

Appendix C - State Designated Significant Coastal Fish and Wildlife Habitats

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area:	Eighteen Mile Creek - Lake Erie
Designated:	October 15, 1987
County:	Erie
Town(s):	Evans, Hamburg
7½' Quadrangle(s):	Eden, NY

Score	Criterion
25	Ecosystem Rarity (ER) One of the two largest New York State tributaries of Lake Erie; relatively undisturbed streams of this size that provide habitat for lake-based fisheries are rare in the Great Lakes Plain ecological region.
0	Species Vulnerability (SV) No endangered, threatened or special concern species reside in the area.
9	Human Use (HU) One of the most popular fishing areas in western New York.
6	Population Level (PL) One of the top 4 salmonid spawning streams among Lake Erie tributaries; geometric mean: $(4 \times 9)^{\frac{1}{2}}$
1.2	Replaceability (R) Irreplaceable.

SIGNIFICANCE VALUE = $[(ER + SV + HU + PL) \times R] = 48$

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS PROGRAM
A PART OF THE NEW YORK COASTAL MANAGEMENT PROGRAM

BACKGROUND

New York State's Coastal Management Program (CMP) includes a total of 44 policies which are applicable to development and use proposals within or affecting the State's coastal area. Any activity that is subject to review under Federal or State laws, or under applicable local laws contained in an approved local waterfront revitalization program will be judged for its consistency with these policies.

Once a determination is made that the proposed action is subject to consistency review, a specific policy aimed at the protection of fish and wildlife resources of statewide significance applies. The specific policy statement is as follows: "Significant coastal fish and wildlife habitats will be protected, preserved, and, where practical, restored so as to maintain their viability as habitats." The New York State Department of Environmental Conservation (DEC) evaluates the significance of coastal fish and wildlife habitats, and following a recommendation from the DEC, the Department of State designates and maps specific areas. Although designated habitat areas are delineated on the coastal area map, the applicability of this policy does not depend on the specific location of the habitat, but on the determination that the proposed action is subject to consistency review.

Significant coastal fish and wildlife habitats are evaluated, designated and mapped under the authority of the Coastal Management Program's enabling legislation, the Waterfront Revitalization and Coastal Resources Act (Executive Law of New York, Article 42). These designations are subsequently incorporated in the Coastal Management Program under authority provided by the Federal Coastal Zone Management Act.

This narrative, along with its accompanying map, constitutes a record of the basis for this significant coastal fish and wildlife habitat's designation and provides specific information regarding the fish and wildlife resources that depend on this area. General information is also provided to assist in evaluating impacts of proposed activities on parameters which are essential to the habitat's values. This information is to be used in conjunction with the habitat impairment test found in the impact assessment section to determine whether the proposed activities are consistent with the significant coastal habitats policy.

DESIGNATED HABITAT: EIGHTEEN MILE CREEK

LOCATION AND DESCRIPTION OF HABITAT:

Eighteen Mile Creek empties into Lake Erie at the hamlet of Highland-on-the-Lake, on the boundary between the Towns of Hamburg and Evans, Erie County. The fish and wildlife habitat extends approximately five miles from Lake Erie to the confluence of the Main and South Branches of the creek, through the Towns of Hamburg, Evans, and Eden (7.5' Quadrangle: Eden, N.Y.). Eighteen Mile Creek is a large, meandering, warmwater stream, with predominantly rock and gravel substrates. The creek drains approximately 120 square miles of agricultural land, rural residential areas, and forested hills. Eighteen Mile Creek is situated in a steep sided, undeveloped, wooded gorge, characterized by shale cliffs (70-100 feet high) and mature deciduous forest. The lower half-mile of Eighteen Mile Creek is low gradient, occupying a broad, undisturbed, floodplain.

FISH AND WILDLIFE VALUES:

Eighteen Mile Creek is the second largest tributary of Lake Erie in New York State, and there are few comparable streams in the Great Lakes Plain ecological region. Undisturbed tributary streams that provide habitat for major spawning runs by salmonids and other lake-based fish populations are especially important in this region. Eighteen Mile Creek is particularly significant because large concentrations of coho salmon, chinook salmon and brown trout migrate from Lake Erie into the creek each fall, from late August through December (September-November, primarily), when salmonids ascend the streams to spawn (although unsuccessfully in most instances). In addition, steelhead (lake-run rainbow trout) migrate into Eighteen Mile Creek during the fall and between late February and April. Runs of trout and salmon occur beyond the junction of the Main and South Branches of the creek, but population levels are not well developed above this point. 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 1984, approximately 40,000 coho salmon, and 18,000 steelhead were released in Eighteen Mile Creek. Among New York's Lake Erie tributaries, Eighteen Mile Creek ranked third for numbers of salmonids stocked in 1984; the creek was one of only four in the region that received steelhead. Eighteen Mile Creek also supports substantial natural reproduction by smallmouth bass, and has runs of various lake-dwelling species, such as white sucker, carp, freshwater drum, and brown bullhead. Black redhorse (SC) were reported at the mouth of the creek in the 1920's, but this species has not since been confirmed in the area.

Eighteen Mile Creek provides a major salmonid fishery to anglers in the Lake Erie coastal region. Although access is somewhat limited by the surrounding topo-graphy, the stream received an estimated 3,800 angler trips during September and October 1982. Smallmouth bass fishing also attracts local anglers to the area in early summer.

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 alters water depths in Eighteen Mile Creek would adversely impact on the fisheries resources of this area. These impacts would be most detrimental during spawning period, and in the spring after salmonids are stocked in the creek. Discharges of sewage or stormwater runoff containing sediments or chemical pollutants (including fertilizers, herbicides, or insecticides) would adversely impact on fish populations. Of particular concern are the potential effects of upstream disturbances, including water withdrawals, impoundments, stream bed disturbances, and effluent discharges. Barriers to fish migration, whether physical or chemical, would have a significant impact on fish populations in the creek. Development of hydroelectric facilities on the creek should only be permitted with run-of-river operations. Existing woodlands bordering Eighteen Mile Creek and its tributaries should be maintained to provide bank cover, soil stabilization, and buffer areas. Development of additional public access to the creek may be desirable to ensure that adequate opportunities for compatible human uses of the fisheries resources are available. However, installation of breakwalls or jetties to create a "harbor of refuge" could induce substantial development of this unusual natural area, directly resulting in the loss of habitat values.

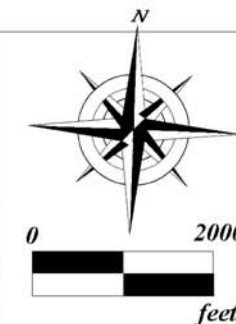
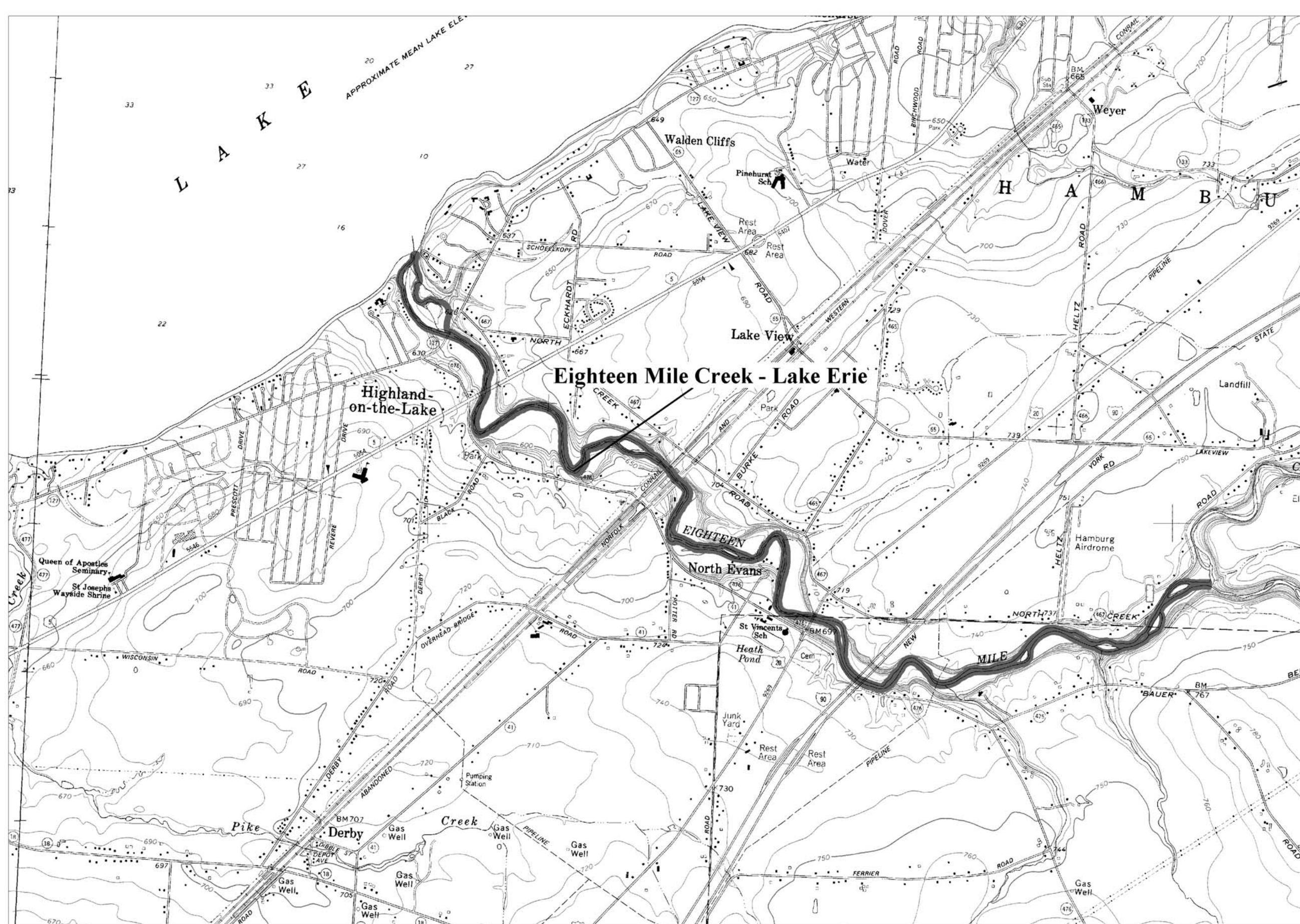
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Significant Coastal Fish and Wildlife Habitats

Eighteen Mile Creek - Lake Erie

New York State
Department of State

Division of
Coastal Resources



COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Smoke Creek Shoals**
Designated: **October 15, 1987**
County: **Erie**
Town(s): **Lackawanna, Hamburg**
7½' Quadrangle(s): **Buffalo SE, NY**

<u>Score</u>	<u>Criterion</u>
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- | | |
|------------|---|
| 9 | Ecosystem Rarity (ER)
Relatively large, shallow, gravel and rubble shoal, uncommon in Erie County. |
| 0 | Species Vulnerability (SV)
No endangered, threatened or special concern species reside in the area. |
| 4 | Human Use (HU)
Recreational fishery for walleye attracts many anglers from throughout Erie County. |
| 4 | Population Level (PL)
Recreational fishery for walleye attract many anglers from throughout Erie County. |
| 1.0 | Replaceability (R)
Uncertain of ability to replace the habitat or population level. |

SIGNIFICANCE VALUE = [(ER + SV + HU + PL) X R] = **17**

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BACKGROUND

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DESIGNATED HABITAT: SMOKE CREEK SHOALS

LOCATION AND DESCRIPTION OF HABITAT:

Smoke Creek shoals is located on the shoreline of Lake Erie, on the boundary between the City of Lackawanna and the Town of Hamburg, Erie County (7.5' Quadrangle: Buffalo SE, N.Y.). The fish and wildlife habitat is an approximate 500 acre area of open water, generally located within a one-half mile radius of the mouth of Smoke Creek. This area encompasses a broad, productive, littoral zone, where water depths are generally less than 20 feet below mean low water, and the bottom substrate is a mixture of sand, gravel, and rubble. The entire shoreline bordering Smoke Creek Shoals has been modified through filling or bulkheading in conjunction with adjacent industrial development (steel mills). Smoke Creek drains approximately 33 square miles of industrial, residential and abandoned agricultural land, and much of the channel has been modified for flood control purposes.

FISH AND WILDLIFE VALUES:

Smoke Creek Shoals is one of only a few sizeable areas of relatively shallow, gravelly shoals in the Erie County portion of Lake Erie. Apparently, wave action and inflows from Smoke Creek provide adequate water circulation in the area to prevent siltation of the bottom substrate. This extensive littoral zone probably serves as an important spawning area for a variety of warmwater fish species, especially walleye, along with yellow perch and smallmouth bass. Observations of walleye in and around the mouth of Smoke Creek during the spawning period (mid-march - early May, generally) suggest that the adjacent shoals attract a major lake-spawning concentration. Concentration areas such as this are unusual in Erie County. Walleye entered Smoke Creek to spawn in 1985 but did not appear to be successful.

As a result of the abundant walleye population at Smoke Creek Shoals, this area attracts significant recreational fishing pressure during late spring and early summer, primarily by residents of the Buffalo metropolitan area. Boat access to the fishery is available from the Small Boat Harbor in Buffalo.

Reproduction of walleye at Smoke Creek Shoals may also contribute to the Lake Erie commercial fishery for this species, located farther offshore in waters greater than 55 feet deep.

IMPACT ASSESSMENT:

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The specific **habitat impairment test** that must be met is as follows.

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- ! 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;
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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, or reduces physical diversity of bottom substrates at Smoke Creek Shoals would affect the fisheries resources of this area. Discharges of sewage, stormwater runoff, or industrial wastewater, containing heavy sediment loads or chemical pollutants would result in adverse impacts on fish populations. Activities such as dredging, oil and gas drilling, and solid waste disposal are all potential causes of permanent habitat degradation. Construction of breakwalls or jetties in the area would increase sedimentation, resulting in loss of suitable spawning habitat of walleye. Temporary habitat disturbances would be most detrimental during fish spawning and nursery periods (mid-March - July for most warmwater species); any unavoidable human disturbance of the littoral zone should be scheduled during fall or winter to minimize potential impacts on fisheries use of the area. Thermal discharges, depending on time of year, would also have adverse effects on fish populations in the area, since spawning activities and survival are directly affected by water temperature. 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.

KNOWLEDGEABLE CONTACTS:

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COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Seneca Shoals**
Designated: **October 15, 1987**
County: **Erie**
Town(s): **Three miles west of Hamburg**
7½' Quadrangle(s): **NOAA Chart # 14822**

<u>Score</u>	<u>Criterion</u>
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- | | |
|------------|---|
| 20 | Ecosystem Rarity (ER)
Large, shallow, offshore shoal area; rare in the Great Lakes Plain ecological region, especially Lake Erie. Geometric mean: $(16 \times 25)^{1/2}$ |
| 0 | Species Vulnerability (SV)
No endangered, threatened or special concern species reside in the area. |
| 9 | Human Use (HU)
One of the most popular recreational fishing areas in New York's portion of Lake Erie. |
| 6 | Population Level (PL)
Concentrations of smallmouth bass and other warmwater species are unusual in New York's Lake Erie waters. Geometric mean: $(4 \times 9)^{1/2}$ |
| 1.0 | Replaceability (R)
Due to the size of this area, costs for replacement may be prohibitive. |

SIGNIFICANCE VALUE = $[(ER + SV + HU + PL) \times R] = 35$

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DESIGNATED HABITAT: SENECA SHOALS

LOCATION AND DESCRIPTION OF HABITAT:

Seneca Shoals is located in the waters of Lake Erie, approximately three miles west of the hamlet of Woodlawn, in the Town of Hamburg, in Erie County (NOAA National Ocean Survey Chart No. 14822). The fish and wildlife habitat is an approximate 400 acre, rocky, underwater ridge. Water depths over the shoals range from approximately 12 to 30 feet. The surrounding waters are up to 50 feet deep, and commercial navigation corridors are located to the north of this area. Seneca Shoals is owned by the New York State Office of General Services.

FISH AND WILDLIFE VALUES:

Seneca Shoals is one of the few relatively large, shallow offshore areas in the New York portion of Lake Erie. The availability of extensive rock, ledge, and cobble substrates away from the heavily scoured shoreline provide favorable spawning habitats for a variety of warmwater fish species. Seneca Shoals is believed to be a major spawning area for populations of smallmouth bass, walleye, yellow perch, rock bass, and other panfish. As a result of the abundant fisheries resources around Seneca Shoals, and its proximity to the Buffalo metropolitan area, this is one of the most popular recreational fishing sites in Lake Erie. Anglers from throughout western New York are attracted to the area. In addition, reproduction of walleye and yellow perch at Seneca Shoals probably contributes significantly to local commercial fisheries for these species, located farther offshore in waters greater than 55 feet deep.

IMPACT ASSESSMENT:

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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, or reduces physical diversity of bottom substrates around Seneca Shoals would affect the fisheries resources of this area. Activities such as dredging, oil and gas drilling, and waste disposal are all potential causes of permanent habitat degradation. Temporary habitat disturbances would be most detrimental during fish spawning and nursery periods (mid-March - July for most warmwater species). Any unavoidable human disturbance of the littoral zone should be scheduled during late summer or fall to minimize potential impacts on fisheries in the area. Thermal discharges, depending on time of year, may also have adverse effects on fish populations, especially walleye. Installation and operation of water intakes near Seneca Shoals could have a significant impact on fish concentrations, through impingement of juveniles and adults, or entrainment of eggs and larval stages.

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