
COASTAL FISH & WILDLIFE HABITAT ASSESSMENT FORM

Name of Area: **Plum Gut**
County: **Suffolk**
Town(s): **Southold**
7½' Quadrangle(s): **Plum Island, NY; See also NOAA NOS Chart #12354**
Originally Designated: **March 15, 1987**
Modified: **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: A primary area of tidal exchange between Long Island Sound and Gardiners Bay; contains a deepwater channel with very turbulent currents passing through it. 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: Atlantic ridley (E) and loggerhead (T) sea turtles use the area.
Additive Division: $36 + 25/2 = 48.5$

48.5

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: This area supports one of the most valuable sportfisheries in the northeastern United States.

25

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 finfish foraging and passing through the area are unusual 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] = 153.5

Significance = HI x R = 184.2

NEW YORK STATE
SIGNIFICANT COASTAL FISH AND WILDLIFE HABITAT
NARRATIVE

PLUM GUT

LOCATION AND DESCRIPTION OF HABITAT:

Plum Gut is an area of open water located between Orient Point and Plum Island, in the Town of Southold, Suffolk County (7.5' Quadrangle: Plum Island, N.Y.). The fish and wildlife habitat is a deep channel (over 60 feet in depth), approximately one-half mile across, and bordered by steep underwater slopes rising up to the relatively shallow (less than 20 feet deep) Midway Shoal. This is approximately a 500 acre area is the primary opening in the underwater ridge separating Long Island Sound and Gardiners Bay, and is an area of turbulent tidal exchange. Plum Gut is on the ferry boat route from Orient Point to Plum Island and New London, Connecticut.

FISH AND WILDLIFE VALUES:

Plum Gut represents an unusual physical environment in New York State. The turbulent marine deepwater habitats and shoals combine to produce a productive and diverse habitat for marine fishes and invertebrates.

Significant concentrations of many fish species forage in this area, including striped bass, bluefish, tautog, summer flounder, and scup. Plum Gut is one of two major passage corridors for striped bass, which move into Long Island Sound in spring en route to their spawning grounds, and return to southern overwintering areas during fall. Plum Gut is also thought to be the major corridor for Atlantic salmon returning to the Connecticut (CT) and Pawtucket (RI) Rivers in the early spring.

As a result of the abundant fisheries resources in the area, Plum Gut is one of the most popular areas in the northeastern United States for recreational fishing, with an extensive fishery occurring throughout spring, summer, and fall. Much of this activity is due to the involvement of charter boats from Greenport and Montauk Harbor as well as Connecticut. In addition to sportfishing, the commercial trap net fishery and lobster fishery in Plum Gut are of regional significance. The richness and productivity of this area are also reflected in the use of Plum Gut by marine mammals, particularly bottlenosed dolphin, harbor porpoise, harbor seal, and by sea turtles, especially juvenile Atlantic ridley (E) and loggerhead (T) sea turtles.

IMPACT ASSESSMENT:

Any activity that would substantially degrade the water quality in Plum Gut would adversely affect the biological productivity of this area. Degradation of water quality in this area, or to its water sources, from chemical contamination (including food chain effects), oil spills, excessive turbidity, and waste disposal (including vessel wastes) would adversely affect all fish and wildlife.

Barriers to fish migration, whether physical or chemical, would have a significant effect on the

biological resources of this area. The fisheries resources of Plum Gut would be most affected by any activities that would substantially alter water currents in the area. Also, installation and operation of water intakes would have a significant impact on juvenile (and, in some cases, adult) fish concentrations, through impingement or entrainment. Thermal discharges, depending on time of year, may also have variable effects on use of the area by marine species. The significant human use which this area supports is dependent upon maintaining or enhancing opportunities for compatible recreational and commercial fishing, within the productivity limits of the fisheries resource.

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.

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