

## COASTAL FISH & WILDLIFE HABITAT RATING FORM

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Name of Area: **Genesee River**

Designated: **October 15, 1987**

County: **Monroe**

Town(s): **Rochester**

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

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<u>Score</u>	<u>Criterion</u>
<b>20</b>	Ecosystem Rarity (ER) One of 4 major New York tributaries of Lake Ontario; unusual in the Great Lakes Plain ecological region, but rarity is reduced by human disturbances. Geometric mean: $(16 \times 25)^{\frac{1}{2}}$
<b>0</b>	Species Vulnerability (SV) Spotted salamander (SC) and spotted turtle (SC) have been observed but the extent of use not well documented.
<b>16</b>	Human Use (HU) A major recreational fishing area on Lake Ontario, attracting anglers from throughout New York State and beyond. Locally important for birdwatching and informal nature study.
<b>9</b>	Population Level (PL) Concentrations of spawning salmonids are among the largest occurring in New York's Great Lakes tributaries; unusual in the ecological region.
<b>1.2</b>	Replaceability (R) Irreplaceable

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

= **54**

## **DESIGNATED HABITAT: GENESSEE RIVER**

### **LOCATION AND DESCRIPTION OF HABITAT:**

The Genesee River is a major tributary of Lake Ontario, located in the City of Rochester, Monroe County (7.5' Quadrangles: Rochester West, N.Y.; and Rochester East, N.Y.). The fish and wildlife habitat is an approximate six and one-half mile segment of the river, extending from Lake Ontario to "Lower Falls" (located just above Driving Park Avenue), which is a natural impassable barrier to fish. The Genesee River is a large, warmwater river, with a drainage area of nearly 2,500 square miles, and an average annual discharge of approximately 2,800 cubic feet per second. Maximum water depths of up to 25 feet occur near the river mouth, and a navigation channel has been dredged upstream approximately two and one-half miles. Much of this lower segment is bordered by dense commercial, industrial, and residential development, accompanied by extensive bulkheading. Above this area, the Genesee River flows through a relatively undeveloped wooded gorge, and has a fringe of emergent wetland vegetation along much of its shoreline. This portion of the river is relatively shallow, with a rocky bottom. The only significant development within the gorge is an industrial wastewater treatment facility. However, the river has been subject to considerable water pollution problems, including discharges of sewage and chemical contaminants. Above Lower Falls, the Genesee River has been dammed for hydroelectric power development, resulting in some alteration of river flows downstream.

### **FISH AND WILDLIFE VALUES:**

The Genesee River is one of 4 major New York tributaries of Lake Ontario. The large size of this river, and the fact that much of the river corridor is essentially undisturbed, makes this one of the most important potential fish and wildlife habitats in the Great Lakes Plain ecological region of New York State. However, water pollution, and extensive alteration of the lower river channel, have reduced the environmental quality of this area.

The Genesee River is a highly productive warmwater fisheries habitat, supporting concentrations of many resident and Lake Ontario based fish species. Among the more common resident species are smallmouth bass, brown bullhead, northern pike, channel catfish, walleye, carp, and white sucker. Lake-run species found in the Genesee River include white bass, yellow perch, white perch, smelt, bowfin, sheepshead, rock bass, and American eel. These fish populations are supplemented by seasonal influxes of large numbers of trout and salmon. In the spring (late February - April), steelhead (lake-run rainbow trout) run up the river, and lake trout occur at the mouth. In fall (September - November, primarily), concentrations of coho and chinook salmon, brown trout, and steelhead, are found throughout the river during their spawning runs. The salmonid concentrations in the Genesee River are among the largest occurring in tributaries of Lake Ontario, and are largely the result of an ongoing effort by the NYSDEC to establish a major salmonid fishery in the Great Lakes through stocking. In 1985, approximately 20,000 steelhead and 300,000 chinook salmon were released in the river. The Genesee River provides an important recreational fishery, attracting anglers from throughout New York State and beyond. Its location within the city results in very heavy fishing pressure from residents of the Rochester metropolitan area, concentrated primarily at the river mouth, and between Seth Green Island and Lower Falls. Although the seasonal salmonid runs attract the greatest number of fishermen to the area, the river also supports an active warmwater fishery.

Wildlife use of the Genesee River is not well documented, but appears to be limited to those species that can inhabit a relatively narrow riparian corridor, and are somewhat tolerant of human activities in adjacent areas. Possible or confirmed breeding bird species include mallard, wood duck, great horned owl, red-tailed hawk, spotted sandpiper, belted kingfisher, red-winged blackbird, swamp sparrow, and various woodpeckers and woodland passerine birds. Several beaver colonies inhabit the lower Genesee in the vicinity of Turning Point Park and Rattlesnake Point. Spotted salamander (SC) and spotted turtle (SC) have been observed in the

Lower Genesee River Gorge but the extent of use by these species is not well documented. Other wildlife species occurring in the area probably include raccoon, muskrat, northern water snake, and painted turtle. The wildlife resources of the Genesee River and its adjacent woodlands are locally important for birdwatching, and informal nature study.

### **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, reduces flows, or increases water level fluctuations in the Genesee River, would affect the biological productivity of this area. Important species of fish and wildlife would be adversely affected by water pollution, such as chemical contamination (including food chain effects), oil spills, excessive turbidity, and waste disposal. Continued efforts should be made to improve water quality in the river, which is primarily dependent upon controlling discharges from combined sewer overflows, industrial point sources, ships, and agricultural lands in the watershed.

The existing navigation channel should be dredged between mid-May and mid-August or between mid-November and early April in order to avoid impacts on the habitat use by migrating salmonids. Activities that would affect the habitat above the navigation channel should not be conducted during the period from March through July in order to protect warmwater fish habitat values. New dredging (outside the existing navigation channel) would likely result in the direct removal of warmwater fish habitat values and should not be permitted. Contaminated dredge spoils should be deposited in upland containment areas.

Barriers to fish migration, whether physical or chemical, would have significant effects on fish populations within the river, and in adjacent Lake Ontario waters. Installation and operation of water intakes could have a significant impact on fish concentrations, through impingement of juveniles and adults, or entrainment of eggs and larval stages. Elimination of wetland habitats (including submergent aquatic beds), and further human encroachment into the river channel, would severely reduce its value to fish and wildlife. Existing areas of natural vegetation bordering the river should be maintained for their value as cover, perching sites, and buffer zones.