

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Sodus Bay**

Designated: **October 15, 1987**

County: **Wayne**

Town(s): **Sodus, Huron**

7½' Quadrangle(s): **Sodus Point, NY; Rose, NY**

<u>Score</u>	<u>Criterion</u>
20	Ecosystem Rarity (ER) One of the largest sheltered bay ecosystems on the Great Lakes, but rarity reduced by human disturbance. Geometric mean: $(16 \times 25)^{1/2}$
0	Species Vulnerability (SV) No endangered, threatened or special concern species reside in the area.
18	Human Use (HU) Recreational fishery attracts visitors from throughout New York State; a significant number of yellow perch caught are sold to local commercial markets. Additive division: $16 + 4/2$
9	Population Level (PL) One of the major spawning and nursery areas for yellow perch and other warmwater fish species in Laka Ontario.
1.2	Replaceability (R) Irreplaceable.

SIGNIFICANCE VALUE = $[(ER + SV + HU + PL) \times R]$

= **56**

DESIGNATED HABITAT: SODUS BAY

LOCATION AND DESCRIPTION OF HABITAT:

Sodus Bay is located on the south shore of Lake Ontario, just east of the Village of Sodus Point, in the Towns of Sodus and Huron, Wayne County (7.5' Quadrangles: Sodus Point, N.Y.; and Rose, N.Y.). The fish and wildlife habitat is an approximate 3,000 acre embayment, separated from the lake by a narrow barrier beach. Maximum depth of Sodus Bay is approximately 45 feet, but much of the area is relatively shallow (less than 20 feet deep), with dense beds of submergent aquatic vegetation. The outlet of Sodus Bay has been reduced to a narrow, stabilized channel, by the construction of concrete and steel jetties. Sodus Bay receives inflow from First, Second, Third, and Sodus Creeks; all but Sodus are small, low to medium gradient, warmwater streams. Sodus Creek is a relatively large, medium gradient, coolwater stream, draining approximately 20 square miles of rural farmland. Sizeable areas of emergent wetland vegetation have developed at the lower ends of these tributaries, and in sheltered portions of Sodus Bay. Most of the land area bordering Sodus Bay is privately owned, resulting in extensive development of residential areas, marinas, and bulkheads, and considerable disturbance of shoreline habitats. Two exceptions are the wetlands bordering Sodus Creek (south of County Route 143), and the wetlands located east of LeRoy Island, both of which are part of the NYSDEC's Lake Shore Marshes Wildlife Management Area. The area receives intensive recreational use (e.g., fishing, swimming, boating) during the summer months.

FISH AND WILDLIFE VALUES:

Sodus Bay is one of the largest sheltered bays on Lake Ontario. Extensive littoral areas, such as those found in Sodus Bay, are unusual in the Great Lakes Plain ecological region. Although human activities in the area have resulted in considerable habitat disturbance, the area still serves as a highly productive fish and wildlife habitat.

Sodus Bay has outstanding habitat values for resident and Lake Ontario based fisheries resources. The dense beds of aquatic vegetation, high water quality, sandy substrates, and freshwater tributaries, create highly favorable conditions for spawning and nursery use by many species. Warmwater fishes found in the area include gizzard shad, brown bullhead, white perch, yellow perch, largemouth bass, pumpkinseed, bluegill, rock bass, crappie, and northern pike. Sodus Bay is a major concentration area for yellow perch in Lake Ontario. Concentrations of white sucker, smallmouth bass, and various salmonid species occur in Sodus Bay prior to and after spawning runs in the major tributaries. Salmonid populations in the area are the result of an ongoing effort by the NYSDEC to establish a major salmonid fishery in the Great Lakes, through stocking. In both 1984 and 1985, approximately 200,000 chinook salmon fingerlings were released in Sodus Bay. The diverse and productive fisheries in Sodus Bay provide excellent opportunities for recreational fishing. Access to the area is available from many locations, and there is heavy fishing pressure throughout the year. Anglers from throughout New York State are attracted to the area, especially for the yellow perch ice fishery and the spring bullhead fishery. A considerable number of yellow perch caught in the bay are sold to commercial markets in the Rochester area.

Wetland areas bordering Sodus Bay contribute significantly to the productive fisheries in the bay, and support a variety of wildlife species. These wetlands serve as nesting and feeding areas for a variety of waterfowl and other marsh birds, including green-backed heron, great blue heron, mallard, wood duck, belted kingfisher, marsh wren, red-winged blackbird, and swamp sparrow. Other wildlife species found around Sodus Bay include white-tailed deer, beaver, raccoon, mink, muskrat, green frog, northern leopard frog, and painted turtle.

The open waters of Sodus Bay are important feeding and refuge areas for concentrations of waterfowl wintering along the Lake Ontario coast. Mid-winter aerial surveys of waterfowl abundance for the period 1976-1985 indicate average concentrations of approximately 250 birds in the bay each year (1,380 in peak year), including scaup, common goldeneye, mallard, mergansers, black duck, and Canada goose. Waterfowl use of the area during winter is influenced by the extent of ice cover each year. Concentrations of many waterfowl species, as well as loons, grebes, gulls, terns, and occasional bald eagles (E) and osprey (T), also occur in Sodus Bay during spring and fall migrations (March - April and October - November, respectively). However, there are no significant wildlife related human uses of this area.

IMPACT ASSESSMENT:

A **habitat impairment test** must be met 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** that must be met 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 substantially degrades water quality, increases temperature or turbidity, alters water depths, reduces inflows, or increases water level fluctuations in Sodus Bay would 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) could result in adverse impacts on fish and wildlife resources of the area. Habitat disturbances would be especially detrimental during fish spawning and nursery periods (March - July for most warmwater species, and September - November for most salmonids) and wildlife breeding seasons (April - July for most species). Elimination of wetland habitats (including submergent aquatic beds) as a result of dredging or filling, would reduce the value of this area to fish and wildlife. Construction and maintenance of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development, could have a significant impact on the habitat. Existing areas of natural vegetation bordering the bay should be maintained for their value as cover for wildlife, perch sites, and buffer zones. Barriers to fish migrations between Sodus Bay, Lake Ontario, and any tributary stream, could have significant effects on fish populations in the area and in connected waters. Any substantial physical alteration of the outlet or barrier beach formation would affect the fisheries resources, and human use of the area. However, public access to Sodus Bay should be maintained or enhanced to ensure that adequate opportunities for compatible human uses of the fish and wildlife resources are available.