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COASTAL FISH & WILDLIFE HABITAT ASSESSMENT FORM

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Name of Area: **Nissequogue River**  
County: **Suffolk**  
Town(s): **Smithtown**  
7½' Quadrangle(s): **Central Islip, NY; Saint James, NY**  
Originally Designated: **March 15, 1987**  
Modified: **October 15, 2005**

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**Assessment Criteria** **Score**

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**Ecosystem Rarity (ER)--the uniqueness of the plant and animal community in the area and the physical, structural, and chemical features supporting this community.**

ER assessment: One of only four major riverine ecosystems on Long Island, containing extensive areas of undeveloped wetlands and tidal flats. 16

**Species Vulnerability (SV)--the degree of vulnerability throughout its range in New York State of a species residing in the ecosystem or utilizing the ecosystem for its survival. . (E = Endangered, T = Threatened, SC = Special concern)**

SV assessment: Least tern (T) nesting. Common tern (T) feeding. Osprey (SC) nesting and feeding area. Additive Division:  $36 + (25/2) + (16/2) + (16/4) = 60.5$  60.5

**Human Use (HU)-- the conduct of significant, demonstrable commercial, recreational, or educational wildlife-related human uses, either consumptive or non-consumptive, in the area or directly dependent upon the area.**

HU assessment: Regionally significant recreational fishery for brown trout, brook trout, and various estuarine species. 9

**Population Level (PL)--the concentration of a species in the area during its normal, recurring period of occurrence, regardless of the length of that period of occurrence.**

PL assessment: A population of native wild brook trout inhabits a tributary to New Millpond near the Suffolk County office complex. The only sea-run brown trout fishery tributary to Long Island Sound, of regional significance. 9

**Replaceability (R)--ability to replace the area, either on or off site, with an equivalent replacement for the same fish and wildlife and uses of those same fish and wildlife, for the same users of those fish and wildlife.**

R assessment: Irreplaceable. 1.2

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**Habitat Index = [ER + SV + HU + PL] = 94.5**

**Significance = HI x R = 113.4**

NEW YORK STATE  
SIGNIFICANT COASTAL FISH AND WILDLIFE HABITAT  
NARRATIVE

**NISSEQUOGUE RIVER**

LOCATION AND DESCRIPTION OF HABITAT:

The Nissequogue River is located on the north shore of Long Island, in the Town of Smithtown, Suffolk County (7.5' Quadrangles: Saint James, NY; and Central Islip, NY). This extensive fish and wildlife habitat encompasses approximately 1,511 acres, extending approximately nine miles from the river mouth on Long Island Sound to the Veterans Memorial Highway south of Blydenburgh County Park. The habitat encompasses the tidal portion of the river, which contains intertidal mudflats, salt marshes, and freshwater wetlands, bordered by undeveloped woodlands, Sunken Meadows State Park, the former Kings Park State Hospital (now a State Park), the open waters of New Millpond (also known as Stump Pond) and medium density residential development. Above the Phillips Mill Dam the Nissequogue River is a spring-fed, clean, cold, freshwater stream running through undeveloped woodlands in the State Park. Portions of the Nissequogue River located below mean high water are owned by the Town of Smithtown as well as the State of New York. The habitat includes the approximately 100-acre Nissequogue Bird Conservation Area located within Nissequogue River State Park and the approximately 600 acre Blydenburgh County Park, which includes the New Millpond. The fish and wildlife resources of the Nissequogue River are utilized for environmental education by a Board of Cooperative Educational Services center in Caleb Smith State Park, as well as by other educational organizations. Losses of tidal wetlands have recently been documented at the mouth of the Nissequogue River; research into the cause or causes of these losses is ongoing.

The Nissequogue River habitat contains several significant rare natural ecological communities documented by the New York Natural Heritage Program, including a brackish tidal marsh, a freshwater tidal marsh, and a red maple-black gum swamp. Rare plants documented by the Heritage Program within the Nissequogue River habitat include saltmarsh bulrush (*Bolboschoenus novae-angliae*), golden club (*Orontium aquaticum*), and blunt spikerush (*Eleocharis obtusa* var. *ovata*).

FISH AND WILDLIFE VALUES:

The Nissequogue River is one of four major tidal rivers on Long Island and is the island's largest tributary to Long Island Sound. The coastal segment of the Nissequogue River remains in a relatively undisturbed condition, and has been officially designated by New York State as a "Scenic and Recreational River" (under Article 15, Title 27 of the Environmental Conservation Law) to encourage preservation and restoration of its natural, scenic, and recreational qualities. The Nissequogue River also represents one of the largest coastal wetland areas on the north shore of Long Island. This habitat is important to a great diversity of fish and wildlife species throughout the year.

This biologically productive area also serves as an important feeding area for other species nesting in the vicinity, such as least tern (T), common tern (T), and for a variety of wading birds and waterfowl during spring and fall migrations. During the spring and summer months, the Nissequogue River provides suitable nesting habitat for herons, egrets, Canada goose, mallard, American black duck, spotted sandpiper, marsh wren, clapper rail, belted kingfisher, and many passerine species. A pair of osprey (SC) nest east of Vail Pond and south of the Old Dock Road boat ramp. The Nissequogue River is a locally significant waterfowl wintering area, supporting concentrations of American black duck, scaup (greater and/or lesser), bufflehead, red-breasted merganser, mallard, and Canada goose.

In addition to having significant bird concentrations, the Nissequogue River is a productive area for finfish, shellfish, and other wildlife. The river supports a sea-run fishery for brown trout in the fall (September-November, primarily), on the north shore of Long Island. Other fish species which use the Nissequogue River as a nursery or feeding area (from April 1 - November 30) include Atlantic silversides, Atlantic menhaden, bluefish, striped bass, scup, winter flounder, and blackfish. Significant populations of native brook trout and rainbow trout inhabit the upper freshwater segments of the river. New Millpond in Blydenburgh provides good quality recreational fishing for users of the park and includes habitat for large and smallmouth bass, bluegill, pumpkinseed sunfish, brown trout, yellow perch, and brown bullhead.

The river's fisheries resources support recreational fishing of regional significance. Access to the area for fishing is available from Sunken Meadow State Park west of the inlet, from Short Beach Town Park east of the inlet, from Old Dock Town Park, from Nissequogue River State Park, and from Nissequogue Landing County Park on the west shore. The river also contains abundant shellfish resources, including hard clams, soft clams, and American oysters, but these waters are not certified for harvesting shellfish. Diamondback terrapin nest along the sandy shores of the river near the mouth and use the salt marshes for cover and feeding.

#### IMPACT ASSESSMENT:

Any activity that would substantially degrade the water quality in Nissequogue River, increase temperature or turbidity, alter water depths or reduce flows, would adversely affect the biological productivity of these areas. Degradation of water quality in these interconnected waters, or to their water sources, from chemical contamination (including food chain effects), oil spills, excessive turbidity, and waste disposal (including vessel wastes) would adversely affect the fish and wildlife of Nissequogue River.

Alteration of tidal patterns in Nissequogue River, by modification of inlet configurations or other means, could have adverse effects on the biotic communities present. Dredging to maintain existing boat channels should be scheduled between December 15 and March 15 to minimize potential impacts on aquatic organisms, and to allow for placement of dredged material when wildlife populations are least sensitive to disturbance. Dredged material placement in this area would be detrimental, but such activities may be designed to maintain or improve the habitat for certain species of wildlife.

Additional impoundments and/or barriers to fish passage, in the interconnected waters of Nissequogue River and Long Island Sound, whether physical or chemical, would have adverse effects on the biological resources of Nissequogue River and Long Island Sound, and plans to mitigate the impact of existing structures should be developed. Sea-run brown trout and native brook trout would be especially sensitive during their fall spawning period (September - November).

Unrestricted use of motorized vessels including personal watercraft in the protected, shallow waters of the Nissequogue River could have adverse effects on aquatic vegetation and fish and wildlife populations. Use of motorized vessels should be controlled (*e.g.*, no wake zones, speed zones, zones of exclusion) in and adjacent to shallow waters and vegetated wetlands.

Elimination or disturbance of adjacent wetland and forested habitats would adversely affect certain wildlife species that are uncommon on Long Island, and would diminish the existing character of Nissequogue River. Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development, would result in the loss of productive areas which support the fish and wildlife resources of Nissequogue River. Vegetated upland buffer zones should be protected or established to further reduce water quality impairment from upland sources. Human disturbance of wetlands includes illegal dumping of household and commercial waste, the use of all-terrain vehicles on trails and shorelines, disruption of pond shores (including raking, mowing, trampling, or clearing of native vegetation), and destruction or removal of plants as a result of development or poor land management of adjacent areas. Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values.

#### HABITAT IMPAIRMENT TEST:

A **habitat impairment test** must be applied to 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 in the Impact Assessment section to assist in applying the habitat impairment test to a proposed activity.

KNOWLEDGEABLE CONTACTS:

Habitat Unit  
NYS Department of State  
Division of Coastal Resources  
41 State Street  
Albany, NY 12231  
Phone: (518) 474-6000

NYSDEC—Region 1  
State University of New York, Building 40  
Stony Brook, NY 11790-2356  
Phone: (631) 444-0354

Bureau of Marine Resources  
NYSDEC  
205 N. Belle Meade Road, Suite 1  
East Setauket, NY 11733  
Phone: (631) 444-0430

New York Natural Heritage Program  
625 Broadway, 5<sup>th</sup> Floor  
Albany, NY 12233-4757  
Phone: (518) 402-8935

Office of Ecology  
Suffolk County Dept. of Health Services  
Bureau of Environmental Management  
County Center  
Riverhead, NY 11901  
Phone: (631) 852-2077

Town of Smithtown  
Department of Environment and Waterways  
124 West Main Street  
Smithtown, NY 11787  
Phone: (631) 360-7514



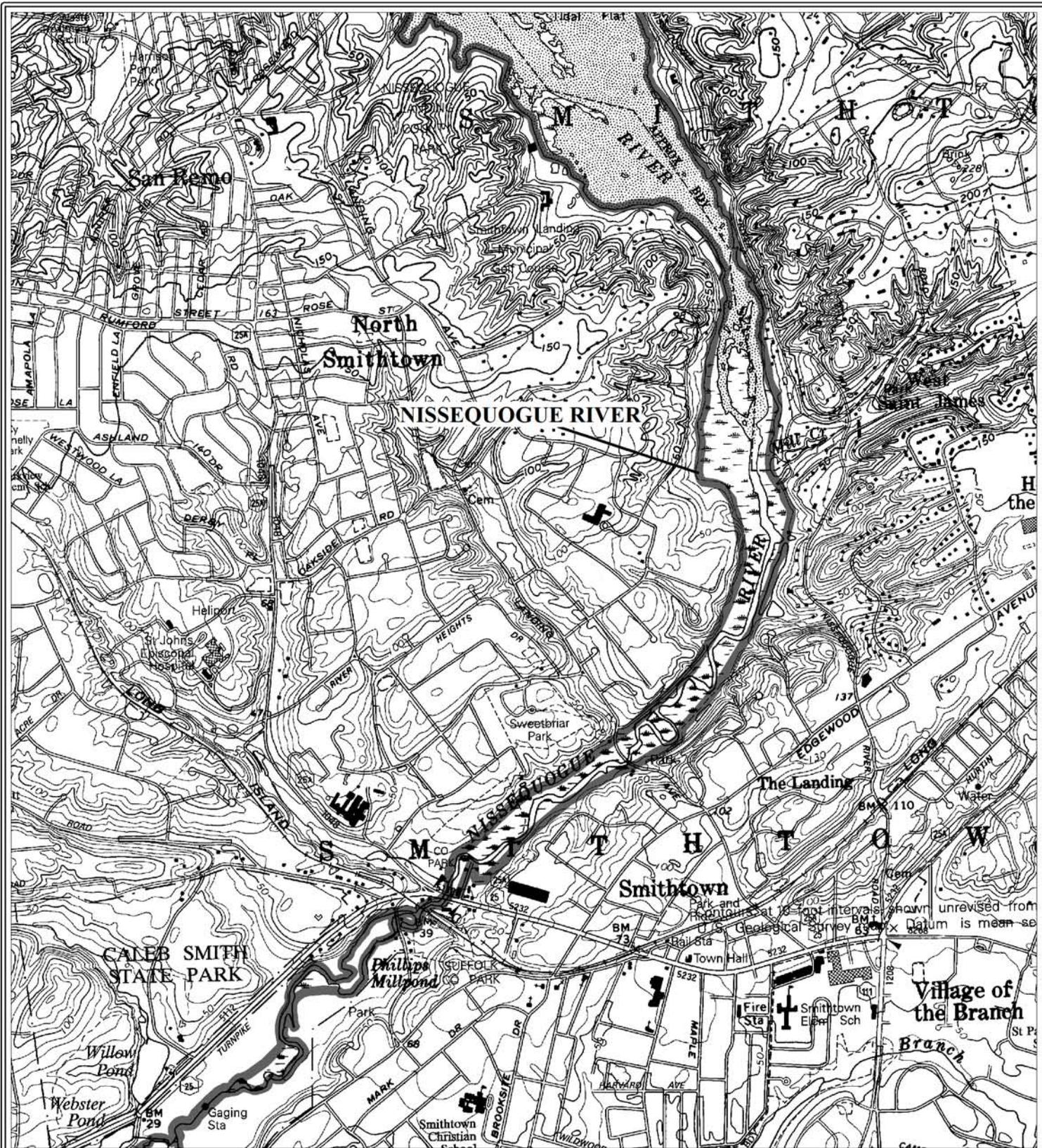
## Significant Coastal Fish and Wildlife Habitats

Nissequogue River (In Part)  
 Part 1 of 3  
 Nissequogue River Inlet Beaches



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## Significant Coastal Fish and Wildlife Habitats

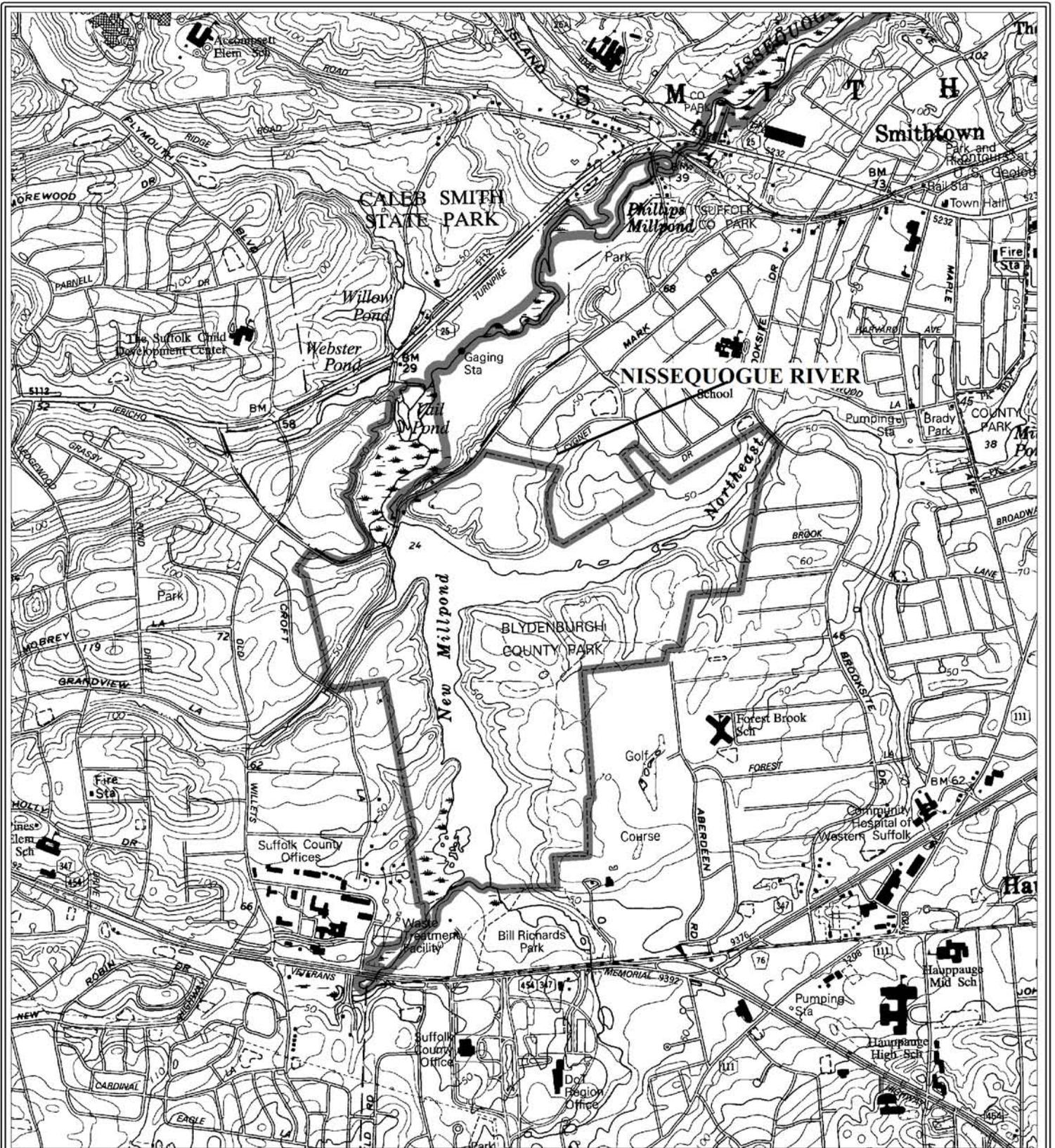
Nissequogue River (In Part)  
Part 2 of 3



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# Significant Coastal Fish and Wildlife Habitats

Nissequogue River (In Part)  
Part 3 of 3



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