

COASTAL FISH AND WILDLIFE RATING FORM

Name of area: **Roeliff-Jansen Kill**
 Designated: **November 15, 1987**
 Revised: **August 15, 2012**
 County: **Columbia**
 Town(s): **Germantown, Livingston, Clermont**
 7.5' Quadrangles: **Clermont, NY; Hudson South, NY**

<u>Assessment Criteria</u>	<u>Score</u>
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 the major freshwater tributaries of the Hudson River that is relatively undisturbed and accessible to anadromous fishes.	25
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.	
SV Assessment –No endangered, threatened or special concern species reside here.	0
Human Use (HU) -- the conduct of significant, demonstrable commercial, recreational, or educational wildlife-related human use, either consumptive or non-consumptive, in the area or directly dependent upon the area.	
HU Assessment – Recreational fishing opportunities attract visitors from throughout the mid-Hudson valley, New York, and neighboring states. Geometric mean: $\sqrt{25} \times \sqrt{16} = 20$	20
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 – High concentrations of important coastal migratory species- striped bass, American shad. High concentrations of resident species including white perch, smallmouth bass and largemouth bass. High concentration of migratory waterfowl: American black duck, bufflehead, gadwall, wood duck, green-winged teal and mallard.	4
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)= 49	Significance (HI x R)= 58.8

LOCATION AND DESCRIPTION OF HABITAT

The Roeliff-Jansen Kill habitat is located on the east side of the Hudson River, approximately six miles south of the City of Hudson, in the Towns of Germantown, Livingston, and Clermont, Columbia County (7.5' Quadrangles: Hudson South, N.Y.; and Clermont, N.Y.). The fish and wildlife habitat, encompassing approximately 295 acres, includes a 2-mile long tidal flat along the eastern shore of the Hudson River and extends approximately six-miles upstream to an abandoned dam and falls near the hamlet of Bingham Mills.

The Roeliff-Jansen Kill is a large, medium gradient, perennial, coolwater stream, with a predominantly bedrock and gravel substrate in the upper reaches. Silty alluvial areas are interspersed throughout and tidal mudflats and marsh occur in the lower one-half mile of the creek and in the Hudson River. A freshwater tidal marsh as well as submerged aquatic vegetation (mainly water celery, *Vallisneria americana*) is found near the mouth of the creek and in the Hudson River. Threatened and rare plant species also grow here: tidal spikerush (*Eleocharis aestuum*) (R), golden club (*Orontium aquaticum*) (T) and heartleaf plantain (*Plantago cordata*) (T).

The Roeliff-Jansen Kill drains a very large rural land area and is situated in a well-developed floodplain occupied by deciduous forest and agricultural lands. The creek remains in a relatively natural condition with habitat disturbance generally limited to the presence of road and railroad crossings, dams, litter, discharges of agricultural runoff, and the presence of invasive species including purple loosestrife (*Lythrum salicaria*) and water chestnut (*Trapa natans*).

FISH AND WILDLIFE VALUES

The Roeliff-Jansen Kill is one of the largest freshwater tributaries emptying into the Hudson River estuary. The considerable length of stream channel accessible to migratory fishes and the lack of significant human disturbance in the creek provide favorable habitat conditions for a variety of coastal migratory as well as resident freshwater fish species in the Roeliff-Jansen Kill. The submerged aquatic vegetation found at the mouth of the Roeliff-Jansen Kill and the Hudson River, mainly water celery (*Vallisneria americana*), provides food for fish, invertebrates and waterfowl as well as refuge for fish and invertebrates.

The Roeliff-Jansen Kill is an important spawning area for white sucker (*Catostomus commersoni*), spottail shiner (*Notropis hudsonius*), alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*) and white perch (*Morone americana*). 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. Juvenile striped bass (*Morone saxatilis*) inhabit the entire length of stream below Bingham Mills, although spawning occurs elsewhere in the river. In addition, shallow subtidal areas at the mouth of the Roeliff-Jansen Kill and in the Hudson River serve as spawning sites for American shad (*Alosa sapidissima*) which concentrate in such areas between mid-April and June. Concentrations of smallmouth bass (*Micropterus dolomieu*) occur in the Roeliff-Jansen Kill throughout the year. Adult bass move into the upper section of the creek in May or early June to spawn and return to river areas as water temperatures rise. American eel (*Anguilla rostrata*) also use this habitat. A sizeable resident population of brown trout (*Salmo trutta*) exists in the stream near the natural barrier at Bingham Mills, far above the influence of tides.

A number of amphibians and reptiles also live here: map turtle (*Clemmys insculpta*), water snake (*Nerodia s. sipedon*), red-spotted newt (*Notophthalmus v. viridescens*), redback salamander (*Plethodon cinereus*), mudpuppy (*Necturus maculosus*), American toad (*Bufo americanus*), gray treefrog

(*Hyla versicolor*), spring peeper (*Pseudacris crucifer*), bullfrog (*Rana catesbeiana*), green frog (*Rana clamitans*) and wood frog (*Rana sylvatica*).

In addition to supporting fish, amphibians, and reptiles the Roeliff-Jansen Kill provides habitat for a high concentrations of waterfowl such as American black duck (*Anas rubripes*), bufflehead (*Bucephala albeola*), gadwall (*Anas strepera*), wood duck (*Aix sponsa*), green-winged teal (*Anas crecca*), and mallard (*Anas platyrhynchos*).

Freshwater inflows from the Roeliff-Jansen Kill are important for maintaining water quality in the Hudson River estuary.

The abundant fisheries resources of the Roeliff-Jansen Kill provide significant opportunities for recreational fishing. Although limited public access facilities exist, the area is popular among anglers from throughout the mid-Hudson Valley region, New York, and surrounding States, especially for smallmouth bass fishing during the spring and summer months.

IMPACT ASSESSMENT

Any activity that would substantially degrade water quality, increase turbidity or sedimentation, reduce flows, or increase water temperatures in the Roeliff-Jansen Kill, would result in significant impairment of the habitat. All species may be affected by water pollution such as chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, excessive turbidity or sediment loading, nonpoint source runoff, and waste disposal. Of particular concern are the potential effects of upstream disturbances, including water withdrawals, impoundments, stream bed disturbances and effluent discharges. Discharges of sewage or stormwater runoff containing sediments or chemical pollutants (including fertilizers, herbicides and/or insecticides) may result in adverse impacts on the habitat area.

Substantial alteration of the stream channel, such as impoundment or creation of barriers to fish passage should be prohibited. Any physical alteration of the habitat, through dredging, filling, or bulkheading, could result in a direct loss of valuable habitat area. Impediments to movement and migration of aquatic species, whether physical or chemical (e.g., dams, dikes, channelization, bulkheading and sedimentation), should be prohibited. Plans to reduce or eliminate the impacts of existing hydrological modifications should be developed, including improvements to fish passage, and/or the removal of obstructions or barriers. Habitat disturbances would be most detrimental during bird nesting, and fish spawning and nursery periods, which generally extend from April through August for most warm water species.

Elimination of adjacent wetland and forested habitats would adversely affect the habitat. Existing areas of natural vegetation bordering the Roeliff-Jansen Kill and its tributaries should be maintained to provide bank cover, soil stabilization, buffer areas, and habitat.

The presence of invasive species and the expansion of their range within the habitat may result in changes in native plant, vertebrate and invertebrate species composition and abundance. In particular, changes in plant communities may affect marsh-nesting birds. Effective control of invasive plant species, through a variety of means, may improve fish and wildlife species use of the area. Control methods, including biological controls and regulated use of herbicides must only be implemented, if other methods of control have been explored, and then only under permit with strict adherence to all precautionary measures to avoid impacts to non-target species. The primary goals of such efforts must be recovery and maintenance of habitat for native fish and wildlife species.

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 through re-suspension of bottom sediments and through shoreline erosion which may reduce water clarity and increase sedimentation. 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. Docks, piers, catwalks, or other structures may be detrimental to submerged aquatic vegetation beds through direct or indirect effects from shading, mooring chain scarring, and other associated human uses. Docks, piers, catwalks, or other structures may be detrimental to submerged aquatic vegetation beds through direct or indirect effects from shading, mooring chain and propeller scarring, and other associated human uses. In particular, the submerged aquatic vegetation beds are especially vulnerable to impacts that decrease light penetration into the water.

Where opportunities exist, appropriate restoration of intertidal and subtidal shallow habitats should be undertaken using the best available science and proper monitoring protocols. Restoration and enhancement efforts should be monitored, and the associated habitat effects should be reported and evaluated.

HABITAT IMPAIRMENT TEST

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).

KNOWLEDGABLE CONTACTS

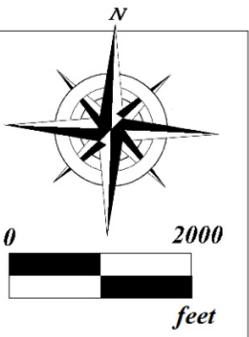
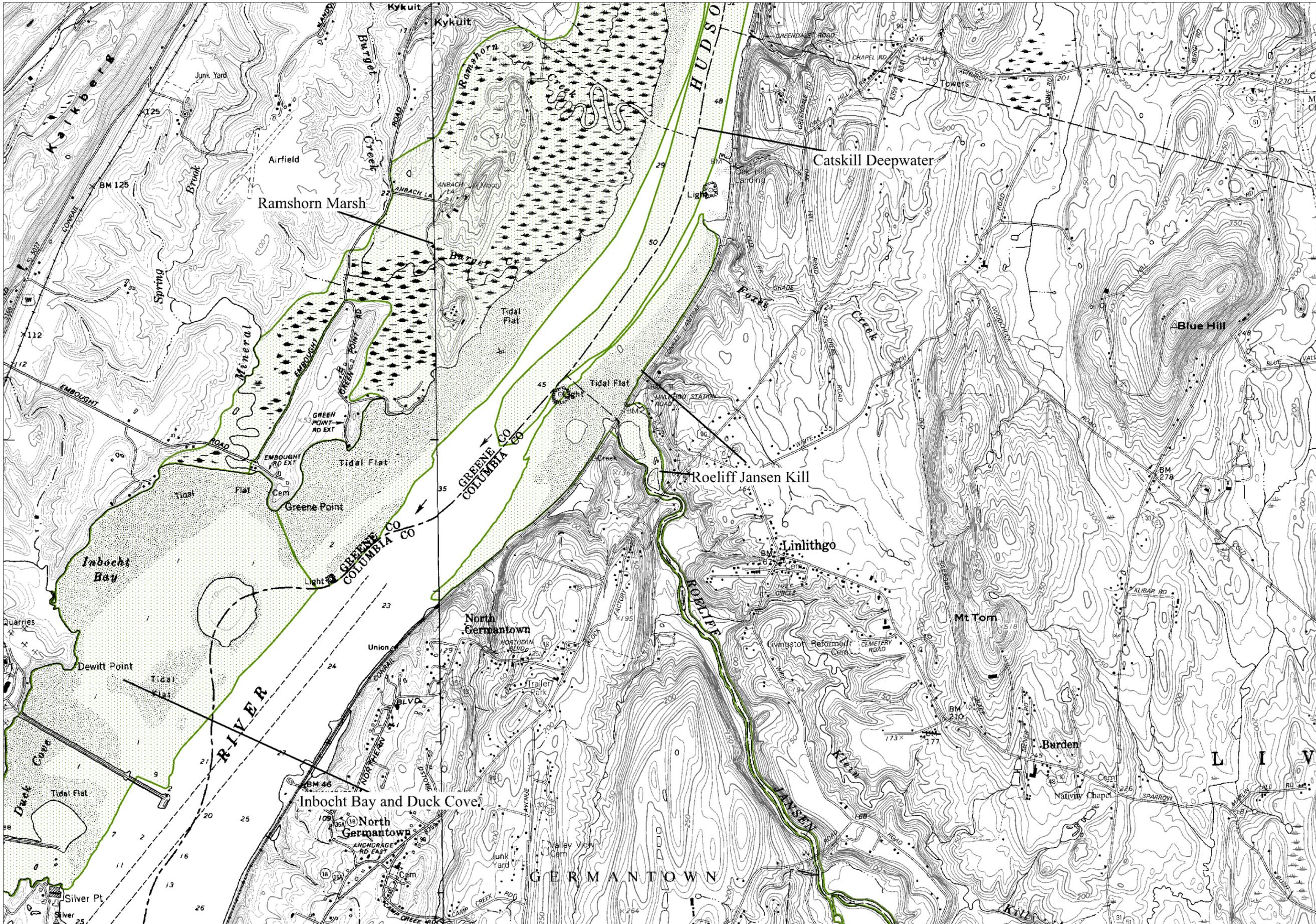
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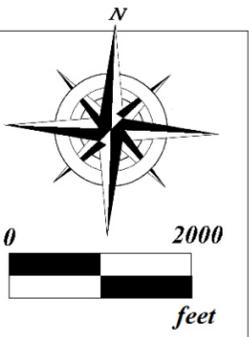
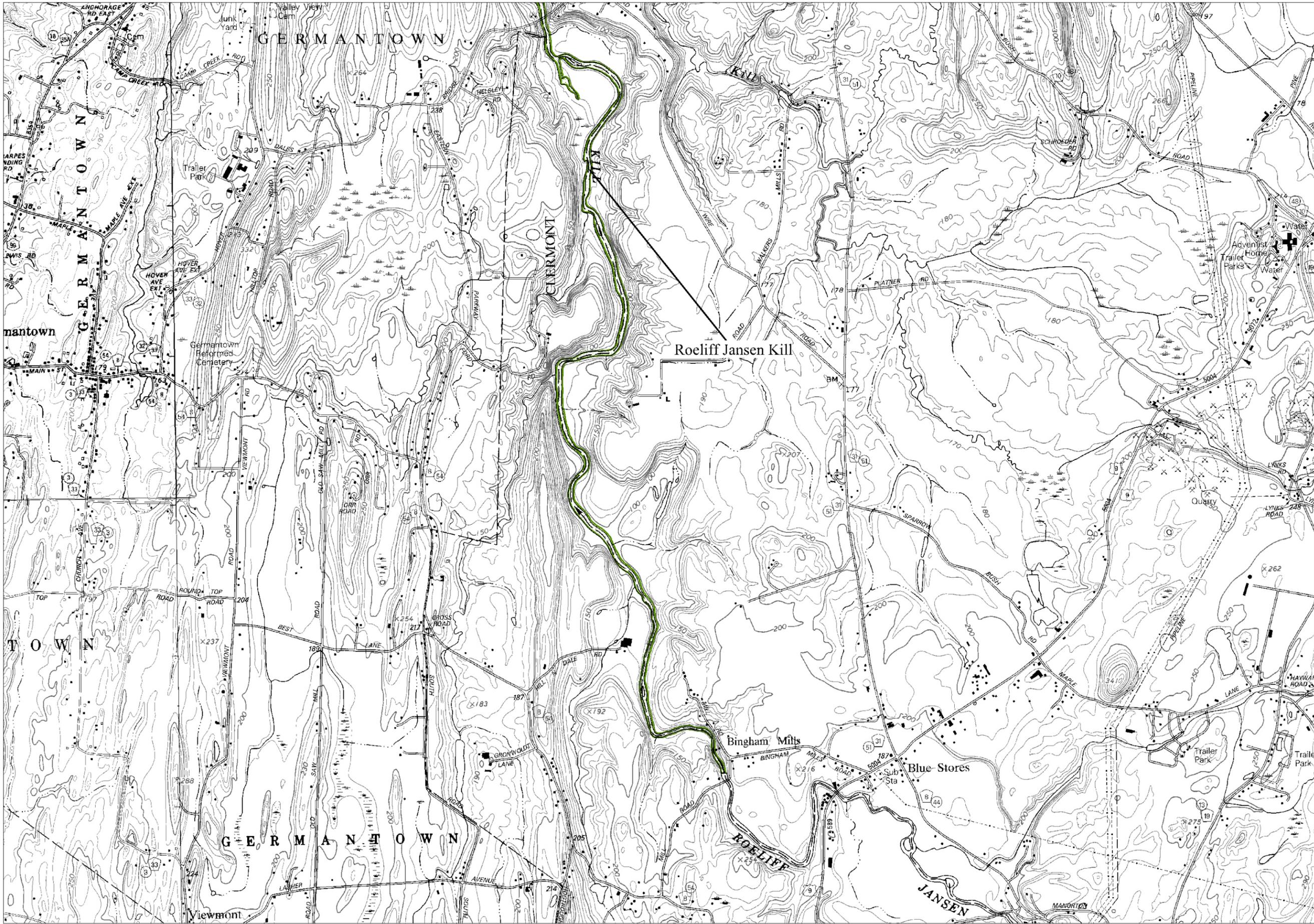
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Significant Coastal Fish and Wildlife Habitats

- Roeliff Jansen Kill (In Part) Part 1 of 2
- Catskill Deepwater (In Part)
- Inbocht Bay & Duck Cove (In Part)
- Ramshorn Marsh (In Part)





Significant Coastal Fish and Wildlife Habitats

Roeliff Jansen Kill (In Part) Part 2 of 2

