
COASTAL FISH & WILDLIFE HABITAT ASSESSMENT FORM

Name of Area: **Roanoke Shoals**
County: **Suffolk**
Town(s): **Riverhead**
7½' Quadrangle(s): **Riverhead, NY**
Designated: **October 15, 2005**

Assessment Criteria

Score

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: Shallow waters exposed to open Long Island Sound conditions, supporting a high diversity of fish and wildlife species, rare in New York State. 64

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: Roseate tern (E) feeding. 36

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: Recreational fishery and shellfishery of county-level significance. Commercial surf clam fishery of county-level significance. Additive Division: $4 + 4/2 = 6$ 6

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: Concentrations of foraging roseate terns (E) significant in New York State. 16

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

Habitat Index = [ER + SV + HU + PL] = 122

Significance = HI x R = 146.4

NEW YORK STATE
SIGNIFICANT COASTAL FISH AND WILDLIFE HABITAT
NARRATIVE

Roanoke Shoals

LOCATION AND DESCRIPTION OF HABITAT:

The Roanoke Shoals habitat is located on the north shore of Long Island, between Jericho Landing to the west and Jacobs Point to the east (an approximate five-mile stretch), in the Town of Riverhead, Suffolk County (7.5' Quadrangle: Riverhead, NY). This approximately 2,510 acre habitat extends into Long Island Sound to the 25 foot (at mean low water) bathymetric contour. It consists of shallow, predominantly rocky-bottom marine waters extending northward from the mean high water line along the Long Island Sound shoreline. Water depths in the Roanoke Shoals habitat range from 5 to 20 feet at mean low water with a mean tide range of approximately 7 feet. The habitat is bordered by narrow maritime beaches and wooded bluffs.

FISH AND WILDLIFE VALUES:

The Roanoke Shoals habitat consists of shallow, rocky marine waters extending northward from the mean high water mark along the Long Island Sound shoreline. Similar habitat areas are rare in New York State. The shallow waters support a diversity of fish and shellfish, providing suitable feeding conditions for various species of wildlife. In particular, the shallow waters and fish species present support significant opportunities for foraging roseate tern (E). Roseate terns (E), nesting nearby on Faulkner and Great Gull Islands, use the area for feeding on American sand lance and bait fish. The populations of roseate terns (E) using the Roanoke Shoals area is significant in New York State. The Roanoke Shoals area also provides important feeding habitat for several species of sea turtles, including Atlantic ridley sea turtles (E), juvenile loggerhead sea turtles (T), and green sea turtles (T). The shallow waters of Roanoke Shoals also provides habitat for surf clams and a diversity of waterbirds.

Roanoke Shoals is a popular location for recreational fishing in Suffolk County. The presence of sunken timbers and calm, shallow waters due to several dilapidated sunken barges offshore of Friars Head, west of Roanoke Landing provide significant recreational fishing opportunities. Roanoke Shoals provides habitat for a variety of species of fish, including tautog, striped bass, summer flounder, fluke, bluefish, scup, black sea bass, and winter flounder. Access to the habitat's fishery resources is provided by a public boat launch at Roanoke Landing. Roanoke Shoals also supports an important commercial harvest of surf clams using both hand-harvesting and mechanical means, significant in Suffolk County. The area hosts a diversity of shellfish, including rock crab, lady crab, moon shell, hard clam, blood clam, and common sea star.

IMPACT ASSESSMENT:

Any activity that would substantially degrade water quality at Roanoke Shoals would adversely

affect the biological productivity of this area. All species of fish and wildlife would be affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, excessive turbidity or sedimentation, and waste disposal (including vessel wastes). Efforts should be made to improve water quality in the bay, including reduction or elimination of discharges from vessels and upland sources. Vegetated upland buffer zones should be protected or established to reduce non-point source runoff and sedimentation from upland sources.

Alteration of tidal patterns in Roanoke Shoals would have negative impacts on the biotic communities present. No new navigation channels should be excavated within the area. Dredging to maintain existing boat channels should be scheduled between September 15 and December 15 to minimize adverse effects on aquatic organisms, and to allow for the upland placement of dredged material when wildlife populations are least sensitive to disturbance. This is especially critical during the nesting and fledging period for colonial nesting birds from April 15 through August 15. Unregulated dredged material placement in this area would be detrimental to the habitat, but such activities may be designed to maintain or improve the habitat for certain species of wildlife. Existing and proposed dredging operations in this area should incorporate the use of best management practices to avoid and reduce adverse effects.

Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development, may result in the loss of productive areas which support the fish and wildlife resources of the Roanoke Shoals area. Alternative strategies for the protection of shoreline property should be examined, including innovative, vegetation-based approaches. Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall natural resource values.

Unrestricted use of motorized vessels including personal watercraft in shallow waters can have adverse effects on the benthic community, and on fish and wildlife populations. Use of motorized vessels should be controlled (e.g., no wake zone, speed zones, zones of exclusion) in and adjacent to shallow waters and adjacent wetlands.

Thermal discharges, depending on time of year, may have variable effects on use of the area by finfish and shellfish. Installation and operation of water intakes could have a significant impact on juvenile (and adult, in some cases) fish concentrations, through impingement or entrainment. The significant human use which this area supports depends upon maintaining optimal recreational and commercial fisheries.

Barriers to migration by sea turtles, marine mammals, or fish, whether physical or chemical, would have a significant effect on the biological resources of this area. Increases in vessel traffic within the area could adversely affect sea turtles and marine mammals migrating through or otherwise utilizing the area.

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:

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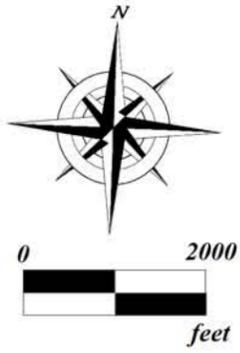
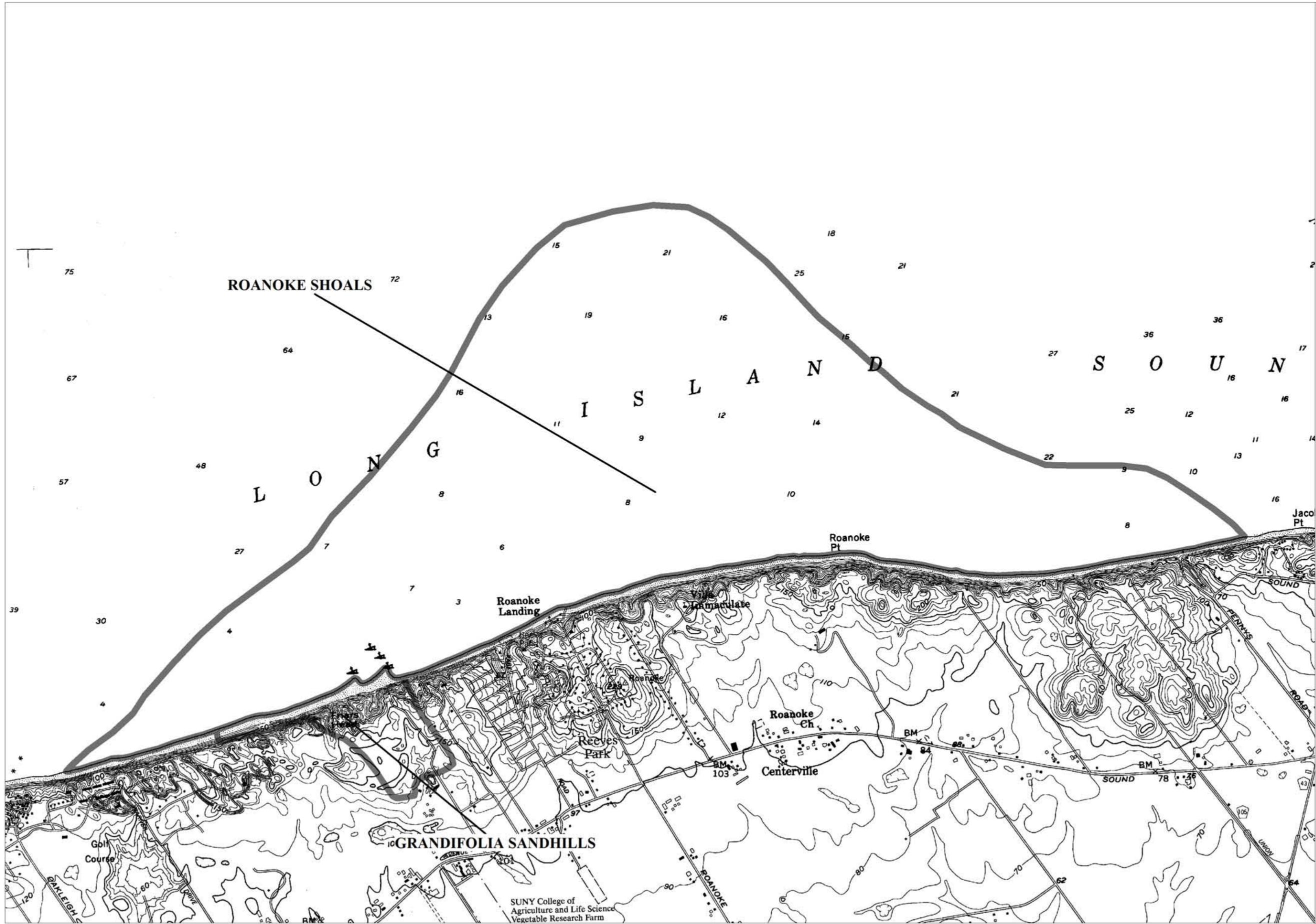
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Significant Coastal Fish and Wildlife Habitats

Grandifolia Sandhills
Roanoke Shoals

New York State
Department of State
Division of
Coastal Resources

