

COASTAL FISH AND WILDLIFE RATING FORM

Name of area: **Vosburgh Swamp and Middle Ground Flats**

Designated: **November 15, 1987**

Revised: **August 15, 2012**

County: **Greene**

Town(s): **Coxsackie, Athens**

7.5' Quadrangles: **Hudson, NY**

<u>Assessment Criteria</u>	<u>Score</u>
<b>Ecosystem Rarity (ER) -- the uniqueness of the plant and animal community in the area and the physical, structural and chemical features supporting this community.</b>	
<b>ER Assessment</b> – An extensive area of freshwater tidal mudflats, wetlands, swamp and littoral zones; rare in the Hudson Valley region.	<b>25</b>
<b>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.</b>	
<b>SV Assessment</b> – Shortnose sturgeon (E), least bittern (T), northern harrier (T), pied-billed grebe (T) Additive Division: $36 + 25/2 + 25/4 + 25/8 = 59$	<b>56.88</b>
<b>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.</b>	
<b>HU Assessment</b> – Significant waterfowl hunting use by residents of the Hudson Valley; significant area in the Hudson Valley region for recreational boating and fishing use.	<b>9</b>
<b>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.</b>	
<b>PL Assessment</b> -- Concentrations of waterfowl and various anadromous fish species are unusual in the Hudson Valley.	<b>9</b>
<b>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.</b>	
<b>R Assessment</b> – Irreplaceable	<b>1.2</b>
<b>Habitat Index(ER+SV+HU+PL)=99.88</b>	<b>Significance(HI x R)= 119.86</b>

## LOCATION AND DESCRIPTION OF HABITAT

Vosburgh Swamp and Middle Ground Flats extend for approximately four miles along the western shore of the Hudson River, from the Village of Athens, in the Towns of Coxsackie and Athens, Greene County to just north of Fourmile Point (7.5' Quadrangle: Hudson North, N.Y.). The fish and wildlife habitat encompasses approximately 1,300 acres of extensive mudflats and shallows, off-channel open water areas, hardwood swamp, a freshwater impoundment (Vosburgh Swamp), freshwater tidal marsh, spoil bank islands and submerged aquatic vegetation beds (mainly *Vallisneria americana*, water celery) surrounding Middle Ground Flats and within West Flats. The habitat also includes Murderers Creek upstream approximately one-half mile to Sleepy Hollow Lake dam, which is the first impassable barrier to fish.

Several threatened and endangered plant species grow in this area: American waterwort (*Elatine americana*) (E), golden club (*Oroonchium aquaticum*) (T), heartleaf plantain (*Plantago cordata*) (T), spongy arrowhead (*Sagittaria calycina* var. *spongiosa*) (T), smooth bur-marigold (*Bidens laevis*) (T) and southern estuary beggar ticks (*Bidens bidentoides*) (R). The invasive plant species common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*) and water chestnut (*Trapa natans*) also occur in this habitat.

## FISH AND WILDLIFE VALUES

Relatively high concentrations of American shad (*Alosa sapidissima*) use the shallow and littoral areas around West Flats and Middle Ground Flats for spawning. Shortnose sturgeon (*Acipenser brevirostrum*) (E) can be found in the areas north and south of Middle Ground Flats along with alewife (*Alosa pseudoharengus*), American eel (*Anguilla rostrata*), blueback herring (*Alosa aestivalis*) and striped bass (*Morone saxatilis*). Atlantic sturgeon (*Acipenser oxyrinchus*) may occasionally be present in deepwater at the lower extent of the habitat areas, south of Middle Ground Flats. Murderers Creek is also utilized as a spawning, nursery, and feeding area by striped bass, alewife, blueback herring, white perch (*Morone americana*), and a variety of resident freshwater species. The submerged aquatic vegetation provides food for fish, invertebrates and waterfowl as well as shelter for fish and invertebrates. The shores and wetlands of this area provide habitat for common map turtles (*Graptemys geographica*).

The mudflats, marshes, submerged aquatic vegetation beds and littoral zones in this area provide valuable feeding and resting habitat for large concentrations of waterfowl during the fall and spring migrations. When open water is available, this area also provides an important waterfowl wintering area in the upper Hudson Valley region. The wetland area provides habitat for various nesting birds including green-backed heron (*Butorides virescens*), American black duck (*Anas rubripes*), mallard (*Anas platyrhynchos*), wood duck (*Aix sponsa*), Virginia rail (*Rallus limicola*), common moorhen (*Gallinula chloropus*) and marsh wren (*Cistothorus palustris*). In addition, this area supports the nesting of a number of threatened or special concern bird species including American bittern (*Botaurus lentiginosus*)(SC), least bittern (*Ixobrychus exilis*)(T), northern harrier (*Circus cyaneus*)(T), bald eagle (*Haliaeetus leucocephalus*)(T) and pied-billed grebe (*Podilymbus podiceps*)(T).

Human use of the Vosburgh Swamp and Middle Ground Flats area is of regional significance. The area is a popular waterfowl hunting location. A NYSDEC boat launch is located on the south side of Murderers Creek, provides access for recreational fishing throughout the area.

## IMPACT ASSESSMENT

Any activity that would degrade water quality, increase turbidity or sedimentation, alter flows, temperature or water depths in Vosburgh Swamp, Middle Ground Flats or West Flats would result in significant impairment of the habitat. Disruption of the freshwater or tidal flows in these areas could have major consequences to the littoral zones, wetlands, and mudflats which contribute significantly to the value of this habitat. All species may be affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), excessive turbidity or sediment loading, nonpoint source runoff, and waste disposal. Discharges of sewage effluent or other hazardous materials into the habitat could result in impairment to the habitat area. Discharges of stormwater runoff containing sediments or chemical pollutants (including fertilizers, herbicides and/or insecticides) could result in adverse impacts on the habitat area.

Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously altered by human activity would result in the loss of productive areas which support the fish and wildlife resources of the habitat. Construction of structures in areas previously altered may result in a direct loss of valuable habitat. Elimination or disturbance of wetlands, littoral zones, or mudflats associated with Vosburgh Swamp, through the loss of tidal connection, excavation, filling, or bulkheading would have significant impacts on the fish and wildlife resources of Vosburgh Swamp and Middle Ground Flats. In addition, bulkheading or other shoreline modifications could indirectly result in the loss of intertidal and subtidal habitats by scouring, and/or precluding the gradual natural upslope migration of these habitats as sea level rises. Such areas should be protected, and where possible restored to provide bank cover, stabilize soil, maintain or improve water quality and provide buffer areas from development. 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.

Thermal discharges, depending on time of year, could have adverse effects on use of the area by migratory and resident species. Shad spawning activities and survival are directly affected by water temperature. Entrainment and impingement causes significant mortality to all life stages of fish, including endangered species. Activities that would enhance migratory fish, spawning, or nursery habitat, particularly where an area is essential to a species' life cycle or helps to restore an historic species population would be beneficial.

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, aquatic vegetation, and on fish and wildlife populations through resuspension 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 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.

## **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:

1. destroy the habitat; or,
2. 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 and 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 includes but is 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**

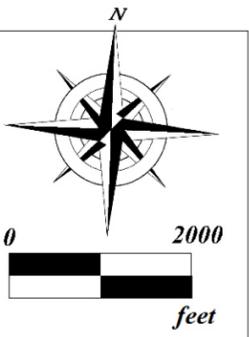
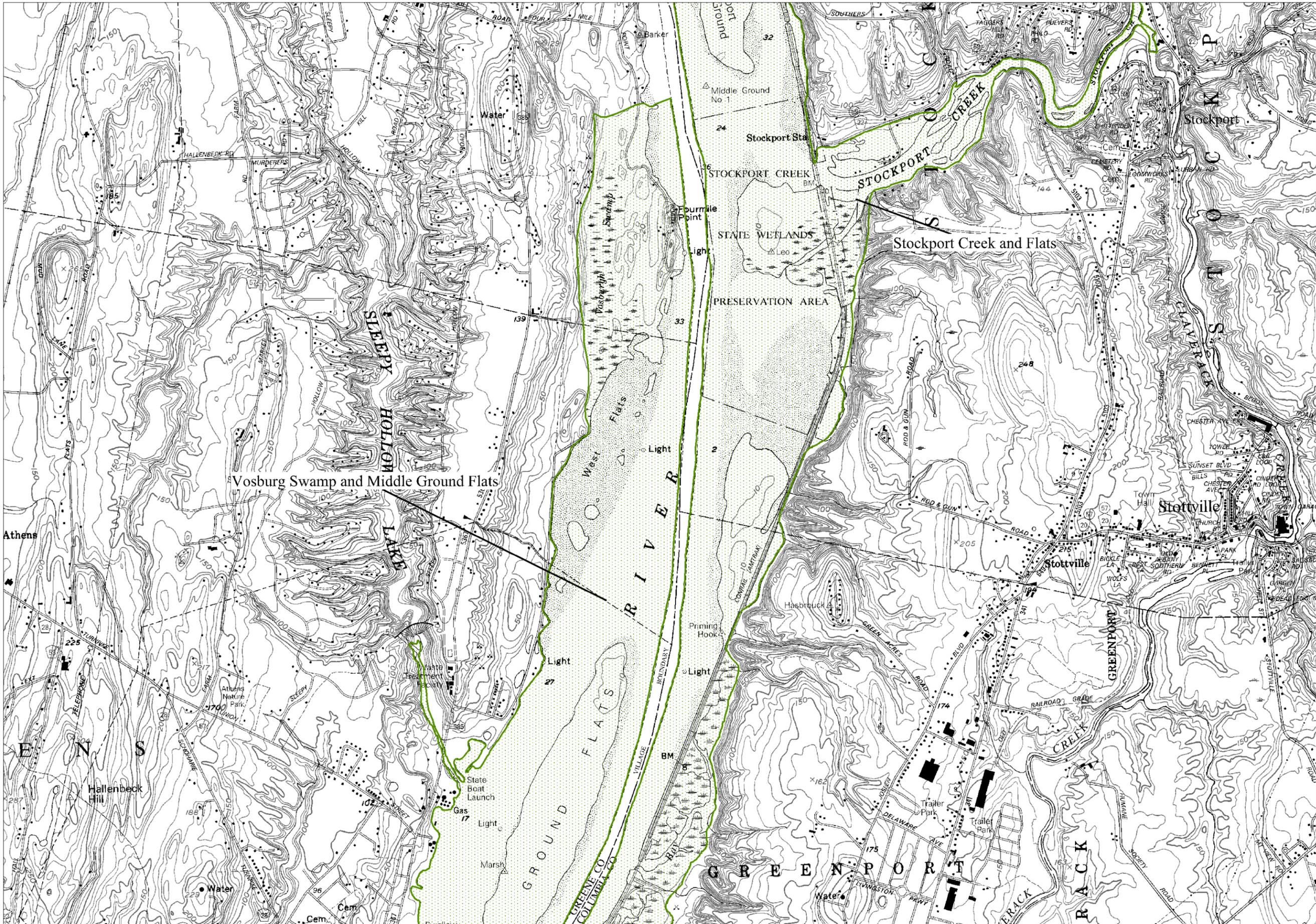
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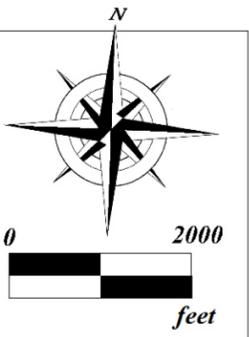
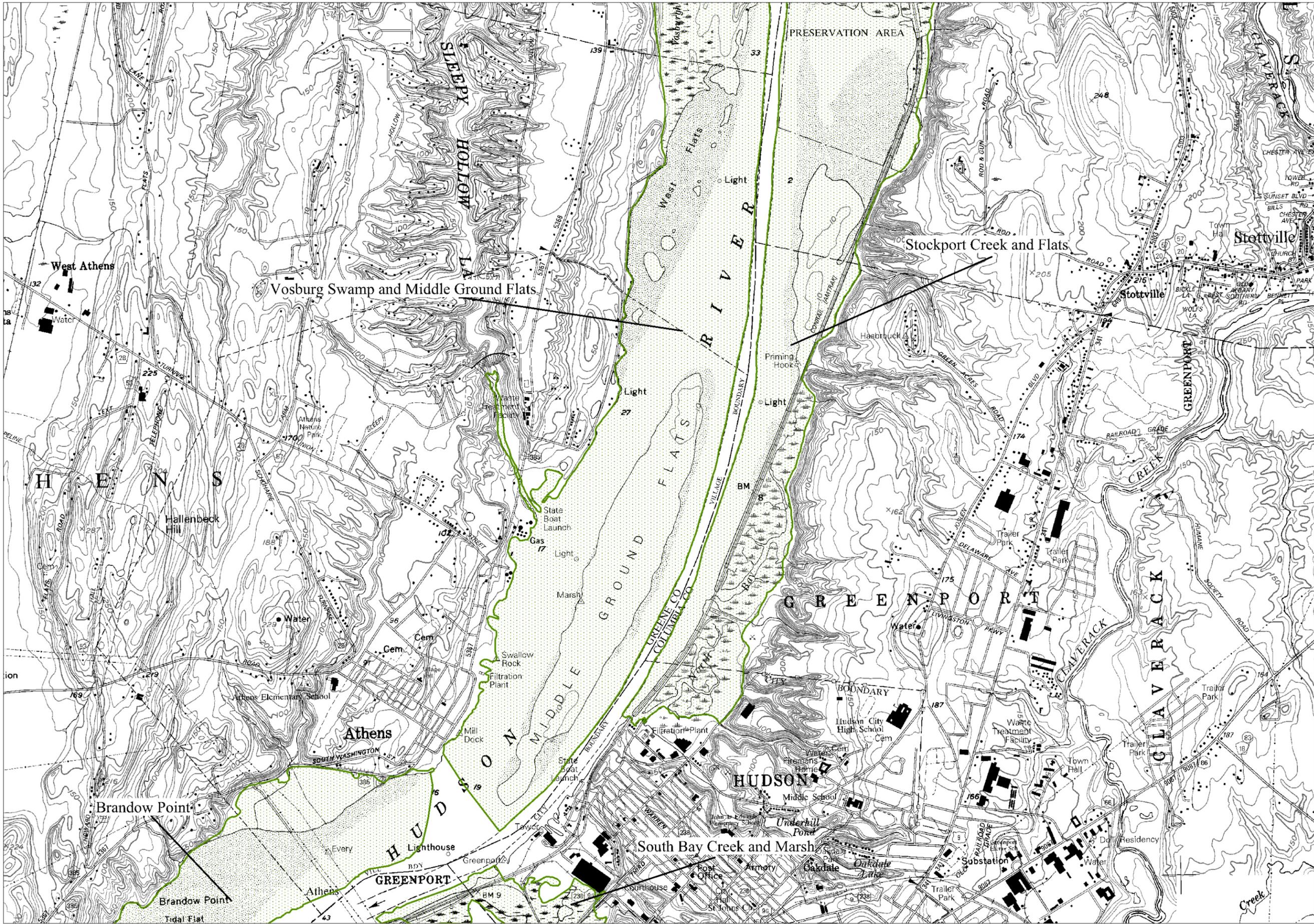


### Significant Coastal Fish and Wildlife Habitats

Vosburg Swamp and Middle Ground Flats  
 (In Part) part 1 of 2  

 Stockport Creek and Flats (In Part)





**Significant Coastal Fish and Wildlife Habitats**

- Vosburg Swamp and Middle Ground Flats (In Part) part 2 of 2
- Brandow Point (In Part)
- South Bay Marsh (In Part)
- Stockport Creek and Flats (In Part)

