

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Johnson Creek**

Designated: **October 15, 1987**

County: **Orleans**

Town(s): **Carlton, Yates**

7½' Quadrangle(s): **Ashwood, NY; Lyndonville, NY**

| <u>Score</u> | <u>Criterion</u> |
|--------------|--|
| 16 | Ecosystem Rarity (ER) One of about 10 major New York tributaries to Lake Ontario; rare in ecological subzone. |
| 0 | Species Vulnerability (SV) No endangered, threatened or special concern species reside in the area. |
| 4 | Human Use (HU) One of the most popular recreational fishing sites in Orleans county. |
| 4 | Population Level (PL) One of only two significant salmonid spawning streams in Orleans County. |
| 1.2 | Replaceability (R) Irreplaceable |

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

= **29**

DESIGNATED HABITAT: JOHNSON CREEK

LOCATION AND DESCRIPTION OF HABITAT:

Johnson Creek is located along the south shore of Lake Ontario, in the Towns of Carlton and Yates, Orleans County (7.5' Quadrangles: Ashwood, N.Y., and Lyndonville, N.Y.). The fish and wildlife habitat extends approximately seven miles from the hamlet of Lakeside on Lake Ontario to a low dam (the first impassable barrier) at the Village of Lyndonville. Johnson Creek is a relatively large, medium gradient, warmwater stream, with a gravelly substrate. The creek drains over 100 square miles of relatively flat agricultural and rural residential lands, and is bordered along most of its length by woody riparian vegetation. Most of the land area bordering Johnson Creek is privately owned, except in the last mile of stream, which flows through undeveloped Lakeside Beach State Park. Habitat disturbances in the area are generally limited to discharges of agricultural runoff, road crossings, and cottage development near the mouth of the creek.

FISH AND WILDLIFE VALUES:

Johnson Creek is the second largest stream in Orleans County, and is one of about ten major New York tributaries to Lake Ontario. The creek is primarily a warm water fisheries habitat, with largemouth and smallmouth bass, northern pike, walleye, and white sucker being some of the species present. In the fall (late August through December), however, concentrations of coho and chinook salmon enter the stream to spawn (although unsuccessfully in most instances). Although these species are not stocked in Johnson Creek, they are stocked by the NYSDEC in other tributaries of Lake Ontario, and many move into Johnson Creek during the fall spawning run. Other salmonids present in the creek during this period include brown trout and steelhead (lake-run rainbow trout). Anglers from throughout Orleans County, and as far away as Buffalo, fish Johnson Creek. The fall salmonid runs attract most of this recreational use. Johnson Creek may have even greater recreational potential as the salmonid fishery in Lake Ontario expands.

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 degrades water quality, increases temperature or turbidity, alters water depths, or reduces flows, would adversely affect the fisheries resources in Johnson Creek. These impacts would be especially detrimental during fish spawning and nursery periods (late February - July for most warmwater species and steelhead, and September - November for most salmonids). Discharges of sewage or stormwater runoff containing sediments or chemical pollutants (including fertilizers, herbicides, or insecticides) would adversely impact on fish or wildlife species in the area. Of particular concern are the potential effects of upstream disturbances, including water withdrawals, stream channel alterations, and effluent discharges. In the past, an upstream tributary (Jeddo Creek) has been polluted with pesticide residues, resulting in significant chemical pollution of Johnson Creek, and causing major fish kills. Discharges of toxic chemicals into the creek must be prevented in the future to avoid long term adverse impacts on fisheries resources. Barriers to fish migration, whether physical or chemical, would also have significant effects on fish populations and their recreational use. Clearing of natural vegetation along Johnson Creek, and other activities that may increase bank erosion or eliminate productive channel areas, would reduce habitat quality in Johnson Creek.