranberry Creek. Species inhabiting the area include furbearers, such as raccoon, mink, beaver, and muskrat, various species of frogs, northern water snake, snapping turtle, painted turtle, and possibly spotted salamander (SC). Goose Bay and Cranberry Creek are especially significant as a documented concentration area for Blanding's turtle (T), one of only two such areas in New York's portion of the St. Lawrence River. These turtles have been captured or observed at several locations in the area, ranging from the northeastern end of North Goose Bay Marsh, to upper Cranberry Creek, above N.Y.S. Route 12.

Goose Bay and Cranberry Creek are extremely valuable as fish spawning and nursery habitats. These areas comprise one of the most productive fisheries habitats along the St. Lawrence River, especially for northern pike, brown bullhead, largemouth bass, white sucker, redbfin pickerel, and a variety of panfish, such as pumpkinseed, rock bass, bluegill, and black crappie. Muskellunge may also spawn in the bay, but this has not been confirmed. Cranberry Creek Marsh has all the characteristics of a good production area for northern pike, including flooded shallow areas, a population of fathead minnows (an important prey species), and dead and decaying plant material on the stream bottom. Spawning by most species is concentrated in shoreline areas and in lower Cranberry Creek, but the entire Goose Bay area is used as nursery and feeding habitat.

The abundance and diversity of fish and wildlife species in Goose Bay and Cranberry Creek provide substantial opportunities for various human uses of the area. Access to the bay and wetlands for recreational uses is available from several locations, including Kring Point State Park, the hamlet of Goose Bay, road crossings, and Cranberry Creek Wildlife Management Area (located along Swan Hollow Road). Recreational fishing attracts the greatest number of visitors to the area. Goose Bay is one of the most popular fishing areas in the Thousand Islands region, because of its productive fisheries for bass, pike, bullhead, and panfish. Fishing pressure is concentrated in Goose Bay proper (including the mouth of Cranberry Creek), and continues throughout the year as a result of the high quality ice fishery in the area. Waterfowl hunting, trapping, and informal nature study attract a significant number of Jefferson County residents to the area, with considerable use above and below N.Y.S. Route 12.

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 water levels, alter flows, or increase water level fluctuations in Goose Bay or Cranberry Creek could adversely affect the biological productivity of this unique area. Discharges of sewage or stormwater runoff containing sediments or chemical pollutants (including fertilizers, herbicides, or insecticides) may result in significant impacts on fish and wildlife resources of the area. Spills of oil or other hazardous substances are a potentially serious threat to fish and wildlife in Goose Bay and Cranberry Creek, and every effort should be made to prevent such contamination. Elimination or disturbance of wetland habitats, including submergent aquatic vegetation, through dredging, filling, construction of roads, or shoreline property development, would result in a direct loss of valuable habitat area. Activities that would subdivide or cause significant human encroachment into sizeable wetland areas should not be allowed. 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). However, habitat management activities, such as water level management or creation of turtle nesting areas, may be designed to maintain or enhance populations of certain fish or wildlife species. Barriers to fish migration in Cranberry Creek, whether physical or chemical, would have significant effects on fish populations throughout the Goose Bay area. Existing areas of natural vegetation bordering Goose Bay and Cranberry Creek should be maintained for their value as cover for wildlife, perching sites, and buffer zones.