

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Dexter Marsh and Black River**

Designated: **August 15, 1993**

County(ies): **Jefferson**

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

7½' Quadrangle(s): **Sackett's Harbor, NY; Dexter, NY**

<u>Score</u>	<u>Criterion</u>
25	Ecosystem Rarity (ER) An extensive, relatively undisturbed, bay-head complex, unusual in the Great Lakes Plain. Includes one of four major New York tributaries to Lake Ontario.
16	Species Vulnerability (SV) Black tern (SC) nesting and feeding area.
25	Human Use (HU) Salmonid fishery attracts anglers from outside New York State in significant numbers; other recreational uses are significant in the eastern Ontario-St. Lawrence region.
9	Population Level (PL) Concentrations of salmonids, marsh-nesting birds, and migrant waterfowl are unusual in the Great Lakes ecological region.
1.2	Replaceability (R) Irreplaceable.

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

= **90**

DESIGNATED HABITAT: DEXTER MARSH AND BLACK RIVER

HABITAT DESCRIPTION:

Dexter Marsh is located at the northeast end of Black River Bay, on the eastern shore of Lake Ontario, in the Towns of Brownville and Hounsfield, Jefferson County (7.5' Quadrangles: Dexter, NY; and Sackett's Harbor, NY). The fish and wildlife habitat is an approximate 2,000 acre wetland complex located at the confluence of the Black River, Perch River, and Muskalonge Creek. Dexter Marsh is the result of the filling of the head of Black River Bay by deposition of sediments and organic matter from these tributaries, supplemented by detritus blown up the bay from Lake Ontario. Dexter Marsh contains extensive areas of emergent wetland vegetation, dominated by cattail and wild rice. Natural open water channels meander through the marsh, often reaching depths of 10 feet or more. The remainder of the area has water depths varying from 2-8 feet, depending on Lake Ontario water levels.

Most of this wetland area is located within the NYSDEC's Dexter Marsh Wildlife Management Area, and experiences relatively little human disturbance. Also included in the habitat is an approximate two mile segment of the Black River, extending from Dexter Marsh proper to the dam in the City of Watertown. The Black River is a large, warmwater river, with a bedrock substrate (in free-flowing sections), and a drainage area of over 1,900 square miles of farmland and forests. The river has been dammed at many upstream locations for generation of hydroelectric power. The land area surrounding Dexter Marsh is rural in nature, including active agricultural lands, abandoned fields, woodlots, and low density residential development. However, seasonal camps and permanent residences have been built along much of the Black River shoreline. Public access to the area is available from two State boat launching sites (near the mouths of Perch River and Muskalonge Creek) and one large access facility maintained by the Village of Dexter, in addition to private access facilities on Lake Ontario and the Black River.

FISH AND WILDLIFE VALUES:

Dexter Marsh is an extensive, relatively undisturbed, bay-head wetland complex at the eastern end of Lake Ontario. The lack of protective barrier beaches allows the marsh vegetation to be buffeted by rigorous wave action, making this area somewhat unique among Great Lakes coastal marshes in New York. These qualities have been recognized through designation of Dexter Marsh as a National Natural Landmark by the U.S. Department of the Interior. The Black River is one of four major New York tributaries to Lake Ontario, and functions as a major component of the habitat.

Dexter Marsh offers a unique combination of wetland and aquatic environments, providing valuable habitats for a variety of fish and wildlife species. Although there have been few documented studies of the area, Dexter Marsh is known to be a very productive nesting area for waterfowl and other marsh birds, including green heron, American bittern, Canada goose, mallard, blue-winged teal, wood duck, Virginia rail, common gallinule, black tern (SC), spotted sandpiper, belted kingfisher, marsh wren, common yellowthroat, red-winged blackbird, swamp sparrow, and song sparrow. A colony of black terns (SC) is located at the portion of Dexter Marsh south of the Black River mouth and extending to Muskalonge Bay. In 1989 there were an estimated 24 pairs of nesting birds. Survey work in 1990 and 1991 documented 12 and 49 pairs of nesting black terns, respectively. Large concentrations of waterfowl also use the area for feeding and resting during spring and fall migrations; large rafts of diving ducks (with several thousand birds), such as common goldeneye, mergansers, scaup, canvasback, and Canada goose often occur in Black River Bay, and use portions of Dexter Marsh extensively. Consequently, this is one of the most popular sites on eastern Lake Ontario for waterfowl hunting, with many permanent blinds built in the marsh. Although varying water levels and weather conditions affect hunter participation and success, overall use of the marsh has remained high. During warm winters and pre-ice conditions, winter waterfowl have been observed with 429 ducks and geese on average (2508 in peak year) from 1986 to 1991. Bald eagle (E) and osprey (T) are frequently seen

in the area during migration, but the extent to which these species utilize the habitat is not well known.

Dexter Marsh supports sizeable populations of several furbearing species, including muskrat, beaver, raccoon, and mink. Estimates of the number of muskrats trapped in the marsh during some years have exceeded several thousand animals. Dexter Marsh has provided excellent public trapping opportunities for many years, and is one of the most heavily trapped areas in the eastern Lake Ontario and St. Lawrence coastal regions.

Dexter Marsh is a productive fish spawning and nursery area, supporting concentrations of many warmwater species, such as northern pike, walleye, brown bullhead, yellow perch, rock bass, bluegill, pumpkinseed, white crappie, and largemouth bass. Dexter Marsh serves as a major reproductive habitat for fish populations throughout Black River Bay, and contributes significantly to the maintenance of Lake Ontario fisheries resources. In addition to the many resident species, concentrations of coho and chinook salmon, brown trout, and recently, Atlantic salmon, migrate from Lake Ontario into the Black River to spawn each fall (September - November, primarily), although reproduction is unsuccessful in most instances. Steelhead (lake-run rainbow trout) also migrate into the area during both a spring (late February - April) and fall spawning period. The salmonid populations in Dexter Marsh and the Black River are the result of an ongoing effort by the NYSDEC to establish a major salmonid fishery in the Great Lakes through stocking. In 1984, approximately 25,000 steelhead, 400,000 chinook salmon, and 25,000 coho salmon were released in the Black River, however, this area is now one of the sites for the restoration of Atlantic salmon, with a current stocking policy for this area of 75,000 Atlantic salmon and 75,000 steelhead. This is one of the major salmonid concentration areas on Lake Ontario. The Black River provides an outstanding salmonid fishery, attracting visitors from throughout New York State and beyond. Creel census data indicate that anglers from Canada and Pennsylvania make up approximately 20% of the anglers using this area. Much of the salmonid fishing pressure is concentrated near the base of the dam in Dexter, where large congregations of spawning fish occur. A fish ladder was completed at this site in 1989, and a fish ladder is now completed at the Glen Park dam, extending this valuable resource inland to the City of Watertown. Recreational fishing for warmwater species is also popular throughout Dexter Marsh and Black River; a significant number of Jefferson County residents use the area for smelt dipping as well as ice fishing for yellow perch and northern pike.

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 any part of Dexter Marsh (including the Black River) 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 adverse impacts on fish and wildlife resources of the area. Elimination of wetland habitats, or substantial human encroachment into the area, as a result of dredging, filling, construction of roads, or motorboat access development, could severely reduce its value to fish and wildlife. Because of the year-round fish and wildlife use of the area, dredging activities at any time of year may affect certain species, and should not be permitted outside of existing channel areas. Development of motorboat access into wetland areas could adversely affect fish and wildlife in a variety of ways, including increased human disturbance of the habitat during fish spawning and nursery periods (March - July for most resident warmwater species), and wildlife breeding seasons (April - July for most species). However, habitat management activities, including manipulation of wetland vegetation types, may be designed to maintain or enhance populations of certain fish or wildlife species.

Also of concern in this major Lake Ontario tributary are the potential effects of upstream activities, including flow alterations, stream bed disturbances, and discharges of industrial effluents. Development of new or expanding hydroelectric facilities should only be allowed with run-of-river operations. Barriers to fish migration in the Black River, whether physical or chemical, would have significant effects on fish populations in the area; the construction of a fish ladder at the dam in Dexter has had a major beneficial effect on upstream fisheries resources. Existing areas of natural vegetation bordering Dexter Marsh should be maintained for their value as cover for wildlife, perching sites, and buffer zones from human disturbances.