COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Oak Orchard Creek**

Designated: **October 15, 1987**

County: **Orleans**

Town(s): **Carlton**

7½' Quadrangle(s): **Kent, NY**

Score	Criterion
25	Ecosystem Rarity (ER) One of about 5 major tributaries of Lake Ontario, in a relatively undisturbed condition; rare in the Great Lakes Plain ecological region.
0	Species Vulnerability (SV) No endangered, threatened or special concern species are known to reside in the area.
16	Human Use (HU) One of the most popular recreational fishing sites on Lake Ontario, attracting anglers from throughout New York State.
9	Population Level (PL) Concentrations of spawning salmonids are among the largest occuring in New York's Great Lakes tributaries; unusual in the ecological region.
1.2	Replaceability (R) Irreplaceable

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

= **60**

DESIGNATED HABITAT: OAK ORCHARD CREEK

LOCATION AND DESCRIPTION OF HABITAT:

Oak Orchard Creek is located along the south shore of Lake Ontario, approximately thirty miles west of the City of Rochester, in the Town of Carlton, Orleans County (7.5' Quadrangle: Kent, N.Y.). The fish and wildlife habitat extends approximately six miles from the mouth at Point Breeze to the Waterport Dam, and includes the entire stream channel and associated islands and wetlands. The habitat also includes an approximate two mile segment of Marsh Creek, which flows into Oak Orchard Creek about one mile south of Point Breeze. Oak Orchard Creek is a very large, low to medium gradient, warmwater stream, with a predominantly rock and gravel substrate. The creek drains approximately 270 square miles of relatively flat agricultural land, rural residential land, and extensive inland wetlands. Below Waterport Dam, which serves an active hydroelectric power plant, Oak Orchard Creek flows through a steep sided, undeveloped, wooded gorge, where habitat disturbances are minimal. However, below the confluence with Marsh Creek (also an undisturbed stream segment), there has been considerable shoreline development, including marinas, boat launches, seasonal and permanent residences, bulkheading, and installation of breakwalls out into the lake. Sizeable areas of emergent wetland vegetation and submergent aquatic beds occur in undisturbed shoreline areas along this lower section of the creek. Most of the land area bordering Oak Orchard Creek is privately owned, but major public access facilities have been developed at the creek mouth.

FISH AND WILDLIFE VALUES:

Oak Orchard Creek is the largest stream in Orleans County, and is one of about ten major tributaries in the Great Lakes Plain ecological region of New York. Undisturbed tributary streams that provide habitat for major spawning runs by salmonids and other lake-based fish populations are especially important in this region. Beds of emergent and submergent aquatic vegetation in the creek contribute to the maintenance of fish populations and serve as valuable habitats for wildlife.

Oak Orchard Creek is particularly significant because large concentrations of coho and chinook salmon and brown trout migrate from Lake Ontario into the creek each fall, from late August through December (September - November, primarily), when salmonids ascend tributary streams to spawn (although unsuccessfully in most instances). In addition, steelhead (lake-run rainbow trout) migrate into Oak Orchard Creek during the fall and between late February and April. These fish populations are the result of an ongoing effort by the NYSDEC to establish a major salmonid fishery in the Great Lakes through stocking. In l984, approximately 300,000 chinook salmon, l4,000 steelhead, and nearly 40,000 coho salmon were released in the creek. Oak Orchard Creek was among the top ten Lake Ontario tributaries for numbers of salmonids stocked in l984. Oak Orchard Creek also contains a diverse warmwater fishery. The area supports substantial natural reproduction by smallmouth bass, northern pike, rock bass, black crappie, brown bullhead, and largemouth bass. Oak Orchard Creek also provides a limited smelt fishery in the spring.

The wetlands and undisturbed woodlands bordering Oak Orchard Creek provide valuable habitats for wildlife that are uncommon in Orleans County's coastal area. A variety of bird species inhabit the area, including great blue heron, greenbacked heron, mallard, wood duck, belted kingfisher, marsh wren, common yellowthroat, red-winged blackbird, and swamp sparrow. During spring and fall migrations, Oak Orchard Creek and Marsh Creek serve as resting and feeding areas for locally significant concentrations of waterfowl. Other wildlife species occurring along the creek include resident furbearers, such as muskrat, mink, and raccoon.

The fish and wildlife resources associated with Oak Orchard Creek attract a significant amount of recreational use, although access to the area is limited by the steep banks and private land ownership. This is one of the most popular recreational fishing streams on Lake Ontario, due primarily to the large salmonid

runs in the area. Fishing pressure is concentrated below the confluence of Oak Orchard and Marsh Creeks, and in the area immediately below Waterport Dam. The intervening segment of the creek is often fished by small boat or canoe, especially for the abundant warmwater species in the area. Oak Orchard Creek attracts anglers from throughout New York State and beyond. Local residents also utilize this area to a limited extent for waterfowl hunting and trapping.

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:
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> - destroy the habitat; or,
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> - 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, reduces flows, or alters water depths in Oak Orchard Creek would adversely affect the fish and wildlife resources of this area. 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), and wildlife breeding seasons (April - July for most species). Discharges of sewage or stormwater runoff containing sediments or chemical pollutants could adversely impact on fish or wildlife species. Of particular concern are the potential effects of upstream disturbances, including water withdrawals, stream bed disturbances, and effluent discharges. Hydro-electric facilities on the creek should only be permitted with run-of-river operations. Barriers to fish migration, whether physical or chemical, would have significant impacts on fish populations in the creek. Permanent disturbance of wetland vegetation, including submergent beds, through dredging, filling, or bulkheading, would result in a direct loss of valuable habitat area. Enhancement of motorboat access to the area above the confluence of the two creeks could significantly increase human disturbance of the habitat, reducing its potential value to various fish and wildlife species. Existing areas of natural vegetation bordering Oak Orchard Creek should be maintained to provide bank cover, perching sites, soil stabilization, and buffer zones.