

COASTAL FISH & WILDLIFE HABITAT RATING FORM

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Name of Area: **Oswegatchie River**

Designated: **May 15, 1994**

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

Town(s): **Ogdensburg**

7½' Quadrangle(s): **Ogdensburg East, NY; Ogdensburg West, NY**

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**Score**      **Criterion**

- 12**      Ecosystem Rarity (ER)  
The only significant area of riffle habitat associated with the lower St. Lawrence River (ecological subzone), but rarity reduced by human disturbance. Geometric mean:  $(9 \times 16)^{1/2} = 12$
- 0**      Species Vulnerability (SV)  
No endangered, threatened or special concern species are known to reside in the area.
- 9**      Human Use (HU)  
Diverse recreational fisheries attract considerable use by residents of the Thousand Islands region of New York.
- 0**      Population Level (PL)  
Spawning runs of walleye occur in the area, but no evidence of successful reproduction has been documented.
- 1.2**      Replaceability (R)  
Irreplaceable.
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SIGNIFICANCE VALUE = [( ER + SV + HU + PL ) X R]

= **25**

## DESIGNATED HABITAT: OSWEGATCHIE RIVER

### HABITAT DESCRIPTION:

The Oswegatchie River empties into the lower St. Lawrence River (Lake St. Lawrence), in the City of Ogdensburg, St. Lawrence County (7.5' Quadrangles: Ogdensburg West, NY; and Ogdensburg East, NY). The fish and wildlife habitat includes the one-half mile segment of river below Ogdensburg Dam, and an approximate 270 acre area at the river mouth, encompassing much of the Ogdensburg Harbor area. The Oswegatchie River has a drainage area of approximately 1,600 square miles and an average annual discharge in excess of 2,500 cubic feet per second.

Immediately below the dam, the Oswegatchie River is relatively shallow with a rock and rubble bottom, comprising a sizeable area of riffle habitat. However, recent power generation discharge facilities have degraded portions of the river bottom near the dam. Farther downstream, the channel is wider, deeper, and extensively bulkheaded in conjunction with dense urban waterfront development. A jetty has been constructed west of the Oswegatchie River mouth, creating a sheltered harbor area. Water depths in the harbor are generally less than 10 feet, except in dredged channels following the jetty and shoreline. Habitat disturbances in the Oswegatchie River include commercial and industrial uses of the harbor, discharges of stormwater and wastewater runoff into the river, and potential flow alterations and river bottom disturbances caused by upstream hydroelectric operations.

### FISH AND WILDLIFE VALUES:

The Oswegatchie River is the largest New York tributary of the St. Lawrence River. Historically, the river may have provided some of the most important fish and wildlife habitats associated with the St. Lawrence. However, its value has been reduced by extensive human disturbance, including the construction of dams and impoundment of the St. Lawrence River itself. Despite these alterations, the Oswegatchie River area continues to support significant fisheries resources. The area provides habitat for a variety of warmwater fish species, including northern pike, walleye, muskellunge, smallmouth bass, yellow perch, bluegill, rock bass, pumpkinseed, black crappie, brown bullhead, channel catfish, and white sucker. Records of lake sturgeon (T) and mooneye (SC) exist for the area but the extent of their use of the area has not been adequately documented. The Oswegatchie River represents the only significant area of riffle habitat on the lower St. Lawrence River. Consequently, the river is considered an important potential spawning area for walleye, and attracts a major run of white sucker. Recent expansion of the St. Lawrence River walleye population has led to the development of new spawning runs in some Canadian waters and may lead to increased or resumed use of this site in the future. During the mid 1980's, runs of chinook salmon also became established in the Oswegatchie River. Resident smallmouth bass also spawn in the riffle areas of the river. As a result of the abundant fisheries resources in the Oswegatchie River, this area attracts substantial recreational use by anglers from throughout the Thousand Islands region of New York.

### 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** 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 or reduce flows in the Oswegatchie River could affect the fish and wildlife resources of this area. All species of fish and wildlife may be adversely affected by water pollution, such as chemical contamination, oil spills, excessive turbidity or sedimentation, and waste disposal. Fluctuating water levels and diversion of flows resulting from hydroelectric power generation at Ogdensburg Dam (or other dams upstream) represent significant potential impacts on the habitat, and may already be adversely affecting warmwater fish spawning in the river. A primary concern is the need to provide adequate flows in the river during fish spawning and nursery periods. NYSDEC's future management plans for the Oswegatchie River include potential reestablishment of anadromous fish runs above the Ogdensburg Dam. Opportunities to provide fish passage should not be precluded as a result of hydropower development at this site. Installation and operation of water intakes could also have significant impacts on fish populations, through impingement of juveniles and adults, or entrainment of eggs and larval stages. Public access to this area should be maintained or enhanced to ensure that adequate opportunities for compatible human uses of the fish and wildlife resources are available.