COASTAL FISH AND WILDLIFE RATING FORM

Name of area: **Black Creek**
Designated: **August 15, 2012**
County: **Ulster**
Town(s): **Esopus**
7.5' Quadrangles: **Hyde Park, NY**

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 – Freshwater tidal creek with a historically large herring run; freshwater tidal wetland and swamp, rare in New York; and shallow submerged aquatic vegetation beds at the mouth.	**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.	
SV Assessment – No endangered, threatened or special concern species have been found in the area.	**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, hiking, bird watching, educational uses.	**4**
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 – Historic concentration of herring in creek and concentrations of amphibians breed in vernal pools in forested area.	**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**
Habitat Index (ER+SV+HU+PL)= 77	**Significance (HI x R)= 92.4**

LOCATION AND DESCRIPTION OF HABITAT

The Black Creek habitat is approximately 41 acres and is located in the Town of Esopus in Ulster County (7.5' Quadrangle: Hyde Park N.Y.). The predominant habitat is forest with vernal pools, adjoined by freshwater tidal wetland and swamp with submerged aquatic vegetation beds in the eastern portion of the habitat where the mouth of the creek meets the Hudson River.

Black Creek habitat includes part of the Black Creek Forest preserve owned and managed by Scenic Hudson Land Trust, Inc. Current disturbances are limited to the residential area in the northern portion along the Hudson River and the presence of many invasive plant species including purple loosestrife (*Lythrum salicaria*).

In addition, a number of endangered, threatened and rare plants are found in the preserve: false hop sedge (*Cyperus lupulinus ssp. Lupulinus*) (R), reflexed sedge (*Carex retroflexa*) (E), winged monkey flower (*Mimulus alatus*)(R), and swamp lousewort (*Pedicularis lanceolata*) (T)

FISH AND WILDLIFE VALUES

A number of ecological communities comprise the Black Creek habitat area including freshwater tidal creek, freshwater tidal wetland, submerged aquatic vegetation beds, tidal swamp and shrub swamp. Black Creek is an important spawning, nursery, and refuge area for migratory and resident fish species and historically supported one of the largest herring runs, including alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*) in the Hudson Valley. Sea lamprey (*Petromyzon marinus*), white perch (*Morone americana*), white sucker (*Catostomus commersoni*) and spottail shiner (*Notropis hudsonius*) also spawn in this tributary. American eel (*Anguilla* rostrata) are found in this creek, as well. The submerged aquatic vegetation, water celery (*Vallisneria americana*) provides food and refuge for fish and invertebrates.

Black Creek supports a number of amphibians and reptiles. The common map turtle (*Graptemys geographica*) is found along the banks of the creek mouth. Northern cricket frog (*Acris crepitans*) (E), Northern slimy salamander (*Plethodon glutinosus*), red-spotted newt (*Notophthalmus v. viridescens*), wood frog (*Rana sylvatica*), spring peeper (*Pseudoacris crucifer*), green frog (*Rana clamitans*), Northern black racer (*Coluber constrictor*), grey tree frog (*Hyla versicolor*), Northern water snake (*Nerodia s. sipedon*), Marbled salamander (*Ambystoma opacum*) (SC), and Jefferson salamander (*Ambystoma jeffersonianum*) (SC) have all been observed in the preserve. A number of butterflies, moths and dragonflies also make use of this habitat.

The Black Creek is used for a number of recreational purposes such as fishing, hiking, bird watching, and for educational programs.

IMPACT ASSESSMENT

Any activities that would degrade water quality, increase turbidity, increase sedimentation, or alter flows, temperature, or water depths or reduce freshwater inflows in Black Creek or its tributaries 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, and nonpoint source runoff. Discharges or runoff of sewage effluent, pesticides, or other hazardous materials into the habitat could result in impairment to the habitat area. Of particular concern are the potential effects of upstream and adjacent disturbances, including water

withdrawals, impoundments (e.g., hydro power development), stream bed disturbances, discharges of agricultural runoff and groundwater contamination.

Any physical alteration of the habitat, through dredging, filling, or bulkheading, could result in a direct loss of valuable habitat area. Substantial alteration of the stream channel, such as impoundment or creation of barriers to fish passage should be prohibited. Plans to reduce or eliminate the impacts of existing hydrological modifications within the creek should be developed, including improvements to fish passage, and/or the removal of obstructions or barriers. Habitat disturbances would be most detrimental during amphibian breeding, bird nesting, and fish spawning and nursery periods, which generally extend from April through August.

Activities that would subdivide this relatively large, undisturbed area into smaller fragments should be avoided. Existing areas of natural vegetation bordering Black Creek should be maintained to provide bank cover, soil stabilization, perching sites, and buffer areas.

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.

The expansion of water chestnut (*Trapa natans*) and replacement of submerged aquatic vegetation may also result in changes in fish and invertebrate species composition in the areas occupied by this invasive plant. Activities that may result in expansion of water chestnut should be avoided.

Maintenance of appropriate public access to the area may be desirable to allow compatible human uses of the fish and wildlife resources. Human use of the area should be conducted in a manner to avoid impacts.

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 appplying 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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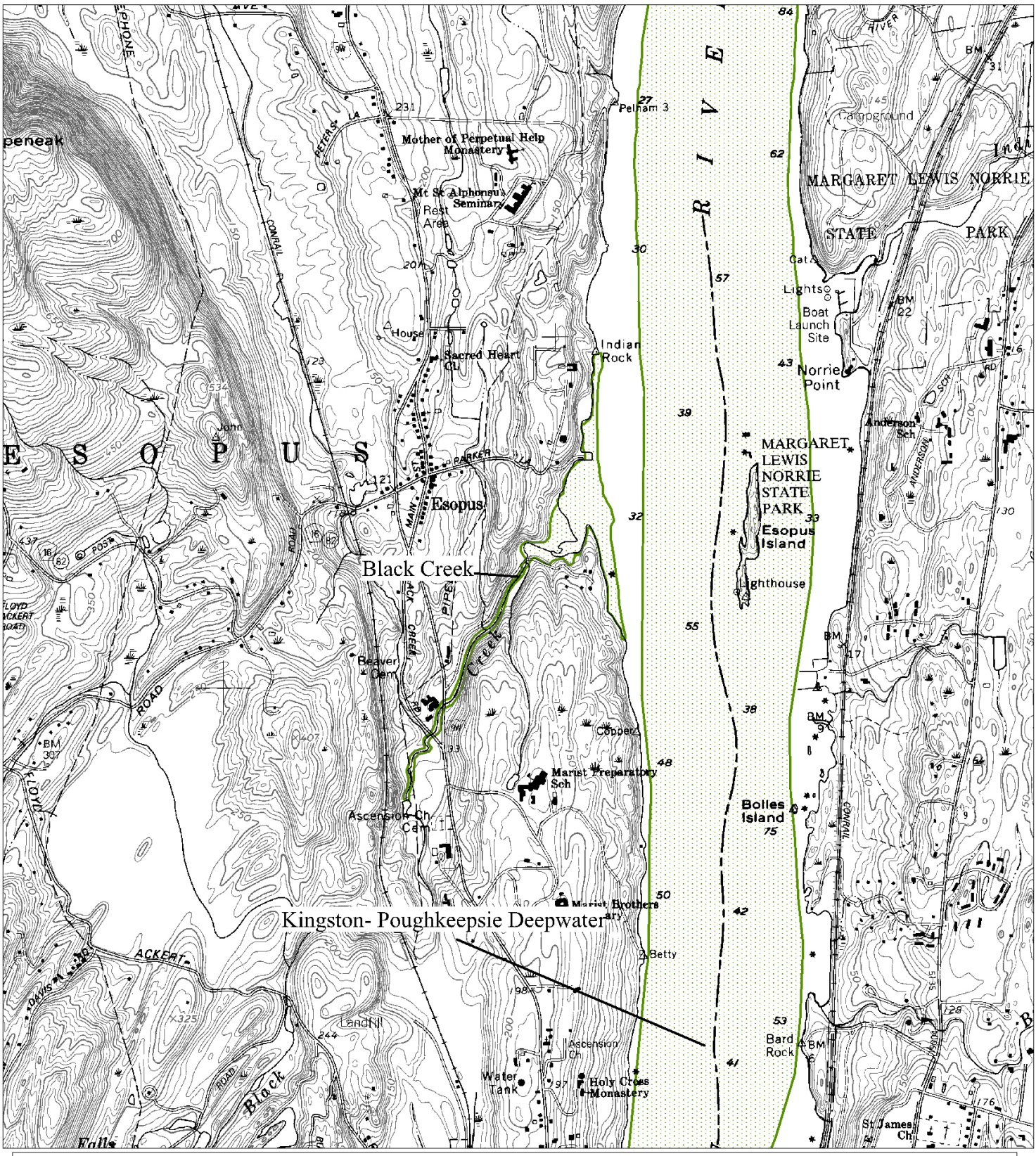

Significant Coastal Fish and Wildlife Habitats

Black Creek
Kingston-Poughkeepsie Deepwater (In Part)

NEW YORK STATE DEPARTMENT OF STATE

N

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