COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Normans Kill**

Designated: **November 15, 1987**

County: **Albany**

Town(s): **Albany, Bethlehem**

7½' Quadrangle(s): **Albany, NY; Delmar, NY**

Score	Criterion
16	Ecosystem Rarity (ER) One of the major freshwater tributaries of the upper Hudson River, which is relatively undisturbed and accesible to anadromous fishes.
0	Species Vulnerability (SV) No endangered, threatened or special concern species reside in the area.
4	Human Use (HU) Recreational fishing opportunities attract many Albany County anglers to the area.
6	Population Level (PL) One of only 10 significant spawning streams for anadromous fishes in the upper Hudson River: geometric mean; $(4x9)^{½} = 6$.
1.2	Replaceability (R) Irreplaceable

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

= **31**

DESIGNATED HABITAT: NORMANS KILL

LOCATION AND DESCRIPTION OF HABITAT:

The Normans Kill is located on the west side of the Hudson River, on the boundary between the City of Albany and the Town of Bethlehem, Albany County (7.5' Quadrangles: Albany, N.Y.; and Delmar, N.Y.). The fish and wildlife habitat is an approximate two mile segment of this freshwater tributary, extending from its mouth on the Hudson River to a falls which is located just downstream from the New York State Thruway (Interstate Route 87) bridge. The Normans Kill is a relatively large, medium gradient, perennial, warmwater stream, with a drainage area of over 170 square miles, and an average annual discharge volume of approximately 150 cubic feet per second. Municipal water withdrawals upstream reduce flows year-round by more than 7 cubic feet per second. The first mile of stream below the falls flows through a steep-sided wooded gorge, and is relatively shallow, with a gravelly substrate. The lower mile of the creek (referred to as "Island Creek") is within the tidal range of the Hudson River, and is relatively deep, with a silt and clay substrate. At least part of this segment appears to have been channelized in the past, in conjunction with nearby commercial and industrial developments. Despite its proximity to the Port of Albany, the Normans Kill and its associated riparian zone remain in a relatively natural condition. Habitat disturbance in the area is generally limited to the presence of road and railroad crossings, litter, and discharges of stormwater runoff from paved areas.

FISH AND WILDLIFE VALUES:

The Normans Kill is the largest tributary stream in Albany County, and is one of about 4 major tributaries emptying into the northern portion of the Hudson River estuary. The considerable length of stream channel accessible to migratory fishes, and the lack of significant human disturbance in the upper portion of the creek, provide favorable habitat conditions for a variety of anadromous as well as resident freshwater fish species. The Normans Kill is an important spawning area for alewife, blueback herring, and white perch; it is one of only 10 significant spawning streams for these anadromous fishes in the upper Hudson River. Generally, these species enter the stream between April and June; the adults leave the area shortly after spawning, and within several weeks, the eggs have hatched, and larval fish begin moving downstream to nursery areas in the Hudson River. A substantial population of smallmouth bass also occurs in the Normans Kill throughout the year. Adults move into the upper section of the creek in May and early June to spawn, and return to deeper areas as water temperatures rise. Freshwater inflows from the Normans Kill are also important for maintaining water quality in the Hudson River estuary.

The abundant fisheries resources of the Normans Kill provide significant opportunities for recreational fishing. Although no developed public access facilities exist, the area is popular among Albany County anglers, especially for smallmouth bass fishing during the summer months. Fishing pressure is concentrated on the lower section of the creek, near road crossings.

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 would substantially degrade water quality, increase turbidity or sedimentation, reduce flows, or increase water temperatures in the Normans Kill would result in significant impairment of the habitat. Discharges of sewage or stormwater runoff containing sediments or chemical pollutants (including fertilizers, herbicides, or insecticides) Could result in significant impairment of the habitat. 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 this Creek, as well as in the Hudson River. Habitat

disturbances would be most detrimental during fish spawning and incubation periods. Existing woodlands bordering the Normans Kill and its tributaries should be maintained to provide bank cover, soil stabilization, and buffer areas. Development of appropriate public access to the area may be desirable to ensure that adequate opportunities for compatible human uses of the fisheries resources are available.