

SECTION III

SIGNIFICANT HABITATS POLICIES #7-8

A. INTRODUCTION

East Hampton is home to an extraordinary array of wildlife and plants, some rare and endangered, which are an intrinsic part of its heritage. This policy section includes a general description of the Town's ecological communities as well as detailed inventories of the habitats and sensitive species found within the 12 reaches of the coastal area. State and locally designated Significant Coastal Fish and Wildlife Habitats (SCFWH) are identified, and the State's Coastal Policies are adapted for local conditions. State **Policy #7** and local **Policies #7A and #7B** are intended to protect Significant Coastal Fish and Wildlife Habitats and the Town's rich diversity of native flora and fauna.

The following abbreviations are used to describe species status:

E	Listed as Endangered by NYS
T	Listed as Threatened by NYS
SC	Listed as Special Concern by NYS
E-FED	Listed as Endangered by federal government
T-FED	Listed as Threatened by federal government

The flora and fauna are identified in the text by the common name. Latin names are provided in the summary tables.

B. TOWNWIDE DESCRIPTION OF FLORA AND FAUNA

1. Geologic Setting

The East End of Long Island is a complex ecosystem consisting of physical (non-living) and biological (living) components and their interactions. The physical components include the open waters and embayments of Gardiners Bay, Napeague Bay, Block Island Sound and the Atlantic Ocean, and the coastal lowlands, headlands, bluffs, adjacent upland areas and small offshore islands. These features continue to develop and change through the action of tides and offshore currents, weathering from precipitation and surface runoff, and the effects of human development. The biological components include the plants and animals in a wide range of ecological communities in and around the East End.

Long Island lies on the boundary between the ancient rocks of New England and the more recently formed sediments of the coastal plain that stretches along the East Coast from Florida to New York. Long Island itself was created by the vast forces of ice sheets which covered the region during two glacial advances. The retreating ice sheets left behind the geologic features, moraines, and glacial outwash deposits that dominate the topography and surface soils of Long Island today. Long Island is marked by two terminal moraines that indicate the extent of the glaciers' progress. The Ronkonkoma moraine stretches from Lake Success to Montauk and marks the southern reach of glaciation in the region. The more northerly Harbor Hill moraine extends from Brooklyn to Orient Point.

The outline of the coastline began to emerge about 20,000 years ago, as the waters of the Atlantic flowed into the breach formed by the land forms rising in the wake of the retreating glaciers. The present shoreline was formed in the last 3,000 years as the rise in sea level and land surface stabilized. As the shoreline began to take shape, embayments and shallows formed which supported a vast system of wetlands. When the last glacier finally melted, approximately ten thousand years ago, pioneer arctic plants followed the receding ice. As the climate warmed, more southerly species became established. The process continues to this day with the result that a wide variety of plants and animals, including both northern relicts and southern pioneer species, occur on Long Island (Peters, 1973).

The South Fork of Long Island is the richest area in New York State for rare plant species, a good percentage of which occur in East Hampton; one of these, sandplain gerardia is listed as a Federally Endangered species. Many of New York State's species of Endangered, Threatened and Special Concern Animals occur at one time or another during the year over the lands or in the waters of East Hampton. The Town also contains many species of commercial and recreational importance. The integrity of native upland and aquatic communities is an important factor in the Town's economic well-being.

2. Ecological Communities

The following sections contain brief descriptions of the various ecological communities and the plants and animals found within the Town's coastal area and an analysis of their distribution within each reach. This is followed by an analysis of those significant ecological communities within East Hampton that have been recognized on the local, county and state levels.

To appreciate the complexity of East Hampton's living components, it is useful to recognize the region's many ecological communities, and to understand how various ecological communities interact as ecological systems and complexes. An ecological community can be defined as a variable assemblage of interacting plant and animal populations that share a common environment (Reschke, 1990, pg. viii). The ecological communities within the Town of East Hampton can be categorized in a number of different ways:

(a) Site Types

The Town of East Hampton Comprehensive Plan (Town of East Hampton, 1984) organizes the town's upland areas into site types. These are defined as "subregions which share common characteristics and capabilities. The major influences and characteristics which distinguish each site type are soil, water, vegetation and land form". The Comprehensive Plan identifies the following twelve site types:

<i>Estuarine</i>	Semi-enclosed bodies of coastal water where fresh and salt water mix.
<i>Beaches and Dunes</i>	A dynamic land form composed of sand which is easily transported by wind and water and is subject to the forces of waves, ocean currents and wind.

<i>Moorlands</i>	A maritime dwarf forest characterized by the dominance of shad bush (<i>Amelanchier spp.</i>) and interconnected perched ponds and wetlands.
<i>Krumholz Forest</i>	A maritime influenced forest characterized by a low, wind-clipped canopy.
<i>Downs</i>	One of the few remaining natural prairies in New York State.
<i>White Pine Forest</i>	A native white pine forest, the only example of this site type on Long Island.
<i>Deciduous Forest</i>	Oak-hickory woods containing varying number of beech, birch, dogwood, tupelo and red maple depending on the location.
<i>Pine Barrens</i>	A fire dependent, pitch pine and scrub oak vegetation association with dry and infertile soils, roughly corresponds to the location of the prime aquifer recharge areas.
<i>Prime Agricultural Land</i>	Areas of prime agricultural soils capable of being farmed.
<i>True Groundwater Table Pond</i>	The visible portion of the groundwater reservoir.
<i>True Groundwater Table Streams</i>	Streams fed by groundwater.
<i>Perched Water Table</i>	Wetlands, ponds or streams that occur over clay strata or clay lenses above the true groundwater table.

(b) Aquatic Site Types

There is no major work that describes all of East Hampton's aquatic communities. However, these could be categorized as follows (Hassler, Penny, 1989):

<i>Bays and Harbors</i>	Bar-built estuaries or drowned river valleys. Salinities vary from 15 - 30 ppt., serve as nurseries for migratory fish. Prime area for shellfish. High species diversity. Often bordered by marsh ecosystems.
<i>Ocean Edges</i>	Dynamic underwater land form. Salinities greater than or equal to 30 ppt. Characterized by long shore currents and migration of sand. Low species diversity.
<i>Fresh Ponds</i>	Depressions formed by glacial deposits of ice or low elevations which are surrounded by higher elevations. These depressions either catch rain and runoff or expose a portion of the water table.
<i>Coastal Ponds</i>	Enclosed bodies of coastal water. High species diversity. Can be seasonally influenced by surrounding coastal water due to spring tides.
<i>Streams</i>	A directional, confined, freshwater flow across and from a source to an escapement. Low species diversity.
<i>Tidal Creeks</i>	A directional, confined flow of seawater that reverses its direction according to tidal flow. Low species diversity, high productivity.

Springs and Seeps

Groundwater that trickles out the side of banks or slopes. Low species diversity. Support unique floral communities.

(c) New York Natural Heritage Program

The categorization of specific ecological communities within East Hampton can also be achieved using the more comprehensive classification system developed by the New York Natural Heritage Program (Reshke, 1990). The classification is organized by "systems" and each system is composed of "subsystems" which are in turn composed of many community types. A wide variety of different systems, subsystems and ecological communities are identified in East Hampton. The classification is designed to be used by biologists to identify communities in the field and can be used in combination with the Natural Heritage ranking system to gauge the relative rarity of community types and to help make natural resource management decisions.

The following ecologically significant natural communities have been identified and documented through field work within East Hampton by the New York Natural Heritage Program:

Maritime Grassland	Coastal Plain Pond Shore	Brackish Intertidal Shore
Maritime Oak-holly Forest	Maritime Interdunal Swale	Brackish Tidal Marsh
Maritime Heathland	Coastal Salt Pond	Salt Marsh

(d) Ecological Complexes and Significant Coastal Fish and Wildlife Habitats

Although ecological communities are identified as units, they are not discrete. Individual ecological communities are linked through geophysical, biochemical, and biological characteristics with other ecological communities to form larger ecological systems. These ecological systems can be grouped into geographic areas termed ecological complexes. Understanding these ecological systems, and not solely their component communities, is crucial to effectively managing a region's living resources.

In some areas of East Hampton, assemblages of ecological communities make up rare ecological systems or provide particularly significant benefits to populations of fish and wildlife. These assemblages comprise Significant Coastal Fish and Wildlife Habitats (SCFWH), designated under the Waterfront Revitalization of Coastal Areas and Inland Waterways Act, and these can, in turn, be grouped as a series of broader regional ecological complexes. The delineation of these ecological complexes in East Hampton is based on the information on ecological communities and habitat requirements of various species presented in the Department of State's Coastal Fish and Wildlife Habitat Rating Forms and the Northeast Coastal Areas Study (USFWS, 1991).

In 1991 the USFWS identified four regionally significant ecological complexes within East Hampton:

- Shelter Island - Harbor Bays Complex
- Accabonac Harbor Area
- Gardiners Island and Point

- Montauk Peninsula Complex

Locations of these complexes are shown on [Significant Habitats Map III-1](#). These areas are comprised of groupings of SCFWH's, surrounding waters and upland areas and locally significant coastal fish and wildlife habitats.

SCFWH's are defined as geographic areas that have been determined to be of statewide significance, based on a quantitative evaluation of a combination of ecological factors. These factors include whether the area serves one or more of the following functions:

- Is essential to the survival of a large portion of a particular fish or wildlife population
- Supports populations of species which are endangered, threatened, or of special concern
- Supports populations having significant commercial, recreational, or educational value
- Exemplifies a habitat type which is not commonly found in the state or in a coastal region

Sixteen areas within the Town of East Hampton have been designated as SCFWHs by the NYS DOS (DOS, 1987):

Sag Harbor/Northwest Harbor	Napeague Harbor	Big and Little Reed Ponds
Northwest Creek	Hither Hills Uplands	Oyster Pond
Cedar Point Peninsula	Fort Pond	Napeague Beach
Alewife/Scoy Pond Wetlands	Culloden Point	Atlantic Double Dunes
Three Mile Harbor	Lake Montauk	Gardiners Island
Accabonac Harbor		

Locations of these designated SCFWHs are illustrated on [Significant Habitats Map III-1](#). Not all of the designated SCFWHs are located within an assemblage of communities identified as regionally significant ecological complex.

In addition, the Town of East Hampton has designated five Locally Significant Coastal Fish and Wildlife Habitats. These areas have been assessed using the same methodology as the State designated SCFWH's. This assessment showed that although these areas had not been State designated, they were of equivalent local importance. These locally designated SCFWH areas are:

Three Mile Harbor	Montauk Point	Wainscott Pond
Fresh Pond-Bell Estate Wetlands	Georgica Pond	

Locations of these Locally Significant Coastal Fish and Wildlife Habitats are also denoted on [Significant Habitats Map III-1](#), opposite.

Although the ecological complexes and individual habitats of East Hampton continue to support large and healthy assemblages of plants and animals, advancing development has destroyed, fragmented, or otherwise impaired many of the original natural communities. Development has modified the physical characteristics of shoreline and upland areas, removed food sources and cover, introduced non-indigenous species, degraded the waters of the Town, and otherwise altered the natural environment.

Impairments to the ecological complexes and individual habitats can be categorized as follows:

- Physical loss:* Immediate physical loss of elements within ecological complexes is the most obvious impact and also may be referred to as a primary impact.
- Degradation:* Degradation of elements within ecological complexes does not refer to the outright physical loss of these elements, but rather to a negative change in the quality of these elements, caused by factors within or adjacent to a complex. This degradation usually occurs over a more extended period of time than with a physical loss and also may be referred to as a secondary impact.
- Functional loss:* Functional loss results not from major physical changes or even from changes in the basic quality of elements within a complex, but rather from inappropriate adjacent or internal uses (homes, marinas, various recreational uses) that are disruptive to certain species of animals and cause a change or shift in their activities.

As will be seen in the detailed examination of the ecological complexes and individual habitats, all three types of impairments have had and continue to have negative impacts on the Town's natural coast.

The following narrative identifies the main features of the ecological complexes, component habitats and individual habitats in each reach within the Town of East Hampton, and a consideration of activities likely to impair them. Information has been extracted from the Northeast Coastal Areas Study (USFWS, 1991) and the Department of State's Coastal Fish and Wildlife Habitat Rating Forms (DOS, 1987).

C. DETAILED REACH INVENTORY

1. Ecological complexes and Significant Coastal Fish and Wildlife Habitats

The location of the Ecological Complexes and Significant Coastal Fish and Wildlife Habitats are illustrated on [Significant Habitats Map III-1](#).

(i) Reach 1**(a) Shelter Island - Harbor Bays Complex***Location:*

This habitat complex of land and waters is located between the two eastern forks of Long Island, and includes portions of Shelter Island, Shelter Island Sound, Sag Harbor Bay, Northwest Harbor and Gardiners Bay and a narrow section of coastline along the bay shoreline in the vicinity of Sag Harbor. This habitat complex is located in the Towns of East Hampton, Southampton, and Shelter Island. The area of the complex located within East Hampton is situated in Reach 1.

General habitat description:

There are three principal habitat units within this complex: Shelter Island; Open Bay Water; and South Fork Wetlands and Beaches. The larger peninsular area of Shelter Island is included entirely within the Mashomack Preserve and contains some of the finest examples of undisturbed coastal ecosystems in the region. This area contains a large diversity of habitats from mature deciduous forest and an extensive system of freshwater and brackish wetland to coastal beaches, dunes and bluffs. Deciduous forests are particularly diverse on Shelter Island, and are primarily dominated by oaks, of which scarlet, red, black and chestnut oaks are the most characteristic. The ground layer is dominated by dwarf heaths, mostly black huckleberry and blueberries. Sand and pebble beaches and dunes in the area are often sparsely vegetated closest to the water and increasingly vegetated away from the water with such characteristic species as beach grass, seaside goldenrod and beach pea. Freshwater wetlands include shrub swamps of sweet pepperbush, swamp azalea and highbush blueberry, white pine and red maple swamps, and freshwater marshes of diverse floristic composition, with many species of ferns, grasses, sedges and herbs.

The embayed areas of Sag Harbor and Northwest Harbor, as well as the portions of Shelter Island Sound and Gardiners Bay included within the boundary, are broad expanses of moderately shallow water, ranging in depth from 6 to 20 feet, and bordered by mostly undeveloped lands and tidal marshes. Mean tidal range in this area is approximately 2.5 feet. The marshes at Northwest Creek display classic marsh vegetation, with cordgrass, groundsel bush and marsh elder grading into oak and pitch pine forests. Alewife and Scoy Pond wetlands on the South Fork shore consist of a network of freshwater and brackish ponds, kettles and creeks with a diverse assemblage of swamps, marshes and aquatic vegetation.

Significance/uniqueness of area:

This area, particularly the eastern section of Shelter Island, contains one of the highest nesting densities and numbers of osprey (T) in the region, second only to Gardiners Island. It is likely this population will continue to expand under present conditions. The sand beaches of Mashomack Preserve, Cedar Point, Northwest Creek and others in the reach are regionally important, though seasonally variable, nesting beaches for piping plover (E, T-FED) and least tern (E). Sea-beach knotweed, a regionally rare plant, also occurs on beaches in this area. The tidal marshes and freshwater wetlands are used extensively as feeding areas for colonial wading birds and overwintering waterfowl, and American black ducks nest here. The open bay waters and tidal

marshes along the shoreline support large numbers of wintering waterfowl of regional significance, including common loon (SC), American black duck, mallard, Canada goose, greater and lesser scaup, common goldeneye red-breasted merganser, bufflehead, old squaw and canvasback.

Northern diamondback terrapins (SC) feed and nest in the tidal marshes and sandy creek banks throughout the area, particularly around Coecles Harbor. Recent evidence indicates that the waters and bay bottoms of the Peconic Bays, Gardiners Bay and other bodies of water in this area may serve as significant summer feeding and nursery habitat for juvenile Atlantic Ridley (E, E-FED) turtles, one of the rarest sea turtle species. Harbor seals use several rock areas in Sag Harbor Bay and Northwest Harbor as haulouts during winter and early spring, often in fairly large concentrations. The harbor areas and bays are also productive habitats for finfish and shellfish, supporting a regionally significant commercial shellfishery for bay scallop and, to a lesser extent, American oyster. These waters serve as important nursery and feeding areas for weakfish, winter flounder and porgies or scup. Scoy and Alewife Ponds and their associated stream system are one of the few remaining alewife spawning areas on Long Island.

In addition to its significant fish and wildlife populations, this area, particularly Shelter Island, contains forests and other vegetation types that are both unusual in their composition and associations as well as being relatively undisturbed and well-developed. Examples include a nutrient-poor white pine swamp with several northern plant species growing in association with it, and a maritime oak forest exposed to salt spray with a shrub under story dominated by black huckleberry and bayberry.

Threats:

Residential development along the South Fork shoreline in this area poses a potential threat to water quality and elimination of shoreline habitat of regionally important fish, wildlife and plant species. The impressive and growing population of ospreys in the area attests to the present quality of their nesting and feeding habitat. It could, however, be reversed by poorly-planned development or shoreline construction. Human disturbances to nesting beaches of piping plovers (E, T-FED) and terns, in the form of destruction of nests or eggs through trampling, off-road vehicles, boat landings, vandalism or pets, are a common problem throughout the area and can lead to seasonal or even permanent abandonment of nesting sites. Vegetation succession can also lead to seasonal or even permanent abandonment of nesting sites if they become unsuitable for nesting. Ospreys (T) are also affected by human disturbances during the nesting and fledging periods.

Conservation considerations:

Protection of water quality and significant aquatic habitats should be given the highest priority to ensure the continued high value of this area to wintering and migrating waterfowl, shellfish spawning and juvenile finfish, marine and estuarine turtles, nesting waterbirds and ospreys (T). Protective measures should include the full array of available mechanisms, including regulatory and permitting overview, enforcement of existing environmental laws and regulations, implementation of ecologically sound planning and zoning policies, cooperative conservation and management agreements, conservation easements, land exchanges and acquisition. There are a number of

opportunities and challenges here for various governmental agencies, conservation organizations, citizen groups and private landowners to work cooperatively to conserve and protect the living resources of this area. Disturbances to nesting shorebirds, overwintering waterfowl and ospreys should be minimized or eliminated by a variety of means, including protective fencing, area closures, posting warden patrols and public education. Where predation of nesting terns and piping plovers by pets or feral animals is a problem, predators should be removed. Objectives and tasks outlined in the piping plover recovery plan should be implemented. Conservation and management plans, including fire management for certain rare plants, for example, sea-beach knotweed, or unique plant communities on Suffolk County parklands should be developed to enhance, restore and protect regionally important natural communities.

The Shelter Island - Harbor Bays Complex contains the Sag Harbor and Northwest Harbor SCFWH, the Northwest Creek SCFWH, the Alewife and Scoy Pond wetlands SCFWH and the Cedar Point Peninsula SCFWH. All are located within Reach 1.

(b) Sag Harbor and Northwest Harbor SCFWH

Location and description of habitat:

Sag Harbor Bay and Northwest Harbor are adjoining bays on the north shore of the south fork of Long Island. The bays are located between North Haven and Cedar Point, in the Towns of East Hampton, Southampton, and Shelter Island, Suffolk County (7.5 Quadrangles: Greenport, NY; and Gardiners Island West, NY). This area is approximately 3000 acres in size, consisting primarily of open water. However, the fish and wildlife habitat also includes the tidal wetlands associated with Little Northwest Creek and its tributary Rattlesnake Creek, the embayments and creeks on the eastern shore of North Haven, and the exposed rocks located near the Sag Harbor Cove jetty. Eelgrass beds fringing the eastern shore of the North Haven peninsula to Tyndal Point are included in this habitat. The New York Natural Heritage Program has documented globally rare sea level fen at Little Northwest Creek. Water depths in most of Sag and Northwest Harbors range from 6 to 20 feet below mean low water. The harbors are bordered by much undeveloped land, including Suffolk County's Cedar Point Park, the Town-owned Grace Estate, Sag Harbor State Park or Barcelona Neck (190 acres of land surrounding Little Northwest Creek), and the Nature Conservancy's Mashomack Preserve. The only major developments along the entire shoreline of these bays are the boating facilities in Sag Harbor Cove.

Fish and wildlife values:

Sag Harbor Bay and Northwest Harbor are generally representative of the Peconic Bays ecosystem, with broad expanses of moderately shallow water. This habitat type is unlike the very shallow bays on the south shore of Long Island or the relatively narrow bays on the north shore. Little Northwest Creek is an important component of this ecosystem, contributing to the biological productivity of the area. Little Northwest Creek supports the globally rare sea level fen community. The eelgrass beds fringing the Bay and Harbor are critical for the area's important shellfishery, and as feeding grounds for several federally endangered and threatened sea turtles frequenting the region.

Sag Harbor Bay and Northwest Harbor are important to fish and wildlife throughout the year. Least tern (T), roseate tern (E), common tern (T), piping plover (E, T-Fed), and osprey (SC) feed in the harbor area. Diamondback terrapin have been observed along the harbor coastline and tidal creeks but the importance of the area to this species is not well documented. From November through March, Sag Harbor Bay and Northwest Harbor support wintering waterfowl concentrations of county-level significance. Mid-winter aerial surveys of waterfowl abundance for the ten year period 1986-1996 indicate average concentrations of over 1,295 birds in the bays each year (10,772 in peak year--1994), including Canada goose, scoter, old squaw, bufflehead, goldeneye, scaup, canvasback, merganser, American black duck, and mallard.

The undeveloped forest areas surrounding the harbors, such as the Barcelona Neck coastal oak-heath forest, are an important buffer area and support a variety of breeding birds, including black-throated green warbler, brown creeper, whip-poor-will (SC), veery, Virginia rail, wood duck, and sharp-tailed sparrow. Some of these species breed in the wetlands of Little Northwest Creek.

Concentrations of harbor seals also occur in Sag Harbor Bay and Northwest Harbor from November 15 through May 15. Exposed rocks near the Sag Harbor Cove jetty provide an important "haulout" area, which seals use for resting and sunning. This location is one of about five major haulouts around Long Island, serving as a focal point for seals feeding in the Sag Harbor Bay area.

Portions of Northwest Harbor and the Northwest Creek estuary may be important feeding and resting habitat for juvenile Atlantic ridley sea turtles (E), especially during the late summer and fall. Prey species for Atlantic ridley (lady crab, spider crab) have been documented within and outside of Northwest Creek, and these sea turtles are frequently caught in pound nets in the Northwest Harbor area. Spider crabs, also primary prey items of loggerhead (T) sea turtles, have been documented at locations in Sag Harbor Cove, and loggerheads have been caught in pound nets in the Sag Harbor Bay area. Extensive eelgrass beds occur along the shorelines of Sag Harbor Bay and Northwest Harbor, and may provide important feeding habitat for Green turtles (T), which have been documented in this area.

Sag Harbor Bay and Northwest Harbor are productive habitats for marine finfish and shellfish. This area is one of the most important bay scallop producing areas on Long Island, supporting a commercial shellfishery significant in the northeastern United States. Oysters are present in lesser numbers, providing limited recreational and commercial shellfishing opportunities. The bays serve as nursery and feeding areas (April-November, generally) for many estuarine fish species, such as weakfish, winter flounder, and scup. Northwest Harbor sustains a commercial and recreational winter flounder fishery of county-level significance. Fishing effort in the area extends from spring through fall.

The marsh habitats in the Little Northwest Creek area support southern leopard frog (SC), spotted turtle (SC), and a number of listed and rare plant species documented by the New York Natural Heritage Program, including: marsh straw sedge (*Carex hormathodes*), slender blue flag (*Iris prismatica*), reticulate nutrush (*Scleria reticularis* var *pubescens*), slender spikegrass (*Chasmanthium*

laxum), velvety lespedeza (*Lespedeza steuvei*), seabeach knotweed (*Polygonum glaucum*), silverweed (*Potentilla anserina* var *egedii*), salt marsh aster (*Aster subulatus*), long-tuberled spikerush (*Eleocharis tuberculosa*, T), and the best location in New York State of seaside goldenrod (*Solidago sempervirens* var *mexicana*, E). The rare Rambur's forktail damselfly (*Ischnura ramburii*) is also found in this area.

Impact assessment:

Any activity that would substantially degrade the water quality in Sag Harbor Bay or Northwest Harbor would affect the biological productivity of this area. All species of fish and wildlife would be adversely affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, excessive turbidity or sedimentation, and waste disposal, including vessel wastes. It is essential that high water quality be maintained in the area to protect the shellfishery. Increased fertilizer and water use, or introduction of pesticides and herbicides in the area may adversely affect water quality. Efforts should be made to control discharges of sewage from recreational boats and upland sources. Thermal discharges, depending on time of year, may have variable effects on use of the area by marine species and wintering waterfowl. Installation and operation of water intakes would have significant impacts on juvenile (and adult, in some cases) fish concentrations and sea turtles, through impingement or entrainment.

Unrestricted use of motorized vessels including personal watercraft in the protected, shallow waters of bays, harbors, and tidal creeks can have adverse effects on aquatic vegetation and fish and wildlife populations. Use of motorized vessels should be controlled (*e.g.*, no wake zones, speed zones, zones of exclusion) in and adjacent to shallow waters and vegetated wetlands.

Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development (*i.e.*, natural beach or salt marsh), may result in the loss of productive areas which support the fish and wildlife resources of Sag Harbor Bay and Northwest Harbor. Alternative strategies for the protection of shoreline property should be examined, including innovative, vegetation-based approaches. Human disturbance to marsh habitats should be limited to protect rare plants in the Sag Harbor Bay and Northwest Harbor area. Encroachment of marshes by common reed is a significant threat in the Little Northwest Creek area. Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values.

Undeveloped woodlands bordering Sag Harbor Bay and Northwest Harbor are particularly important for maintaining the water quality and habitat value of the harbors and should be preserved as a buffer zone. These upland areas, including Cedar Point County Park, Northwest Harbor County Park, the Town-owned Grace Estate, and State-owned Barcelona Neck and Little Northwest Creek, are considered core forest areas in the Town of East Hampton, essential for the preservation of forest interior bird species.

Any permanent alteration or human disturbance of the harbor seal haulout area, or obstruction of seal migrations, would adversely affect this species. Significant underwater noise, from dredging or other activities, could also preclude harbor seals from using the area.

(c) Northwest Creek SCFWH

Location and description of habitat:

Northwest Creek is located south of Northwest Harbor, on the south fork of Long Island, in the Town of East Hampton, Suffolk County (7.5' Quadrangles: Greenport, NY; Gardiners Island West, NY; and Sag Harbor, NY). The fish and wildlife habitat consists of approximately 440 acres of tidal wetlands, of which about one-third is a shallow bay (less than 4 feet deep at mean low water) which connects to Northwest Harbor through a narrow inlet. This area displays a classic zonation of natural estuarine habitats, including maritime beach and dunes, intertidal creek banks, cordgrass marshes, salt marsh shrub communities, red maple-black gum swamp, and transition areas into the surrounding oak-pine forests. The habitat area also includes approximately 25 acres of immediately adjacent upland forest areas, including coastal oak heath, coastal oak-hickory, maritime post oak, and maritime red cedar forest communities. The New York Natural Heritage Program has identified Northwest Creek as containing the best example of globally rare sea level fen in New York State. Northwest Creek is located within an undeveloped parkland owned by Suffolk County. The only human development within the area is a residential area at Northwest Landing at the northeast end of the bay. A small amount of shoreline in this area has been bulkheaded for Town of East Hampton public boat docking facilities.

Fish and wildlife values:

Northwest Creek is one of only a few examples of relatively large, undisturbed, estuarine ecosystems on Long Island, outside of the major coastal bays on the south shore. The diversity and well-defined zonation of plant communities is especially rare in the region, as is its location within a watershed which is almost entirely undeveloped. This area contains the best example of globally rare sea level fen in New York State. Northwest Creek is utilized by a variety of fish and wildlife species, including several which are of special ecological and economic significance.

Osprey (SC) have nested successfully in the area. Sharp-tailed sparrow and willet nest in the creek's high marsh zone. Other probable nesting bird species at Northwest Creek include green heron, Canada goose, belted kingfisher, horned lark (SC), and red-winged blackbird. The creek serves as an important feeding area for osprey, canvasback, American black duck, bufflehead, mallard, Virginia rail, herons, egrets, and other wildlife. Northern harrier (T) feed during winter in Northwest Creek marshes. Diamondback terrapin nest on the beach bordering the creek. The tidal creek and salt marshes provide feeding areas and cover for the terrapins during their nesting period (April-July).

The sand peninsula which separates Northwest Creek from the harbor was replenished with dredged material in 1995 and 1999, and is suitable nesting habitat for least terns (T) and piping plovers (E, T-Fed). Least terns nested here in the 1970's; during the late 1980's between 10 and 45 pairs annually were observed nesting at this location. This species was observed nesting here once again

in 1996 and 1997 after a five-year absence. Piping plover were observed nesting intermittently during the 1987-1996 period (a total of three pairs over that span), and two pairs at Northwest Creek in 1997. Town of East Hampton piping plover monitoring documented three fledges at this site in both 1998 and 1999.

The Northwest Creek estuary and nearby portions of Northwest Harbor may be important feeding and resting habitat for juvenile Atlantic ridley sea turtles (E), especially during the late summer and fall. Prey species for Atlantic ridley (lady crab, spider crab) have been documented within and outside of Northwest Creek, and these sea turtles are frequently caught in pound nets in the Northwest Creek/Northwest Harbor area. Eelgrass beds outside the creek inlet and along the nearby eastern shore of Northwest Harbor provide suitable feeding habitat for Green sea turtles (T).

The New York Natural Heritage Program has identified a number of rare and listed plant species in the Northwest Creek site. These include: bushy rockrose (*Helianthemum dumosum*, T), marsh fimbry (*Fimbristylis castanea*, T), clustered bluets (*Hedyotis uniflora*, T), slender blue flag (*Iris prismatica*), coastal goldenrod (*Solidago eliotii*), marsh straw sedge (*Carex hormathodes*), pine barren sandwort (*Minuartia caroliniana*), and the best example of slender marsh-pink (E) in New York State.

Northwest Creek is a highly productive area for marine finfish and shellfish. This area serves as a nursery and feeding area (from April 1 - November 30, generally) for many estuarine fish species, including scup, winter flounder, and bluefish. Northwest Creek is an important fishing area at the local level. All of Northwest Creek and its tributaries, however, are closed to shellfishing year round. The area is locally important for waterfowl hunting, especially American black duck, scaup, and canvasback.

Impact assessment:

Any activity that would substantially degrade the water quality in Northwest Creek would adversely affect the biological productivity of this area. All species of fish and wildlife would be affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), road runoff, oil spills, excessive turbidity, and waste disposal, including vessel waste. Forest bordering the wetlands, including Barcelona Neck, is particularly important for maintaining the water quality and habitat value of Northwest Creek, and functions as an important buffer zone.

Unrestricted use of motorized vessels including personal watercraft in the protected, shallow waters of bays, harbors, and tidal creeks can have adverse effects on aquatic vegetation and fish and wildlife populations. Use of motorized vessels should be controlled (*e.g.*, no wake zones, speed zones, zones of exclusion) in and adjacent to shallow waters and vegetated wetlands.

Alteration of tidal patterns in Northwest Creek (*e.g.*, by modifying the inlet) could have major impacts on the fish and wildlife species present. Elimination of salt marsh and intertidal areas, through loss of tidal connection, dredging, excavation, or filling, would result in a direct loss of

valuable habitat area. Dredged material disposal in this area would be detrimental, but such activities may be designed to maintain or improve habitat for certain species of wildlife. The tidal marshes of Northwest Creek are currently threatened by the expansion of *Phragmites australis*, especially along vector control ditches. Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values.

Nesting shorebirds inhabiting Northwest Creek are highly vulnerable to disturbance by humans, especially during the nesting and fledging period (March 15 through August 15). Diamondback terrapin are vulnerable to disturbance from April 1 through July 30. Significant pedestrian traffic or recreational vehicle use of the beach could easily eliminate the use of this site as a breeding area and should be minimized during this period. Recreational activities (*e.g.*, boat and personal watercraft landing, off-road vehicle use, picnicking) in the vicinity of bird nesting areas should be minimized during this period. Predation of chicks and destruction of eggs or nests by unleashed pets (*e.g.*, dogs, cats) and natural predators may also occur, and predator control should be implemented where feasible. Fencing and/or continued annual posting of shorebird nesting areas should be provided to help protect these species. Control of vegetative succession, through beneficial use of dredged material or other means may improve the availability of nesting habitat in this area.

Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development, may result in the loss of productive areas which support the fish and wildlife resources of Northwest Creek. Alternative strategies for the protection of shoreline property should be examined, including innovative, vegetation-based approaches.

(d) Alewife and Scoy Pond Wetlands SCFWH

Location and description of habitat:

Alewife and Scoy Pond wetlands are located on the north shore of the South Fork of Long Island, between Northwest Harbor and Three Mile Harbor in the Town of East Hampton, Suffolk County (7.5' Quadrangle: Gardiners Island West, NY). The fish and wildlife habitat consists of an approximately 310 acre network of freshwater and brackish ponds, wetlands, kettles and creeks interconnected by direct surface water or subsurface hydrologic connections. The wetland areas have a diverse assemblage of vegetative types including swamp forest, swamp shrub, emergent marsh, floating aquatic, and submerged aquatic communities. Scoy Pond is considered a good example of the rare coastal plain pond community by the New York Natural Heritage Program. The wetland areas are bordered by mature oak-pine forest. Alewife Pond is an approximately 25 acre brackish pond, connected to Northwest Harbor by a relatively narrow tidal creek (Alewife Brook). Scoy Pond connects to Alewife Pond through a stream. Part of the habitat is in Cedar Point County Park; this area receives much recreational use for camping and picnicking, and non-motorized boats are available for use on Alewife Pond. The Scoy Pond area is part of the Town-owned Grace Estate Park.

Fish and wildlife values:

The undeveloped kettle-type wetlands found in the Alewife and Scoy Pond area are unusual on Long Island. The Alewife and Scoy Pond habitat is important to many species of fish and wildlife.

Alewife Pond and Brook comprise a significant osprey (SC) feeding and nesting area; osprey historically have nested here in trees bordering these waterbodies. Other rare bird species which regularly use this wetland system include northern harrier (T), and 1993-1994 breeding bird surveys found scarlet tanager, cerulean warbler (SC) and acadian flycatcher. Between 19 and 28 species were found breeding in the vicinity of Scoy Pond during the 1993-1994 surveys, and an extremely high nest density of 184 nests per 100 acres was observed. Several waterfowl species, including bufflehead, red-breasted merganser, and hooded merganser, feed and overwinter here; American black duck, wood duck, mallard, Canada goose and mute swan also breed here. Eastern bluebird, broad-winged hawk, red-tailed hawk, and great horned owl nest in this area. Belted kingfishers and herons also feed in the waters of this system.

Amphibians found here include large concentrations of spotted salamander and marbled salamanders (SC), as well as the eastern spadefoot toad (SC), spring peeper, bull frog, wood frog, green frog, and gray tree frog. Reptiles found here include snapping turtle, painted turtle, spotted turtle (SC), and diamondback terrapin. A rare damselfly, the New England bluet (*Enallagma laterale*), is also found here.

The ponds and wetland system contain chain pickerel and other recreationally valuable freshwater fishes. Alewife spawn in Alewife Pond at the end of the annual run upstream from Northwest Harbor; this is one of only four documented alewife spawning runs on Long Island. The historical run between Alewife Pond and Scoy Pond is blocked by barriers and no longer occurs. The concentration of wildlife and fish in this readily accessible location provide valuable recreational opportunities for local residents and other visitors to the park. Alewife Brook and Alewife Pond are closed to shellfishing year round.

Scoy Pond supports several listed and rare plants documented by the New York Natural Heritage Program, including long-tubercled spikerush (*Eleocharis tuberculosa*, T), bushy rockrose (*Helianthemum dumosum*, T), and fibrous bladderwort (*Utricularia fibrosa*).

Impact assessment:

Any activities that would degrade water quality, increase turbidity, or alter water depths would have a significant impact on fish and wildlife species inhabiting the Alewife-Scoy Pond wetlands. All species may be affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, excessive turbidity, waste disposal (including boat wastes), and stormwater runoff. The waters of Alewife Brook and Alewife Pond have been decertified for shellfishing since 1990 because of high fecal coliform levels.

Alewife would be most sensitive April 1 through July 30, when spawning takes place. Barriers to fish migration, whether physical or chemical, have a significant effect on the biological resources of this area. Removal of barriers, such as the inadequate culvert under Alewife Brook Road, would restore the alewife run to Scoy Pond. This culvert has also promoted extensive invasion by *Phragmites australis*. Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values.

Any substantial alteration or human disturbance of the vegetative communities, such as changes to wetland or brook hydrology or configuration, filling, or introduction of invasive or exotic species, within or adjacent to the habitat, may adversely affect wildlife species in the area, especially the area's important populations of amphibians. Alterations to site hydrology, including loss of tidal connection, ditching, excavation, or filling, would result in a direct loss of valuable habitats. Collection of amphibians and reptiles from this area could also have a significant impact on these populations.

In addition, the oak-pine forest uplands bordering the peninsula form an important core forest area in the Town of East Hampton. Clearing or fragmentation of this habitat would be detrimental to forest wildlife, including breeding birds, and could affect water quality in the ponds.

Access to the area for compatible recreational uses during appropriate time periods, such as birdwatching, hiking, or recreational fishing, should be maintained. Public use of the area should be limited or managed to prevent or minimize disturbance, especially to the sensitive shoreline areas of the coastal plain pond community.

(e) Cedar Point Peninsula SCFWH

Location and description of habitat:

Cedar Point Peninsula is located on the north shore of the south fork of Long Island, between Northwest Harbor and Three Mile Harbor, in the Town of East Hampton, Suffolk County (7.5' Quadrangle: Greenport, NY; and Gardiner's Island West, NY). The fish and wildlife habitat consists of a mile-long sand peninsula extending out to Cedar Point. Cedar Point peninsula is a natural barrier spit formation, with patchy vegetative cover, with gradually sloping sand and pebble beaches, and a few areas where dredged material has been deposited. This area is bordered by mature hardwood forest. There are eelgrass beds fringing the peninsula and running along the shore east to Three Mile Harbor. Cedar Point County Park receives much recreational use for camping and picnicking.

Fish and wildlife values:

Cedar Point Peninsula is one of only several major undeveloped sand peninsulas on Long Island. Barrier beach habitats such as this are relatively rare outside of Long Island's south shore.

This area has served historically as an important nesting site for least tern (T) and piping plover (E, T-Fed). The annual average number of piping plover nesting pairs for the 1987-1996 period was three; these numbers increased from the mid-1980's through the mid-1990's, attaining a peak value of six pairs in 1996, with seven young fledged. Town of East Hampton plover monitoring documented an average of 6 nesting pairs annually between 1995 and 1999, producing an average of 3 fledges each year.

In the early 1980's, the least tern population at this site was one of the largest on the south fork of Long Island (85 nesting pairs), of county-level significance. Least tern have been largely absent from this site according to New York State Department of Environmental Conservation annual surveys

and Town of East Hampton plover monitoring; least tern were documented only during two non-consecutive years during the 1986-1996 period. However, The Nature Conservancy cites annual activity by least terns at this site, with frequent fledgings. Additional data is required to assess the importance of this site for least tern nesting.

Osprey (SC) nest on a platform at Cedar Point Peninsula and on the lighthouse at the end of the peninsula. Horned lark (SC), diamondback terrapin, and horseshoe crabs also breed at Cedar Point Peninsula. This area provides important overwintering habitat for large concentration of shorebirds, including sanderlings, ruddy turnstones, and black-bellied plovers; roseate terns (E) congregate during spring migrations. Concentrations of terns and other wildlife in this readily accessible location provide valuable birdwatching opportunities for local residents and other visitors to the park. This site supports waterfowl hunting of local significance.

Impact assessment:

Nesting shorebirds inhabiting Cedar Point Peninsula are highly vulnerable to disturbance by humans, especially during the nesting and fledging period (March 15 through August 15). Significant pedestrian traffic or recreational vehicle use of the beach could easily eliminate the use of this site as a breeding area and should be minimized during this period. Recreational activities (*e.g.*, boat and personal watercraft landing, off-road vehicle use, picnicking) in the vicinity of bird nesting areas should be minimized during this period. Predation of chicks and destruction of eggs or nests by unleashed pets (*e.g.*, dogs, cats) and natural predators may also occur, and predator control should be implemented where feasible. Fencing and/or continued annual posting of shorebird nesting areas should be provided to help protect these species. Dredged material disposal in this area would be detrimental, but such activities may be designed to maintain or improve the habitat. Control of vegetative succession, through beneficial use of dredged material or other means may improve the availability of nesting habitat in this area.

(ii) Reaches 2 and 3

(a) Accabonac Harbor Area

Location:

The Accabonac Harbor habitat complex is located along the shore of Gardiners Bay and southwest of Gardiners Island. Its components form part of a closely-related beach system. The complex is situated in Reaches 2 and 3 of the Town of East Hampton's coastal area.

General habitat description:

The Accabonac Harbor habitat complex consists of shallow open water of less than 6 feet deep, extensive tidal salt marshes dominated by cordgrass, mud flats, spoil disposal areas, and small wooded islands. The landward areas around the harbor and marshlands are mostly undeveloped woodlands. East of the enclosed water and marsh system is a barrier spit that serves as the primary boundary between the harbor and Gardiners Bay. This sandy and pebbly beach and dune complex is sparsely to moderately vegetated and in some areas contains dredging spoils. Lionhead Beach and Sammys Beach provide similar habitat. Mean tidal range in this area is approximately 2.3 feet.

Significance/uniqueness of area:

The Accabonac Harbor area serves as an important feeding area for osprey (T), both for birds nesting around the harbor and those from Gardiners Island four miles to the northeast. Other birds of special emphasis in the region believed to nest in this area are green-backed heron, American black duck, mallard, gadwall, norther harrier (T), American oystercatcher, black skimmer and seaside sparrow. The harbor is also a productive area for finfish and shellfish, serving as a nursery and feeding area for scup, summer flounder, bluefish and winter flounder. There is a commercial and recreational shellfishery for bay scallops and hard clams in the harbor. The beaches at Accabonac, as well as Sammys Beach and Lionhead Beach, are important nesting areas for least tern (E) and piping plover (E, T-FED), although the number of breeding pairs has been very variable for the latter. Sea-beach knotweed has been reported from these beaches in the past and may still occur here. Portions of Accabonac Harbor have been designated under the Coastal Barriers Resources Act.

Threats:

Ownership of some surrounding parcels by the County, Town and The Nature Conservancy, partially protects Accabonac Harbor from development threats, although water quality impacts from existing development is a significant problem. Primary concerns include animal predation (foxes, gulls, etc.) and human disturbance to nesting beaches of least terns (E) and piping plovers (E, T-FED). Such disturbances range from destruction of eggs and nests by beach-walkers, unleashed pets and off-road vehicles to deliberate acts of vandalism. Illegal or unregulated dredge spoil deposition can also be a problem at such sites. Much of the harbor area receives relatively little human disturbance although there is extensive use of the beaches for recreation.

Conservation considerations:

Protection of nesting beaches of least terns (E) and piping plovers (E, T-FED) during the critical nesting period (April through August) from human-related disturbances is a high priority. All available means should be used to prevent human-related disturbances of these areas, including fencing, area closures, posting, warden patrols, trapping of pets and other predators and public education programs. Tasks should be identified in the piping plover recovery plan that may be applicable to the beaches in this area, including to enhance, restore or protect habitat through control of vegetation in nesting areas or use of dredge spoil. Rigorous enforcement, monitoring and proactive conservation programs should be pursued to ensure long-term maintenance of water quality and fish and wildlife habitat with compatible human use.

The Accabonac Harbor Area includes parts of the Three Mile Harbor SCFWH, located in Reach 2, and the Accabonac Harbor SCFWH, located in Reach 3. The Three Mile Harbor SCFWH is located in Reach 2 and the Accabonac Harbor SCFWH is located in Reach 3. Reach 2 also includes the Three Mile Harbor Locally Significant Coastal Fish and Wildlife Habitat and Reach 3 contains the Fresh Pond - Bell Estate Wetlands Locally Significant Coastal Fish and Wildlife Habitat.

(b) Three Mile Harbor SCFWH

Location and description of habitat:

Three Mile Harbor is located two miles north of the Village of East Hampton on Gardiners Bay in the Town of East Hampton, Suffolk County (7.5' Quadrangle: Gardiners Island West, NY) The fish and wildlife habitat is approximately 1270 acres in size consisting of 1070 acres of open water and fringing wetlands and a barrier beach/wetland area of 200 acres (Sammy's Beach). The open water of Three Mile Harbor has an average depth of five to six feet during mean low water with a tidal range of 2.5 feet. The harbor's waters are stressed by increasing shoreline development, boat and watersports use, and runoff from roads, drainage and septic systems in the immediate Three Mile Harbor area. The beach area consists of sparsely vegetated dunes, dredged material areas, sand beach, salt marshes, mudflats and a tidal inlet. The mouth of Hand's Creek is a high quality example of brackish intertidal shore. Most of Sammy's Beach is owned by the Town of East Hampton and the NYS DEC, and receives moderate recreational use by pedestrians and off-road vehicles during the summer. Portions of the area have been posted historically as bird nesting areas.

Fish and wildlife values:

The bay/beach/wetland ecosystem found at Three Mile Harbor is rare in the Peconic Bays area and provides an important habitat for a large variety of fish and wildlife. Sammy's Beach has been designated as part of the national Coastal Barrier Resources System, one of 67 such areas on Long Island. Uncontrolled recreational use of the area has resulted in some degradation of the habitat.

The mainland peninsula at Sammy's Beach is an important nesting site for least tern (T) and piping plover (E, T-Fed). While piping plover were absent from this site during the late 1980's and early 1990's, there was an annual average of one nesting pair at this site between 1992 and 1996. A peak value of three pairs was documented in 1994. Town of East Hampton plover monitoring documented an average of one pair nesting at Sammy's Beach during the 1995-1999 period, producing an average of 2 fledglings.

The 1987-1996 annual average number of pairs of least tern was five, with a peak value of 18 pairs occurring in 1987. Sammy's Beach was one of the largest least tern nesting colonies on Long Island in the early 1980's; the number of breeding pairs at this location since then has been steadily declining, possibly due to plant succession. Since 1989, least tern have nested inconsistently at Sammy's Beach: nine pairs were documented in 1992, ten pairs in 1999. However, no eggs or young were produced at the Sammy's Beach site in the 1990s.

This area was an important tern nesting area since at least the mid-1970's when roseate tern (E) and common tern (T) were also present, inhabiting dune and salt marsh habitats, including Sedge Island and Dayton Island. Common tern exhibited an annual average of 22 breeding pairs over the 1987-1996 period, during which there was sporadic usage. The peak number of 67 pairs of nesting common tern occurred in 1987. Roseate tern were observed in 1987 but have not been present since. No young were produced in the Three Mile Harbor habitat area by either of these species in the 1990s.

Osprey (SC) nest at two locations in the Three Mile Harbor habitat area, at Sammy's Beach and at Hand's Creek. The Sammy's Beach location has fledged young every year between 1988 and 1999. Other nesting birds in the area include willet, American oystercatcher and black skimmer (SC). Sharp-tailed sparrow nest annually in Three Mile Harbor area salt marshes, and horned lark (SC) nest in the Sammy's Beach dunes and dredged material areas.

The inlet, fringing wetlands and open water of Three Mile Harbor provide important feeding areas to the terns and to osprey. The marshes fringing the harbor produce food for wading birds such as snowy egret, great egret, green heron, and lesser yellowlegs. Diamondback terrapin nest in large numbers on Sammy's Beach (20 individuals observed in 1999), Dayton Island and Sedge Island. Overwintering waterfowl observed between 1986 and 1996 included merganser, mallard, scaup, scoter, old squaw, American black duck, bufflehead, and goldeneye.

Large populations of finfish and shellfish inhabit the bay, marshes and tidal creeks, including summer flounder, fluke, sand lance, Atlantic silversides, mummichogs, and killifish. Hands Creek is thought to be a spawning and nursery area for the flounder. Migratory species include bluefish, weakfish, striped bass and scup. Bay scallops, once abundant in Three Mile Harbor, were not present in harvestable numbers in the 1990s. Eelgrass beds, a critical habitat for the bay scallop, covered approximately 25% of the Three Mile Harbor bottom in the 1970s, but now account for only 5% of the bottom. The most sizable bed in the harbor is located off Hand's Creek. Other shellfish include soft clams, surf clams, and American oysters. Soft clams are found mainly along the eastern shoreline south of Duck Creek; surf clams are concentrated from Dayton Island north through the channel and into Gardiners Bay; oysters occur along the banks of the mouth of Creek and are currently the most important commercial species of shellfish in this habitat area. Hard clams occur south of Sammy's Beach and in the southern end of the harbor. Hands Creek and its tributaries are closed to shellfishing between May 1 and November 30. The waters east of Sedge Island are closed to shellfishing between May 15 and October 15.

Prey for several species of sea turtle, such as lady crabs, spider crabs, and green crabs, have been observed in Three Mile Harbor in abundance. These species, which include the Atlantic ridley (E), loggerhead (T), and green (T) sea turtles, and especially juveniles, are thought to utilize the bays and embayments of the Peconic Estuary in moderate to high concentrations during certain periods of the year. Atlantic ridley turtles have been documented in Three Mile Harbor. More information is needed about the importance of this area for other sea turtle species.

Three Mile Harbor has supported an active fishery providing varied opportunities for commercial and recreational fishermen. Three Mile Harbor remains an important nursery area for the commercial species of fin and shellfish, as well as forage species, and contributes to the overall productivity of Gardiner's Bay, where fish traps have been traditionally used. Shellfish closures—year-round in the most southerly portion, seasonal in the eastern, southeastern and northeastern segments of the harbor and in Hands Creek to the west—have had a major impact on the valuable shellfisheries.

Impact assessment:

Any activity that would further degrade the water quality in Three Mile Harbor would adversely affect the biological productivity of this area. All species of fish and wildlife may be affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, excessive turbidity, waste disposal (including boat wastes), and stormwater runoff. Installation of runoff catchment structures on roads adjacent to the Harbor have likely contributed to a decrease of shellfish closures due to coliform contamination, however continued shellfish closures emphasize the need to identify and minimize all point and non-point sources of pollution in the Harbor. Pollution in upwelling groundwater, including septic system leachates, may be a significant source of contamination in the Harbor. Recent loss of important vegetated buffer areas from new development may also contribute to existing water quality problems.

Unrestricted use of motorized vessels including personal watercraft in the protected, shallow waters of bays, harbors, and tidal creeks can have adverse effects on aquatic vegetation and fish and wildlife populations. Use of motorized vessels should be controlled (*e.g.*, no wake zones, speed zones, zones of exclusion) in and adjacent to shallow waters and vegetated wetlands.

Elimination of salt marsh and intertidal areas, through loss of tidal connection, excavation or filling, would result in a direct loss of valuable habitat area. Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development, may result in the loss of productive areas which support the fish and wildlife resources of Three Mile Harbor. Alternative strategies for the protection of shoreline property should be examined, including innovative, vegetation-based approaches. Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values.

Alteration of tidal patterns in Three Mile Harbor (including changes to inlet configuration) could have major adverse effects on the fish and wildlife communities present. However, restoration of water circulation patterns may benefit the fish and wildlife species of the area. Dredging to maintain boat channels in the harbor should be scheduled between September 15 and December 15 to minimize potential impacts on aquatic organisms and to allow for dredged material disposal when wildlife populations are least sensitive to disturbance. Dredged material disposal in this area would be detrimental, but such activities may be designed to maintain or improve the habitat for certain species of fish and wildlife, especially nesting shorebirds.

Nesting shorebirds inhabiting Three Mile Harbor are highly vulnerable to disturbance by humans, especially during the nesting and fledgling period (March 15 through August 15). Significant pedestrian traffic or recreational vehicle use of the beach could easily eliminate the use of this site as a breeding area and should be minimized during this period. Recreational activities (*e.g.*, boat and personal watercraft landing, off-road vehicle use, picnicking) in the vicinity of bird nesting areas should be minimized during this period. Predation of chicks and destruction of eggs or nests by unleashed pets (*e.g.*, dogs, cats) and natural predators may also occur, and predator control should be implemented where feasible. Fencing and/or continued annual posting of shorebird nesting areas

should be provided to help protect these species. Control of vegetative succession, through beneficial use of dredged material or other means may improve the availability of nesting habitat in this area.

(d) Accabonac Harbor SCFWH

Location and description of habitat:

Accabonac Harbor is located approximately two miles east of Three Mile Harbor, on Gardiners Bay, in the Town of East Hampton, Suffolk County (7.5' Quadrangle: Gardiners Island West, NY). This approximate 660 acre area consists of shallow open water (less than 6 feet deep at mean low water), extensive salt marshes, sand spits, dredged material disposal areas, and small wooded islands. The fish and wildlife habitat is surrounded by largely developed woodlands. The sand spit north of the harbor inlet along Gerard Drive has considerable residential development on it. The Nature Conservancy owns a number of parcels in the area, totaling approximately 90 acres. The spit of land south of the inlet (forming East Harbor), Louse Point, is used as a recreational beach and a mooring area for commercial and recreational small craft. Residential development borders much of eastern, southern and southwestern portions of the harbor. Most of the Accabonac Harbor area receives relatively little human disturbance, but there is extensive recreational use of the beaches.

Fish and wildlife values:

Accabonac Harbor comprises one of the major undeveloped coastal wetland ecosystems on Long Island. Portions of the habitat have been designated as part of the national Coastal Barrier Resources System, one of only 67 such areas on Long Island. This diverse area is important to a variety of fish and wildlife, including several endangered, threatened, and special concern species.

Nine pairs of osprey (SC) nested in Accabonac Harbor in 1996; there are a number of man-made platforms placed at various locations in the harbor to encourage nesting.

Least tern (T) frequently nest on the sand spits along the eastern edge of Accabonac Harbor. The annual average number of nesting pairs of least tern for the 1987-1996 period was 16; a peak number of 48 pairs was observed in 1993. Colonies of least tern have been established at the Louse Point location (*e.g.*, 25 individuals in 1998), but have been abandoned during the nesting season. In the 1990s, few least tern offspring fledged at this and other East Hampton nesting locations.

For piping plover (E, T-Fed), the annual average number of nesting pairs for the 1987-1996 period was three; a peak number of seven pairs was attained in 1997. The numbers of nesting piping plover increased from one pair annually in the late 1980's to four or five pairs annually during the early 1990's.

Other probable or confirmed nesting bird species in Accabonac Harbor include green-backed heron, American black duck, mallard, sharp-tailed sparrow, willet, and Virginia rail. During the winter months, northern harrier (T) and short-eared owl (SC) are regularly seen foraging among the marshes in this area. Christmas counts have documented several hundred white-winged scoter, old squaw,

common eider, and red-breasted merganser in Accabonac Harbor, as well as Canada goose, horned grebe, common loon (SC), green-winged teal, bufflehead, and other bird species.

In addition to having significant bird concentrations, Accabonac Harbor is a productive area for marine finfish, shellfish, and other wildlife. The Accabonac Harbor wetlands contribute significantly to the biological productivity of Gardiners Bay. There are fringing eelgrass beds to the north of the harbor, which are likely to contribute to the overall value of the area as nursery for fish and habitat for shellfish species. The harbor serves as a nursery and feeding area (from April through November, generally) for many estuarine fish species, including scup, summer flounder, bluefish, and winter flounder. Bay scallops were formerly abundant in the harbor but populations have declined. Soft clams and hard clams are found most years in abundance, supporting a commercial and recreational shellfishery of county-level significance. Most of East Harbor is closed to shellfishing year round. All waters of Accabonac Harbor south of Sage Island, and the northernmost waters of the Harbor, are closed to shellfishing between May 1 and November 30. Horseshoe crabs breed on Accabonac Harbor beaches in large numbers during the spring. Diamondback terrapin breed in the harbor wetlands. Spotted turtles (SC) occur in the south end of the harbor, inhabiting the ditches and marshes of that area.

The New York Natural Heritage Program documents several listed and rare plant species at the Accabonac Harbor site. These include: bushy rockrose (*Helianthemum dumosum*, T), New England blazing star (*Liatris scabiosa* var *nova-angliae*), silverweed (*Potentilla anseina* ssp *egedii*), and the best example of creeping spikerush (*Eleocharis fallax*) in New York.

Impact assessment:

Any activity that would substantially degrade the water quality in Accabonac Harbor would adversely affect the biological productivity of this area. All species of fish and wildlife would be affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, excessive turbidity, and waste disposal. It is essential that high water quality be maintained in the area to protect the bay scallop and hard clam fishery. A particular threat in this regard stems from continued development of parcels surrounding the Harbor. Alterations in water circulation patterns for habitat and water quality management and improvement, including Open Marsh Water Management, may be beneficial to fish and wildlife species using the habitat.

Unrestricted use of motorized vessels including personal watercraft in the protected, shallow waters of bays, harbors, and tidal creeks can have adverse effects on aquatic vegetation and fish and wildlife populations. Use of motorized vessels should be controlled (*e.g.*, no wake zones, speed zones, zones of exclusion) in and adjacent to shallow waters and vegetated wetlands.

Alteration of tidal patterns in Accabonac Harbor could have major impacts on the fish and wildlife communities present. Accabonac Harbor has the most frequently dredged inlet and channels in the Town of East Hampton. No new navigation channels should be excavated in the area. Dredging to maintain existing boat channels in the harbor should be scheduled between September 15 and

December 15 to minimize potential impacts on aquatic organisms, and to allow for disposal when wildlife populations are least sensitive to disturbance. Dredged material disposal in this area would be detrimental, but such activities may be designed to maintain or improve the habitat for certain species of wildlife.

Elimination of salt marsh and intertidal areas, through loss of tidal connection, ditching, excavation, or filling, would result in a direct loss of valuable habitat area. Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development, may result in the loss of productive areas which support the fish and wildlife resources of Accabonac Harbor. Alternative strategies for the protection of shoreline property should be examined, including innovative, vegetation-based approaches. There is considerable potential for preservation of vegetated buffer areas and restoration of tidal wetlands in the Accabonac Harbor area. Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values.

Nesting shorebirds inhabiting Accabonac Harbor are highly vulnerable to disturbance by humans, especially during the nesting and fledgling period (March 15 through August 15). Significant pedestrian traffic or recreational vehicle use of the beach could easily eliminate the use of this site as a breeding area and should be minimized during this period. Recreational activities (*e.g.*, boat and personal watercraft landing, off-road vehicle use, picnicking) in the vicinity of bird nesting areas should be minimized during this period. Predation of chicks and destruction of eggs or nests by unleashed pets (*e.g.*, dogs, cats) and natural predators may also occur, and predator control should be implemented where feasible. Fencing and/or continued annual posting of shorebird nesting areas should be provided to help protect these species. Control of vegetative succession, through beneficial use of dredged material or other means may improve the availability of nesting habitat in this area.

(e) Fresh Pond - Bell Estate Wetlands Locally Significant Coastal Fish and Wildlife Habitat

Location and Description of Habitat:

The Fresh Pond-Bell Estate wetlands are located south of Accabonac Harbor along the shore of Gardiner's Bay. The fish and wildlife habitat is approximately 260 acres, including all of Fresh Pond and the surrounding Town property, Nature Conservancy land north of Albert's Landing Road, the Bell Estate III Reserved Area south of Quality Row and several privately owned parcels and one Reserved Area south of Fresh Pond Road. This area is identified by the following Suffolk County tax map parcel numbers: #103-6-22.4, #103-11-19.1, #126-2-25, #127-1-1, -2.3, -5, -8, -14.1, #127-2-49, and #127-5-6, & -7. The habitat includes Fresh Pond with its outlet (gut) to Gardiners Bay, the surrounding open space areas and the unnamed stream which feeds into the pond.

Fish and Wildlife Values:

The Fresh Pond estuary begins in the freshwater wetlands north of Barnes Hole Road. A stream flows south through two large reserved areas and town parkland into Fresh Pond and out through

Fresh Pond inlet to Gardiner's Bay. Vegetation is lush, including tall red maple and tupelo trees. A NYS protected species of orchid, *Platanthera ciliaris* (T), occurs in the Fresh Pond system.

These wetlands comprise a large, preserved open space within a section of the town that is otherwise largely subdivided. This open space functions as refuge and reservoir for a variety of wildlife. Breeding birds include red-tailed hawk, black duck, chuck-will's widow, screech owl, and red-bellied woodpecker as well as a variety of waterfowl and waterbirds. A great-horned owl has also been reported in the area, which also provides breeding habitat for spotted salamander and feeding opportunities for green heron, snowy egret and black-crowned night heron.

A variety of shellfish and finfish inhabit Fresh Pond, making it an important nursery for local commercial fisheries. Species of commercial importance include white bait (spearing), blue crab, soft clams, eel, herring, alewife and white perch,

Picnic areas are located north and south of the pond. These areas, as well as the beach along Gardiner's Bay are used throughout the summer by local residents.

Impact Assessment:

Any activity that would substantially degrade the water quality in Fresh Pond would adversely affect its biological productivity and the fish and wildlife species that inhabit it. All species may be affected by pollution or chemical contamination (including food chain effects), oil spills, stormwater runoff, septic system infiltration, etc. Any substantial alteration or human disturbance of the vegetative communities within or adjacent to the habitat may adversely affect the habitat and fish and wildlife species in the area. Use of pesticides and introduction of exotic species should therefore be discouraged. If after careful study, reduction of insect or other pest populations is deemed necessary, biological controls should be utilized, with pesticides considered only as a last resort. Activities that improve water quality, such as catchment of road run-off or improved tidal flushing through the gut, contribute to enhancement of the habitat and should be included in management practices (see **Water & Air Resources Policies #30-44 and Projects**). Collection of native flora and fauna from this area could have a significant impact on important populations of these species, and should be prohibited. Access for recreation and commercial fishing should be maintained but carefully managed to minimize disturbance to the fish and wildlife habitat. This area should be considered for designation as a SCFWH by New York State during any review of designated SCFWHs.

(iii) Reaches 4, 5, 6, 7, 8 and 9

(a) Montauk Peninsula Complex

Location:

Located at the eastern end of East Hampton, this complex stretches from Napeague to Montauk Point and includes surrounding nearshore waters. The complex is situated in Reaches 4, 5, 6, 7, 8 and 9 of the Town of East Hampton's coastal area.

General habitat description:

Five ecological/geographical subcomplexes, or groupings, of sites can be identified within the greater complex as being of particular regional significance to fish, wildlife, plants or biological diversity: Napeague Harbor; Hither Hills; Montauk moorlands; embayed aquatic habitats; and nearshore open water aquatic habitats. The complex as a whole contains an impressive diversity of upland, wetland and shoreline habitats and communities of a maritime nature, including some of the largest undeveloped tracts of maritime deciduous forests in the region, including stands of the globally rare maritime oak-holly forest. The forest type is restricted in this region to south shore barrier beaches at the eastern end of Long Island and it composed of holly, black oak or beech as dominant trees, often with sassafras, and with an abundance of vines and ericaceous shrubs in the under story. Large expanses of cordgrass-dominated salt marshes and sparsely-vegetated, narrow sandy or pebbly beaches and spits occur on the northern Napeague Bay/Block Island Sound side, of the peninsula, especially in the vicinity of Napeague Harbor. On the Atlantic Ocean side the shoreline is dominated in stretches by steep bluffs or large dunes and broad expanses of sparsely vegetated or unvegetated sandy to cobbly beach. There are several types of dune and interdunal plant communities in this area, for example, beach grass-dominated ocean dunes, mixed associations of beach heather, bearberry and bayberry in interdunal areas, and extensive stands of pitch pine and oak woodlands. One of the most characteristic, interesting and regionally significant natural communities is maritime grassland, which is well-developed on the Montauk Peninsula and often occurs as part of a mosaic of other maritime plant communities, particularly heathlands and shrublands, comprising what are collectively referred to as moorlands. Maritime grasslands are under the influence of a maritime climate, which is generally dominated by turf-forming grasses such as little bluestem, common hairgrass and poverty-grass, often with low heath shrubs and reindeer moss.

The embayed aquatic habitats include both estuarine-brackish water and freshwater systems. Napeague Harbor, Lake Montauk and Oyster Pond are brackish, with openings into Block Island Sound; Big and Little Reed Ponds are transitional between brackish and freshwater ponds; and Fort Pond is freshwater. Lake Montauk, nearly 900 acres in size, supports a substantial growth of eel grass. Waters and bottom habitats in the nearshore areas here are fully exposed to storms and open ocean conditions. The mean tidal range of the open ocean waters at Montauk Point is 2.0 feet (0.6 meters).

Significance/uniqueness of area:

The maritime moorlands and forest communities of the Montauk Peninsula are regionally significant and noteworthy not only for their uniqueness and restricted geographical occurrence, but because of the relatively pristine condition in which they are found here. These communities, which are in themselves rare, provided essential habitat for a number of regionally and globally rare plant species, including sandplain gerardia (E, E-FED), found here in maritime grasslands, Nantucket serviceberry (E) and New England blazing-star, both candidates for listing under the U.S. Endangered Species Act, and bushy rockrose (T). The Walking Dunes area, just east of Napeague Harbor, is of regional significance and contains outstanding examples of maritime interdunal swales. The rare curly grass fern (E) is found in this community.

Sandy and gravelly beaches along the Atlantic Ocean and Block Island Sound shorelines are important nesting areas for a diversity of colonial nesting birds of special emphasis in the region, including roseate tern (E, E-FED), piping plover (E, T-FED), least tern (E), common tern (T), black skimmer and American oystercatcher. Sea-beach knotweed and sea-beach pigweed, the latter a candidate plant species for listing under the Act, have also been reported from beaches in this same area. Barrier beaches in the Napeague Harbor system have been designated under the national Coastal Barriers Resources Act.

The nearshore open waters surrounding Montauk Point provide regionally significant and critical wintering waterfowl habitat and concentration area and contain extensive beds of blue mussel and kelp. Found here in significant numbers, particularly in winter are several species of special emphasis in the region, such as common loon (SC), common eider, white-winged scoter, surf scoter, black scoter, bufflehead, common goldeneye, great cormorant and red-breasted merganser. Also occurring here regularly during the winter are harlequin duck and king eider. On the Block Island Sound side of the peninsula, in somewhat more protected areas, American black ducks and old squaw occur in large wintering concentrations. Peregrine falcons (E, E-FED) are common migrants during the fall and spring. Gray and harbor seals often use the rocks around Montauk Point as haulout areas. Recent studies indicate that the nearshore waters within Peconic and Gardiners Bays, Block Island and Long Island Sounds and off Montauk Point are important feeding and nursery habitats for juvenile Atlantic Ridley sea turtles (E, E-FED) and perhaps for other sea turtles as well, including loggerhead (T, T-FED). The blue-spotted salamander, a rare glacial relict, is found in this region only on the Montauk Peninsulas, where it may occur locally in fairly high densities.

The open waters of the embayed ponds and harbors are important waterfowl wintering areas for greater and lesser scaup, red-breasted and common merganser, Canada goose, American black duck, bufflehead and common goldeneye. These same areas and associated marshes are productive nesting and feeding areas for American black duck, least bittern (SC), mallard, osprey (T), and northern harrier (T). Finfish and shellfish populations in both nearshore and embayed aquatic habitats in this area are diverse and abundant, particularly bluefish, weakfish, fluke, winter flounder, striped bass, hard-shelled clams, American oysters and bay scallops. The pond and stream system of Big and Little Reed Ponds is one of the few spawning areas on Long Island for alewives.

Threats:

Although much of this area is under public ownership, there are several privately-held sites of regional significance to fish, wildlife or plant species. Poorly-planned development could result in the destruction or degradation of aquatic and terrestrial habitats of species of special emphasis. Suppression of wildfires, essential to the maintenance of regionally important maritime and inland communities, could result in vegetation changes and consequent loss of the characteristic biota of these communities, including several rare plants dependent on fire.

Nesting populations of colonial waterbirds and piping plovers (E, T-FED) on sand or gravel beaches in this area, particularly around Napeague Harbor and the Atlantic Ocean beaches, are especially vulnerable during the nesting season (April through August) to human-caused disturbances such as

trampling or destruction of nests from beach-walking, picnicking, boat landings, off-road vehicle use, predation by dogs and cats, and unregulated dredge spoil disposal. The nearshore and embayed open water habitats and associated waterfowl and marine mammal populations surrounding the Montauk Peninsula are vulnerable to oil spills, contaminants, waste disposal, boat and ship traffic and dredging activities.

Conservation considerations:

Attention needs to be directed towards the continued protection of the offshore waters around Montauk Point, particularly as regards the area's regionally significant concentrations of wintering waterfowl, especially seabirds, sea turtles and marine mammals. This high-risk ocean-fronting area is subject to the full fury of winter storms and hurricanes and would be extremely vulnerable to an oil spill, ship collision or contaminant discharge that, at certain times of the year, could result in devastating impacts on fish and wildlife populations throughout the region. Comprehensive containment and response plans and procedures should be developed and equipment placed in readiness to ensure the protection of this area and its living resources in the event of such a catastrophe. In recognition of the history of shipwrecks, weather and navigational hazards, and the extraordinary vulnerability of habitats in the area, the Town shall encourage the U.S. Department of Transportation to establish a Tanker-Free Zone in the Block Island Sound waters between Block Island and Montauk (see **Surface Water Quality Policy #36**, Shipment and Storage of Petroleum and Other Hazardous Wastes, and **Projects**).

Disturbances to wintering and nesting bird populations need to be minimized or eliminated entirely, particularly for colonial beach-nesting birds such as roseate terns (E, E-FED), least terns (E) and piping plovers (E, T-FED). Human intrusions into beach nesting areas during the critical nesting season (April through August) should be prevented using a variety of methods, including protective fencing, posting, warden patrols and public education. When determined to be a problem, as it is at most mainland-connected nesting beaches, predator removal should be instituted. Those tasks and objectives of the piping plover and roseate tern recovery plans that might be applicable to beaches and nesting populations of these species in this area should be undertaken, including restoration or enhancement of degraded sites.

Many of the public parklands are in need of specific resource management plans directed at their long-term conservation. Perpetuation of the area's unique maritime communities and associated rare plants, particularly those in which fire has historically played an important ecological role, such as grasslands and pinelands, needs to be the primary management goal for the individual sites and the complex as a whole. Fire management plans, among others, need to be specifically developed for the full spectrum of ecologically significant sites, utilizing the experience and talents of The Nature Conservancy and other groups in cooperation with State and County park managers and private landowners in the vicinity.

While more than half of the land on the Montauk Peninsula is publicly-owned, including the majority of significant sites, some of the regionally important sites are privately-owned and vulnerable to development or mismanagement of the resources. Opportunities should be sought by governmental

agencies and private conservation organizations to develop cooperative agreements, secure conservation easements, implement zoning restrictions or planning policies, engage in land exchanges, acquisitions or other options to ensure the long-term conservation and protection of these unique sites (see **Development Policies #1-6** and accompanying recommendations from the Town Open Space Plan).

The Montauk Peninsula Complex includes the Napeague Harbor SCFWH, located in Reach 4, the Hither Hills Upland SCFWH, Fort Pond SCFWH, and Culloden Point SCFWH, located in Reach 5, the Lake Montauk SCFWH and the Big and Little Reed Ponds SCFWH, located in Reach 6, and the Oyster Pond SCFWH in Reach 7. The Complex also includes the Montauk Point Locally Significant Coastal Fish and Wildlife Habitat, located in Reaches 7 and 8.

(b) Napeague Harbor SCFWH

Location and description of habitat:

Napeague Harbor is located on the north shore of the south fork of Long Island, approximately five miles west of the hamlet of Montauk, in the Town of East Hampton, Suffolk County (7.5' Quadrangles: Gardiners Island East, NY; and Napeague Beach, NY). The fish and wildlife habitat includes the entire harbor, Napeague Meadows, and Hicks Island, most of which are within the undeveloped Napeague State Park. The habitat also includes Goff Point, in Hither Hills State Park. This approximate 1,300 acre area contains relatively shallow open water (less than 10 feet deep at mean low water), eelgrass beds, a large expanse of salt marsh, upland meadows, and sparsely vegetated sand and pebble peninsulas. The rare sea level fen plant community is found at this site. Napeague Harbor is generally bordered by undeveloped land, with the exception of small residential areas on the southeast and west sides.

Fish and wildlife values:

Napeague Harbor is one of the least developed of several large coastal bays in eastern Long Island. A portion of the habitat has been designated as part of the national Coastal Barrier Resources System, one of 67 such areas on Long Island. This area is a high quality and productive estuarine ecosystem, supporting a diversity of fish and wildlife species that is rare on Long Island, outside of the major coastal bays on the south shore.

Napeague Harbor is an important nesting and feeding area for many migratory bird species. Osprey have historically nested in Napeague Meadows; in 1996 2 pairs of osprey (SC) nested here using a man-made nesting platform placed in the marsh and the old IT&T tower. These sites fledged 4 osprey in 1999.

Hicks Island and Goff Point are important nesting areas for piping plover (E, T-Fed), least tern (T), roseate tern (E), common tern (T), black skimmer (SC), herring gull, great black-backed gull and horned lark (SC). The annual average number of pairs of piping plover nesting at this location during 1987-1996 was three; the annual number of nesting pairs of this species has increased steadily from one or two pairs in the mid-1980's to five or six pairs annually in the mid-1990's. Town of East

Hampton plover monitoring documents an annual average of 2 plover pairs nesting at Hick's Island between 1995 and 1999, with an average of 2 fledglings annually.

During the early 1980's Napeague Harbor supported one of the 10 largest common tern colonies and one of the 5 largest roseate tern concentrations on Long Island. Several hundred pairs of common tern nested at this location annually during the 1988-1990 period; however, these numbers declined sharply to a low of two pairs in 1997. Roseate tern were observed nesting in the Napeague Harbor area during the late 1980's (16 to 36 pairs), but since 1992 have not nested. An annual average of 40 nesting pairs of least tern were observed at this location during the 1987-1996 period. The annual number of least tern nesting pairs increased from the late 1980's through the early 1990's to reach a high of 98 pairs; however, this species nested sporadically at this site in the late 1990s.

Other probable or confirmed nesting bird species in the Napeague Harbor area include Canada goose, American black duck, wood duck, red-breasted merganser, northern harrier (T), fish crow, grasshopper sparrow (SC) and sharp-tailed sparrow. Locally significant concentrations of wintering waterfowl occur in open water portions of the harbor. Mid-winter aerial surveys of waterfowl abundance for the 1975-1996 period indicate average concentrations of over 100 birds in the harbor each year (676 in peak year), including scoter, American black duck, bufflehead, common goldeneye, and red-breasted merganser. In addition to these species, 1996 Christmas counts observed high numbers of old squaw and herring gull, and moderate numbers of common loon (SC), black-bellied plover, Bonaparte's gull, great black-backed gull, and ring-billed gull.

Napeague Harbor is a highly productive area for marine finfish, shellfish, and other wildlife. Sandy upland areas around Napeague Harbor provide suitable habitat for eastern hognose snake (SC). The wetlands around the Harbor support a large spotted turtle (SC) population, and eastern spadefoot toad (SC) breed in the area. The harbor serves as a nursery and feeding area (April-November, generally) for winter flounder, summer flounder, bluefish, striped bass, and scup, providing an excellent sport fishery for local residents. Healthy eelgrass beds are present along the eastern shore of Napeague Harbor, and south and southeast of Goff Point and Hick's Island, respectively. The hard clam population in Napeague Harbor is the largest in East Hampton Town. Soft clams are also abundant in the harbor, and both species are important in Suffolk County for recreational and commercial shellfishing. The once-abundant bay scallop population has undergone substantial decline.

The New York Natural Heritage Program cites an excellent occurrence of the rare seabeach knotweed at Goff Point, considered a high priority survey site; a number of rare plants occur in Napeague Meadows, including marsh straw sedge (*Carex hormathodes*), coast flatsedge (*Cyperus polystachyos* var *texensis*), marsh fimbry (*Fimbristylis castanea*, T), New England blazing-star (*Liatris scabiosa* var *nova-angliae*), pine-barren sandwort (*Minuartia caroliniana*), evening primrose (*Oenothera oakesiana*), seaside plantain (*Plantago maritima* ssp *juncooides*), sea-pink (*Sabatia stellaris*), and heart sorrel (*Rumex hastatulus*, T). This area supports an example of the rare sea level fen community.

Impact assessment:

Any activity that would substantially degrade the water quality in Napeague Harbor would adversely affect the biological productivity of this area. The water quality in this area is extremely high, and Napeague Harbor is open for shellfishing year-round. Road runoff from New York State Route 27 is identified as a significant contributor to non-point pollution in Napeague Harbor. All species of fish and wildlife would be affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, excessive turbidity, and waste disposal, including vessel wastes. A 1996 Peconic Estuary Program study recommends Napeague Harbor as an appropriate location (one of four areas) to implement eelgrass restoration; the success of this type of restoration depends primarily on water quality.

Docks may be detrimental to nearshore eelgrass beds because of shading, and review of proposed new docks in the area should be conducted with potential impacts to eelgrass beds fully considered. Unrestricted use of motorized vessels including personal watercraft in the protected, shallow waters of bays, harbors, and tidal creeks can have adverse effects on aquatic vegetation and fish and wildlife populations. Use of motorized vessels should be controlled (*e.g.*, no wake zones, speed zones, zones of exclusion) in and adjacent to shallow waters and vegetated wetlands.

Alteration of tidal patterns in Napeague Harbor could have major impacts on the fish and wildlife communities present. Dredging to maintain boat channels in the harbor should be scheduled between September 15 and December 15 to minimize potential impacts on aquatic organisms, and to allow for dredged material disposal when wildlife populations are least sensitive to disturbance.

Elimination of salt marsh and intertidal areas, through excavation, filling, or loss of tidal connection, would result in a direct loss of valuable habitat area. Invasion by *Phragmites australis*, frequently along eroding vector control ditches, is a potential threat to the tidal wetlands surrounding Napeague Harbor. Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values. Dredged material disposal in this area would be detrimental, but such activities may be designed to maintain or improve the habitat for certain species of wildlife.

Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development (*i.e.*, natural beach or salt marsh), may result in the loss of productive areas which support the fish and wildlife resources of Napeague Harbor. Alternative strategies for the protection of shoreline property should be examined, including innovative, vegetation-based approaches. Effort should be made to acquire private wetland parcels surrounding Napeague Harbor. Overnight mooring of recreational boats is prohibited by the Town of East Hampton to prevent adverse impacts to sensitive habitats and fish and wildlife populations.

Nesting shorebirds inhabiting the Napeague Harbor area are highly vulnerable to disturbance by humans, especially during the nesting and fledgling period (March 15 through August 15). Significant pedestrian traffic or recreational vehicle use of the beach could easily eliminate the use of this site as a breeding area and should be minimized during this period. Recreational activities

(e.g., boat and personal watercraft landing, off-road vehicle use, picnicking) in the vicinity of bird nesting areas should be minimized during this period. Predation of chicks and destruction of eggs or nests by unleashed pets (e.g., dogs, cats) and natural predators may also occur, and predator control should be implemented where feasible. Fencing and/or continued annual posting of shorebird nesting areas should be provided to help protect these species. Control of vegetative succession, through beneficial use of dredged material or other means may improve the availability of nesting habitat in this area.

(c) Hither Hills Uplands SCFWH

Location and description of habitat:

Hither Hills Uplands is located between Napeague Harbor and the hamlet of Montauk, on the south fork of Long Island, in the Town of East Hampton, Suffolk County (7.5' Quadrangles: Gardiners Island East, NY; and Montauk Point, NY). The fish and wildlife habitat consists of approximately 2,700 acres of undeveloped coastal land, bounded generally by Napeague State Park to the west, Napeague Bay to the west and north, the Montauk landfill to the east, and the Montauk Highway (NYS Route 27) to the south. Vegetative communities within the area include second growth and mature hardwood (oak-hickory) forest, maritime moorlands, dunelands (including the Walking Dunes), freshwater wetlands, old field ("downs"), shrublands, and an approximate 25 acre, shallow, freshwater pond (Fresh Pond). The New York Natural Heritage Program has documented high quality examples of several rare communities in the Park, including coastal oak-heath forest, coastal oak-laurel forest, globally rare maritime oak-holly forest, maritime interdunal swales, and maritime pitch pine dune woodlands. The only human developments within the area are the Long Island Railroad, a power transmission line corridor, and a network of unpaved roads and trails providing public access. Hither Hills Uplands includes nearly all of the undeveloped portion of Hither Hills State Park north of the Montauk Highway, a contiguous area of privately owned land to the east of the park, the County-owned Lee Koppelman Preserve, and the State-, County-, and Town-owned Hither Woods Preserve. Portions of the Hither Hills State Park area of this site were disturbed by fire in 1987.

Fish and wildlife values:

Hither Hills Uplands represents one of the largest undeveloped tracts of coastal upland area on Long Island, including one of the largest deciduous forests in the region. The Walking Dunes contain maritime interdunal swales of regional significance. Globally rare maritime oak-holly forest is also found in the Park.

The area provides much suitable habitat for a variety of wildlife species, including white-tailed deer, red fox, striped skunk, raccoon, gray squirrel, eastern cottontail, ruffed grouse, broad-winged hawk, mallard, wood duck, red-tailed hawk, red-shouldered hawk (SC), northern harrier (T), eastern bluebird, bobwhite quail, American woodcock, great-horned owl, Acadian flycatcher, blue-gray gnatcatcher, red-eyed vireo, eastern hognose snake (SC), spotted turtle (SC), eastern box turtle (SC), four-toed salamander and Fowler's toad. Several of these species are dependent on relatively large tracts of undeveloped forestland for their survival. A 1993-1994 breeding bird survey recorded high nest densities of black-and-white warbler, prairie warbler, blue-winged warbler, rufous-sided towhee,

and whip-poor-will (SC). In 1993, the NYS DEC selected Hither Hills State Park as one of only two sites on Long Island for reintroduction of wild turkeys.

Spotted salamanders and blue spotted salamanders (SC) are common in the area around Fresh Pond. The populations of blue spotted salamander in Montauk are unique because they are comprised of non-hybridized, sexually-reproducing animals. Most mainland populations of this species have hybridized with Jefferson salamander. Fresh Pond contains a warm water fish community, dominated by largemouth bass, yellow perch, and banded killifish. Pumpkinseed, bluegill, black crappie, brown bullhead, and smallmouth bass were stocked in Fresh Pond prior to 1994, and are now established and support a relatively productive recreational fishery. The acid nature of the pond may limit fish species diversity and production.

The New York Natural Heritage Program has documented a number of rare plant species in the Park, including Nantucket juneberry (*Amelanchier nantucketensis*, E), pine-barren sandwort (*Minuartia caroliniana*), and bushy rockrose (*Helianthemum dumosum*; T). The Walking Dunes area on the western side of this site contains excellent examples of a maritime interdunal swales community, and is of regional significance. The rare noctuid moth, *Euxoa pleuritica*, is found in the Walking Dunes.

The Hither Hills Uplands area provides significant opportunities for human use and enjoyment of fish and wildlife resources. Hunting is allowed throughout much of the area, and sportsmen from throughout Long Island come here to pursue a variety of game species, especially white-tailed deer. Relatively few public deer hunting areas exist in this region. Fresh Pond, because it is accessible to the public, is an important freshwater fishing area for residents of Long Island. Hither Hills Uplands is also locally popular for birdwatchers seeking hawks, owls, woodpeckers, and a variety of passerine bird species.

Impact assessment:

The fish and wildlife resources of Hither Hills Uplands would be affected primarily by major habitat alterations, or modification of public access to the area. Habitat modifications which substantially change the natural character of the area, such as residential, commercial, industrial, or public utility developments, would have a significant impact on many wildlife species in the area. Fragmentation of, or development within, large areas of mature woodland or wetlands would be especially detrimental, particularly to forest interior bird species that rely on large, undisturbed blocks of woodland for habitat. Any substantial habitat alterations, if other than for fish and wildlife management purposes, should be avoided in interior areas of Hither Hills Uplands.

Phragmites australis has invaded the interdunal swales in this area. Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values.

Proposed development of drinking water wells to serve Montauk could lead to a lowered water table, adversely affecting area wetlands and reducing flow in Flaggy Hole and other water table dependent areas.

Activities designed to enhance human access to the area for fish and wildlife related recreation may be compatible with protection of the existing resources. The addition of trails through the area, however, may promote the invasion of nuisance and exotic species. Uncontrolled recreational vehicle use of the area can contribute to erosion and may result in loss of habitat in Hither Hills Uplands, and should be carefully monitored and managed.

Fresh Pond and a buffer area around it should be maintained as an important component of the Hither Hills Uplands fish and wildlife habitat. The low pH of the pond makes it vulnerable to increased acidification. However, pH stabilization should not be attempted without further study. Prescribed burning within the Hither Hills Uplands site may be beneficial in maintaining rare vegetation communities and their associated wildlife species. The Town of East Hampton recommends the development of a coordinated fire management plan for state, county, town and The Nature Conservancy holdings in this area.

(d) Fort Pond SCFWH

Location and description of habitat:

Fort Pond is located on the south fork of Long Island, north of the hamlet of Montauk, in the Town of East Hampton, Suffolk County (7.5' Quadrangle: Montauk Point, NY). This freshwater pond is approximately 160 acres in size and has a maximum depth of approximately 26 feet. Fort Pond is bordered by residential, commercial, and industrial development, with only a few areas of undeveloped shoreline remaining. A public boat launch is located on the southern end of the pond.

Fish and wildlife values:

Fort Pond is the second largest freshwater pond on Long Island (after Lake Ronkonkoma) and the largest coastal freshwater pond. However, extensive land development has reduced its quality and importance to fish and wildlife from that of an undisturbed freshwater ecosystem. Signs of increased disturbance in recent years include loss of water clarity, sporadic algal blooms, invasion of nuisance vegetation, stunted fish populations, and loss of submerged aquatic vegetation.

Spotted turtle (SC) and least bittern (SC) live and breed at the pond margins and adjacent wetlands. Osprey (SC) feed regularly in the pond. There is a relatively large population of freshwater mussels in the pond. Fort Pond supports a relatively productive warm water fishery, including largemouth bass and smallmouth bass. This is one of only three significant smallmouth bass populations on Long Island. Fort Pond has also been stocked with walleye since 1997. Residents from throughout Long Island are attracted to the freshwater fishing opportunities at Fort Pond.

Fort Pond is an important waterfowl wintering area (November-March) in Suffolk County. During the 1970s and early 1980s, average concentrations of nearly 300 birds were documented in the pond each winter (1,140 in peak year), including scaup, red-breasted merganser, common merganser, Canada goose, and American black duck. The area was used sporadically during the 1990s, with observed numbers ranging from 35 to 488 individuals per year. Species included Canada geese, merganser, scoter, American black duck, redhead, and mallard. Waterfowl use of the pond during winter is determined largely by the extent of ice cover each year. Concentrations of waterfowl also

occur in the area during spring and fall migrations (March-April and October-November, respectively). In addition to waterfowl, Fort Pond is a gathering place for a variety of gull species, including Bonaparte's gull, herring gull, great black-backed gull, and ring billed gull.

The New York Natural Heritage Program has documented several listed and rare plant species at Fort Pond, including: golden dock (*Rumex maritimus* var *fueginus*, T), water penny-wort (*Hydrocotyle verticillata*, E), salt marsh spikerush, and southern arrowwood (*Viburnum dentatum* var *venosum*).

Impact assessment:

Any activities that would degrade water quality, increase temperature or turbidity, or alter water depths would impact on the fish and wildlife species utilizing Fort Pond. All may be affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, excessive turbidity, waste disposal (including boat wastes), and stormwater runoff. The watershed of Fort Pond has been degraded by point source discharges, road runoff and other non-point pollution, and clearing of vegetation. The extensive populations of waterfowl and gulls using the pond contribute a substantial level of nutrients.

The wetlands adjacent to Fort Pond are being encroached by *Phragmites australis* and purple loosestrife (*Lythrum salicaria*). Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values.

Construction activities along the shoreline or in productive underwater areas (e.g., spawning areas) may have a significant impact on the fisheries resources of Fort Pond, through sedimentation or direct loss of habitat. Warm water fish species in the pond are most sensitive to disturbance during spawning and incubation, which generally extends from April 1 through July 30. Acquisition of the few remaining vacant parcels on the shoreline should be considered. The Town of East Hampton has identified restoration opportunities associated with fringing freshwater wetlands and submerged aquatic vegetation of Fort Pond.

Elimination of public access areas could significantly reduce recreational fishing opportunities in Fort Pond. Recreational activities should be timed appropriately to minimize disturbance of sensitive habitat attributes relying on the Fort Pond habitat.

(e) Culloden Point SCFWH

Location and description of habitat:

Culloden Point consists of 222 acres located on Block Island Sound and Fort Pond Bay in northern Montauk in the Town of East Hampton, Suffolk County (7.5' Quadrangle: Montauk Point, NY). This tract was subdivided and developed in the early 1990s, resulting in the creation of 54 residential lots and 188.3 acres of protected land in a contiguous block. The protected block is a Town of East Hampton, Suffolk County, and New York State preserve, encompassing all of the property's wetlands. The fish and wildlife habitat at this site consists of varied knob and kettle terrain with a surface area consisting of about 20% wetlands and 80% uplands. The wetlands are of the riparian

and kettlehole type. The uplands are vegetated with alternating areas of oak-hickory hardwoods and brushy downs grasslands.

Fish and wildlife values:

The Culloden Point area is a relatively uncommon ecosystem type on Long Island. The varied knob and kettle terrain provides an excellent habitat for several species of fish and wildlife.

The fern covered stream banks and regularity of stream flow (running to Block Island Sound) make this an ideal habitat for certain amphibians, particularly the blue-spotted salamander. A very large group of blue-spotted salamander (SC) lives in the stream system. Forty-five individuals were found occupying one small breeding hole in 1985. A 1992 herpetological survey in the area encountered 18 individuals. Other species observed were: Four-toed salamander, spring peeper, bull frog, green frog, gray tree frog, snapping turtle, painted turtle, eastern box turtle (*Terrapene carolina*, SC), eastern ribbon snake, and eastern garter snake. The eastern newt occupies several kettleholes including the largest freshwater pond, Culloden Pond.

The habitat area is also important to several species of birds for feeding and nesting. A 1993 breeding bird survey found 25 species of breeding birds here, and is an especially important site for yellow-billed cuckoo, blue-grey gnatcatcher, American goldfinch, and blue-winged warbler. Nest density reached 137 nests per 100 acres. Great horned owls breed in the Culloden Point habitat area; northern harrier (T) is a probable breeder but is not confirmed. Colonies of bank swallows nest in the coastal bluff faces of the area, and wild turkeys and ruffed grouse are found at this site. The littoral zone of Culloden Point is a prime feeding area for the common loon (SC) which overwinters in large numbers (several hundred) in the inshore waters between Montauk Point and Napeague Harbor each year. Other overwintering species observed in the area include Canada goose, common eider, white-winged scoter, bufflehead, red-breasted merganser, old squaw, and mallard.

A variety of mammals occupy the area, most notably the gray fox which is quite rare on Long Island. The long, undisturbed coastline is an important area in the winter months as a haul-out area for harbor seals that feed in Block Island Sound and Fort Pond Bay.

The New York Natural Heritage Program has documented several listed and rare plants at this site, including scotch lovage (*Ligusticum scoticum*, E) and southern arrowwood (*Viburnum dentatum* var *venosum*).

Impact assessment:

The fish and wildlife resources of Culloden Point would be affected primarily by major habitat alterations, or modification of public access to the area. Habitat modifications which substantially change the natural character of the area, such as residential, commercial, or industrial developments which would fragment important vegetative communities, clear woodlands, or disturb wetlands vegetation, would have a significant impact on the wildlife species in this area. *Phragmites australis* is encroaching on the wetlands in this area. Control of invasive nuisance plant species, through a

variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values.

Any activity that would degrade water quality or increase turbidity in the streams and wetlands of Culloden Point would also have a significant impact on fish and wildlife resources. All species may be affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, excessive turbidity, waste disposal (including boat wastes), and stormwater runoff.

Collection of amphibians or reptiles from this area, as well as other fauna or flora, could have a significant impact on survival of species of special concern in New York State. Any permanent alteration or human disturbance of the harbor seal haulout area along the coastline of Culloden Point would adversely affect this species.

(f) Lake Montauk SCFWH

Location and description of habitat:

Lake Montauk is located three miles west of Montauk Point on the South Fork of Long Island in the town of East Hampton, Suffolk County (7.5' Quadrangle: Montauk Point, NY). Lake Montauk was the largest freshwater lake on Long Island, but it has been estuarine since its inlet into Block Island Sound to the north was permanently opened in the 1920's. The approximately 900 acre lake had a healthy growth of eelgrass on the bottom. Presently, eelgrass beds are located only in the northern and western portions of the lake. The fish and wildlife habitat also includes a small freshwater pond (Stepping Stones Pond) off the southwest shoreline of the lake. The lakeshore has been extensively disturbed by residential, commercial and marine development. The water quality is progressively deteriorating due to chronic runoff, boat wastes and increasing subsurface wastewater contributions from shoreline development.

Fish and wildlife values:

Lake Montauk was a rare ecosystem when it was freshwater but as a coastal embayment, with a maintained inlet and extensive shoreline development, it is not unusual in Suffolk County. Despite the development, Lake Montauk remains a high quality estuary supporting significant populations of fish and wildlife. A comprehensive study of the lake found nearly fifty species of birds, primarily shore and water birds, feeding, nesting, or roosting along the lake shore. Over-wintering waterfowl include common loon (SC), American black duck, red-breasted merganser, Canada goose, white-winged scoter, scaup, goldeneye and bufflehead. During the 1987-1996 period, the annual average number of waterfowl observed was 153 individuals; a peak value of 477 birds was observed in the early 1990s. Other wildlife includes the spotted turtle (SC) which resides in the freshwater tributaries and the small freshwater pond adjacent to Lake Montauk.

The Lake Montauk area provides a variety of marine and estuarine habitats for a wide diversity of fish and invertebrates. The commercial bay scallop fishery is significant on Long Island and other regions of New York State. The hard clam and bait fisheries are significant in Suffolk County. Portions of this habitat area are closed to shellfishing between April 1 and December 14, and

between May 15 and October 15. The lake is also the only enclosed embayment on the South Fork supporting a large lobster population.

Fish species that reside and are harvested in the area include bluefish, weakfish, fluke, flounder, blowfish, white bait and striped bass. Lake Montauk is an important commercial fishing port on the South Fork (in 1989 Montauk Harbor was the largest commercial fishing port in the state with respect to landing and number of vessels); the concentration of bait fish is important to this fleet.

In the vicinity of Stepping Stones Pond, the New York Natural Heritage Program has documented several listed and rare plant species, including: coast flatsedge (*Cyperus polystachyos* var *texensis*), long-tuberled spikerush (*Eleocharis tuberculosa*, T), and the best example in New York State of salt marsh spikerush (*Eleocharis halophila*).

Impact assessment:

Any activity that would further degrade the water quality in Lake Montauk would adversely affect the biological productivity and viability of the commercial fishery in this area. All species of fish and wildlife may be affected by water pollution, such as chemical contamination (including food chain effects), oil spills, excessive turbidity, waste disposal (including boat wastes) and stormwater runoff. Use of pumpout facilities in the no-discharge zone should be encouraged and enforced. Existing sources of pollution, both point and non-point, should be identified and then eliminated or reduced so as to improve water quality in Lake Montauk. The fringing wetlands around Lake Montauk have been impacted and/or lost by increased development along the lake shore. Restoration of wetlands in and around this area should be explored to reduce water pollution in the lake. Restoration opportunities may exist at this site for eelgrass beds, but improvement of water quality may be required before this is possible.

Unrestricted use of motorized vessels including personal watercraft in the protected, shallow waters of bays, harbors, and tidal creeks can have adverse effects on aquatic vegetation and fish and wildlife populations. Use of motorized vessels should be controlled (*e.g.*, no wake zones, speed zones, zones of exclusion) in and adjacent to shallow waters and vegetated wetlands.

Alteration of tidal patterns in Lake Montauk could have major impacts on the fish and wildlife communities present. Dredging to maintain the inlet and boat channels in the lake should be scheduled between September 15 and December 15 to minimize potential impacts on aquatic organisms and to allow for dredged material disposal when wildlife populations are least sensitive to disturbance. Dredging and its effects are a particular threat to submerged aquatic vegetation habitats, such as eelgrass, in Lake Montauk.

Elimination of salt marsh and intertidal areas through excavation, filling, or loss of tidal connection, would result in a direct loss of valuable habitat area. Construction of shoreline structures, such as docks, piers, bulkheads, or revetments in areas not previously disturbed by development (*i.e.*, natural beach, tidal flat, or salt marsh), may result in the loss of productive areas which support the fish and wildlife resources of Lake Montauk. Alternative strategies for the protection of shoreline property

should be examined, including innovative, vegetation-based approaches. Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values.

Also, the increasing resident mute swan population in this area may contribute to nutrient loading in small or enclosed waterbodies, and may affect usage by other waterfowl species. Mute swan control or removal may be beneficial to native waterfowl use of these waterbodies.

(g) Big and Little Reed Ponds SCFWH

Location and description of habitat:

Big and Little Reed Ponds are located northeast of Montauk Harbor, on the south fork of Long Island, in the Town of East Hampton, Suffolk County (7.5' Quadrangle: Montauk Point, NY). The fish and wildlife habitat is approximately 200 acres in size, and includes a large freshwater pond (Big Reed Pond), extensive cattail marsh, a brackish pond and marsh (Little Reed Pond), and surrounding wetlands and woodlands. Big Reed Pond supports a rich population of submerged aquatic vegetation, and Little Reed Pond supports beds of widgeon grass. A small stream flows from Big Reed into Little Reed Pond, which is connected to Lake Montauk by a tidal creek channel. Most of the habitat is located within undeveloped County parkland. The area is bordered on the west side by a landing strip for small aircraft.

Fish and wildlife values:

Big and Little Reed Ponds comprise a relatively uncommon ecosystem type on Long Island. Big Reed Pond is one of only three areas on Long Island that have been designated as National Natural Landmarks by the National Park Service. The cattail marsh adjoining Big Reed Pond is one of the largest contiguous areas of emergent freshwater wetland in the region, whereas Little Reed Pond is an undeveloped brackish wetland area. Together, Big and Little Reed Ponds represent an unusual example of the natural transition between these habitat types, and contain a relatively diverse assemblage of fish and wildlife species.

Bird species breeding in this area include northern harrier (T), least bittern (SC), Canada goose, mallard, and American black duck. Red-shouldered hawk (SC) historically bred in this area, but has not been documented recently. Immature bald eagles (T) use the area, and short-eared owls (E) frequently overwinter here. Big and Little Reed Ponds serve as valuable feeding areas for these species, as well as for osprey (SC), redhead, hooded merganser, herons, egrets, and many passerine birds.

Blue-spotted salamanders (SC) have been reported breeding in the moist wooded swales draining into Big Reed Pond. This is one of the few locations on Long Island where this species is known to occur. The populations of this species in Montauk are unique because they are comprised of non-hybridized, sexually-reproducing animals. Most mainland populations of blue-spotted salamander have hybridized with Jefferson salamander. Spotted turtles (SC) are found in the ponds and adjacent wetlands. The adjacent wetland and upland areas are valuable as hunting areas for northern harrier

and red-shouldered hawk. In addition, the rare coastal heathland cutworm moth (*Abagotis crumbi benjamini*) is found at this site.

Big and Little Reed Ponds also comprise a significant warm water fisheries habitat. This area contains one of only four documented spawning streams on Long Island for alewives, which migrate from the ocean to spawn in shallow freshwater in spring. Recreational fishing opportunities in Big Reed Pond, primarily for largemouth bass, attract residents from throughout Long Island to the area.

The New York Natural Heritage Program has documented several rare plant species in this area, including clustered bluets (*Hedyotis uniflora*, T), sandplain wild flax (*Linum intercursum*, T), pine-barren sandwort (*Minuartia caroliniana*), southern arrowwood (*Viburnum dentatum*), and the best example of water-pennywort (*Hydrocotyle verticillata*, E) in New York State.

Impact assessment:

Any activities that would degrade water quality, increase turbidity, or alter water depths would have a significant impact on fish and wildlife species inhabiting Big and Little Reed Ponds. All species may be affected by water pollution, such as chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, excessive turbidity, waste disposal (including boat wastes), and stormwater runoff. Warm water fish species would be most sensitive from April 1 through July 30, when spawning takes place. Barriers to fish migration, whether physical or chemical, would have a significant effect on the biological resources of this area. Passage into Big Reed Pond is difficult and intermittent, and removal of debris and other impediments should be considered for enhancement of migratory fish habitat.

Wildlife species would be most sensitive during the breeding season, which generally extends from April 1 through August 30. Collection of amphibians and reptiles from this area or adjacent areas could have a significant impact on an important population of blue-spotted salamanders. The introduction of exotic, non-native fish, wildlife or plant species should be prohibited.

Any substantial alteration or human disturbance of the wetland and upland vegetative communities, such as changes to wetland or stream hydrology or configuration, filling, introduction of invasive or exotic species, and/or reduction or fragmentation of woodland buffer areas within or adjacent to the habitat may adversely affect wildlife species in the area. The cattail marsh in this habitat area is the largest on the South Fork and is notable in being largely free of *Phragmites australis*. Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values. Expansions or alterations to the existing air strip could impact wildlife species and their habitat at this site.

Access to the area during appropriate time periods for compatible recreational uses of fish and wildlife should be maintained.

(h) Oyster Pond SCFWH

Location and description of habitat:

Oyster Pond is located approximately one mile east of Montauk Harbor, on the south fork of Long Island, in the Town of East Hampton, Suffolk County (7.5' Quadrangle: Montauk Point, NY). The fish and wildlife habitat is approximately 275 acres in size, including all of Oyster Pond, its headwaters, and adjacent lands up to the approximate 10 foot contour. Oyster Pond is a relatively large brackish pond, bordered by salt marsh, freshwater wetlands, maritime forest, and small tributaries and drainage swales. The New York Natural Heritage Program identifies Oyster Pond as the largest, highest quality example of the coastal salt pond community in New York State. The pond is periodically opened to Block Island Sound by natural processes. Most of the habitat is located within Montauk Point State Park.

Fish and wildlife values:

Oyster Pond is a relatively large, brackish pond, located within a completely undeveloped watershed. It is the largest, highest quality example of the coastal salt pond community in New York State. This area supports several rare species, comprising an ecological community that is unique on Long Island.

Blue-spotted salamanders (SC) inhabit several wooded swales which drain into Oyster Pond. The populations of this species in Montauk are unique because they are comprised of non-hybridized, sexually-reproducing animals. Most mainland populations of blue-spotted salamander have hybridized with Jefferson salamander. A population of southern leopard frog (SC) exists in a wetland area bordering Oyster Pond. This is one of the few locations on Long Island where this species is known to occur. Spotted turtles (SC) may also occur in the area but this has not been adequately documented. Spotted turtle are common in the watershed. The Pond is also one of the few locations on the South Fork where mink are found.

Oyster Pond is a productive nesting and feeding area for a great variety of birds including herons, egrets, waterfowl, Northern harrier (T), common loon (SC), flycatchers, swallows, thrushes, warblers, blackbirds, and sparrows. The pond serves as an important overwintering area for a number of species of waterfowl, including mallard, American black duck, merganser, bufflehead, and Canada geese. Christmas counts in the Oyster Pond vicinity have observed large concentrations (several thousand) of common eider, black scoter, surf scoter, white-winged scoter, and several hundred individuals of herring gull and great black-backed gull. Several tern species feed in Oyster Pond. Piping plover (E, T-Fed) have been observed on the beach to the north of Oyster Pond, but the importance of this area for this species has not been determined. The area provides bird-watching opportunities of local significance.

A variety of estuarine fish and shellfish species occur in Oyster Pond, including white perch, striped killifish, Atlantic silversides, horseshoe crab, American oyster, soft clam, and barnacles. The pond is uncertified for shellfishing year-round.

Several rare plant species have been documented by the New York Natural Heritage Program in the Oyster Pond area, including Mitchell sedge (*Carex mitchelliana*, E), seabeach knotweed (*Polygonum glaucum*), sea purslane (*Sesuvium maritimum*, E), and southern arrowwood (*Viburnum dentatum*).

Impact assessment:

Any activity that would degrade water quality, increase turbidity, change water depths, or alter salinity patterns in Oyster Pond would have a significant impact on fish, wildlife, and botanical resources. Former Camp Hero to the south drains into Oyster Pond, and has contributed contamination and a serious oil spill in the past. All species of fish and wildlife may be affected by pollution from chemical contamination (including food chain effects resulting from bioaccumulation), pesticides, oil spills, waste disposal, or stormwater runoff. Wildlife species would be most sensitive during the breeding season, which generally extends from April through August.

Any substantial disturbance of the upland and wetland vegetative communities within or adjacent to Oyster Pond may adversely affect wildlife populations in the area. Control of invasive nuisance plant species, through a variety of means, may improve fish and wildlife species use of the area and enhance overall wetland values. Collection of native flora and fauna from this area or adjacent areas, especially important amphibian or reptile species, would have a significant impact on the survival of several species of special concern in New York State. The level of human use of the area should be carefully managed to balance access and recreation with protection of habitat values.

Periodic opening and closing of the pond should be permitted to occur naturally. However, a sustained breach of the pond to Block Island Sound could drastically alter its salinity. A contingency plan should be developed to close an extended term breach (see also **Flooding & Erosion Policies #11-17**).

(i) Montauk Point Locally Significant Coastal Fish and Wildlife Habitat

Location and Description of Habitat:

Montauk Point is the eastern end of the South Fork of Long Island. The fish and wildlife habitat includes approximately 970 acres extending along the shoreline from Shagwong Point extending around Montauk Point along the south shore to the western edge of the bluff east of the Montauk business district. It includes the beach and bluff areas as well as the waters approximately 1,000 feet offshore. The upland areas are owned by the State of New York (Montauk Point State Park), the U.S. Government, Montauk Historical Society (Montauk Lighthouse), the Town of East Hampton and private land owners.

Fish and Wildlife Values:

The waters off Montauk Point are known throughout Long Island for the number and variety of overwintering ducks and seabirds (see Table III-4). Large rafts of scoters and mergansers are a familiar winter sight. A few of the more northern or pelagic species, including harlequin ducks and alcids, are also spotted every year. The waters also support a variety of whales and the largest population of wintering harbor seals on the east end of Long Island. The rocky shoreline provides an important haul-out area for the seals.

The dramatic bluffs along the southern shore of Montauk Point are the southernmost ocean-fronting bluffs on the Atlantic coast. These bluffs are among the few areas of Long Island that provide nesting habitat for bank swallows. The beach below them boasts the most extensive rocky inter-tidal zone on Long Island. A well developed kelp forest flourishes in this zone.

The waters off Montauk Point provide bird watching opportunities and are used intensively for surfcasting. The rocky intertidal zone along the south shore is frequented by scuba divers, and winter hikers traverse the north shore beach to view harbor seals.

Impact Assessment:

Any activity that would degrade water quality, increase turbidity, change water depths, etc. would have a significant impact on fish and wildlife resources. Wintering birds and mammals would be especially affected by water pollution, such as oil spills, chemical contamination (including food chain effects), pesticides, excessive turbidity, waste disposal, etc. Human alteration of the beach or rocky inter-tidal zone or human disturbance from pedestrian or ORV traffic at these sites would adversely affect the harbor seals, shorebirds, sea ducks and overwintering waterfowl. A plan should be devised to reduce human disturbance of shorebirds and overwintering harbor seals. Construction of erosion control structures or human disturbance of the ocean-fronting bluffs would degrade bank swallow habitat, and could lead to alteration of rocky intertidal zones.

This area should be considered for designation as a SCFWH by New York State during any review of designated SCFWHs.

(iv) Reach 10

(a) Napeague Beach SCFWH

Location and description of habitat:

Napeague Beach is located southeast of Napeague Bay, on the south shore of Long Island, in the Town of East Hampton, Suffolk County (7.5' Quadrangle: Napeague Beach, NY). The fish and wildlife habitat consists of an approximately 2 mile segment within Napeague State Park and a 1.5 mile segment of ocean beach extending east to the boundary of Hither Hills State Park. The approximately 490 acre area within the park consists of open sandy beach, a broad, undeveloped, interdune zone situated between the primary dune and Montauk Highway, and a back dune area north of the LIRR tracks, including an excellent example of the maritime pitch pine dune woodland community. Along the ocean beach, the primary dune system reaches elevations of 20 to 30 feet. There is no permanent standing water, but there are numerous low areas flooded with freshwater from the high water table, and an excellent example of the maritime freshwater interdunal swales community is found here. The 1.5 mile segment between Napeague State Park and Hither Hills State Park consists of sandy beach and primary dune. The ocean beach receives moderate recreational use (e.g., bathing, off-road vehicles) during the summer months and the segment outside of the State Park has moderate residential development and a number of condominium resorts.

Fish and wildlife values:

Napeague Beach is one of the largest remaining areas of undeveloped barrier beach and back dune ecosystem on Long Island, representing a rare ecosystem type in New York State. The New York Natural Heritage Program has identified excellent examples of maritime freshwater interdunal swales and pitch pine dune woodlands at this site. Portions of the habitat have been designated as part of the national Coastal Barrier Resources System, one of 67 such areas on Long Island. This outstanding natural area is important to many coastal wildlife species, and provides valuable opportunities for ecological research. Napeague Beach was investigated by the U.S. Fish and Wildlife Service in 1982 as one of four primary sites for baseline studies of coastal wildlife habitats on Long Island's south shore. These studies documented the presence of at least 33 species of breeding birds and 8 species of mammals.

Rare species inhabiting the Napeague Beach habitat area include horned lark (SC), spotted turtle (SC), eastern hognose snake (SC), and eastern spadefoot toad (SC). This is one of the few locations in New York State where eastern spadefoot toads are found in abundance. Other amphibians and reptiles include eastern newt, spotted salamander, four-toed salamander, red-backed salamander, Fowler's toad, green frog, bullfrog, pickerel frog, spring peeper, grey tree frog, northern black racer, eastern milk snake, eastern garter snake, eastern ribbon snake, painted turtle, box turtle, and snapping turtle.

Napeague Beach was also found to have relatively high densities of white-footed mouse, which provides a significant prey base for raptors migrating through the area. Peregrine falcon (E) migrate through the dunes during summer months.

Napeague Beach is a valuable nesting area for least tern (T) and piping plover (E, T-Fed) with both species present continuously from 1983 through 1997. There have been two active nesting sites throughout this period: One located on the beach in Napeague State Park and one two miles east near the boundary of Hither Hills State Park. At these sites, piping plover averaged 3 nesting pairs per year for the 1987-1996 period; a peak number of 5 pairs occurred in 1995. Town of East Hampton plover monitoring documented an average of 4 nesting pairs between 1995 and 1999, producing an average of 8 fledges annually.

Least tern had a ten-year (1987-1996) average of 44 nesting pairs annually; number of pairs of this species was variable from year to year, ranging from 0 to 126 pairs, with peak numbers in 1990 (126 pairs) and 1995 (90 pairs). However, no young fledged in this area between 1994 and 1999. In general, it appears that this relatively undisturbed stretch of ocean beach and primary dunes is a critical area of tern and plover nesting habitat within which colony sites are chosen by the birds each year.

Both the front and back slopes of the primary dunes and large areas of the interdune zone are colonized by associations of beachgrass (*Ammophila breviligulata*) and seaside goldenrod (*Solidago sempervirens*). In addition, associations of beach heather (*Hudsonia tomentosa*), bearberry (*Arctostaphylos uva-ursi*), beach plum (*Prunus maritima*), bayberry (*Myrica pensylvanica*), and pitch

pine (*Pinus rigida*) dot the area. Also present are several low-lying saturated soil areas that are colonized by stands of cranberry and various rushes. North of the interdune zone, the upland transition zone supports mixed communities of trees and shrubs, containing pitch pine, highbush blueberry (*Vaccinium corymbosum*), bayberry, bear oaks (*Quercus illicifolia*), black raspberry (*Rubus allegheniensis*), and poison ivy (*Toxicodendron radicans*). A pine-oak woodland occupies most of the northern part of this site between the upland transition zone and the Montauk Highway, and encompasses an excellent example of the maritime pitch pine dune woodland community. The back dune area has more diverse vegetation including pinweed (*Lechea* spp.), slender wormwood, beach plum (*Prunus maritima*), jointweed (*Polygonella articulata*), wild rose (*Rosa virginiana*), salt spray rose (*Rosa rugosa*), yellow thistle (*Cirsium horridulum*), bearberry, beach heather, seaside and slender fragrant goldenrods (*Solidago* spp.), golden aster (*Chrysopsis falcata*), bayberry (*Myrica pennsylvanica*) and reindeer lichens (*Cladonia* or *Cladina* spp.). Several New York Natural Heritage Program rare plants are found at this site, including slender blue flag (*Iris prismatica*), pine barren sandwort (*Minuartia caroliniana*), curly grass (*Schizaea pusilla*, E), and southern arrowwood (*Viburnum dentatum* var *venosum*).

Napeague Beach is an important access area for commercial haul seining and mobile sport-fishing. There are no significant recreational uses specifically associated with the wildlife resources at Napeague Beach. There is a recreational berry harvest in this area of local significance.

Impact assessment:

The Napeague Beach habitat is potentially vulnerable to any land disturbance or increased human activity in the area. Habitat alterations, such as dredged material disposal, vegetation clearing, excavation, or ditching, would have significant adverse impacts on several unusual species inhabiting the area. Uncontrolled human use of the area, including collection of native flora and fauna (such as amphibians and reptiles), and trampling of vegetation in sensitive upper beach and dune areas, would be highly detrimental to the wildlife resources at Napeague Beach.

Nesting shorebirds inhabiting the barrier beach and dunes at Napeague Beach are highly vulnerable to disturbance by humans, especially during the nesting and fledging period (March 15 through August 15). Significant pedestrian traffic or recreational vehicle use of the beach could easily eliminate the use of this site as a breeding area and should be minimized during this period. Predation of chicks and destruction of eggs or nests by unleashed pets (*e.g.*, dogs, cats) may also occur. Specific bird nesting areas should continue to be fenced to restrict human disturbance, and signs should be posted in the area for educational purposes. Vehicle traffic should always avoid the upper beach, and driving after dark should be discouraged. Although nesting sites may change from year to year, human disturbance of the upper beach and dunes (above the spring high tide line) must be avoided in order to preserve these sites' value as a nesting habitat.

Traditional uses on the lower beach such as pedestrian traffic, commercial haul seining and mobile sportfishing (often associated with the use of recreational or off-road vehicles) are generally compatible with the use of the upper beach and primary dune area by nesting shorebirds.

However, nesting shorebird species inhabiting the barrier beach and dunes at Napeague Beach are highly vulnerable to disturbance by humans from April through August. Recreational use in the bird nesting areas should be minimized during this period. Specific bird nesting areas should be fenced annually at these sites to restrict human disturbance. Although nesting sites may change from year to year, human disturbance of the upper beach and dunes (above the spring high tide line) must be avoided in order to preserve these sites' value as a nesting habitat. It is recommended that the beach be closed to all vehicles except commercial fisherman and emergency vehicles, and dogs be prohibited between April 1st and August 15th. Vehicular traffic should avoid the upper beach. Educational signs should be erected to inform pedestrians about the vulnerable wildlife. Note: The Town Trustees do not presently agree with these recommendations and, unanimously (1999), wish to see reasonable measures taken to protect nesting shorebirds while at the same time protecting the public's right to use and enjoy our beaches.

(b) Atlantic Double Dunes SCFWH

Location and description of habitat:

Atlantic Double Dunes is located along the south shore of Long Island, in the Town of East Hampton, Suffolk County (7.5' Quadrangle: East Hampton, NY). The fish and wildlife habitat extends approximately two and one-half miles along the coast, from Old Beach Lane in the Village of East Hampton to Beach Avenue in Amagansett, and includes the Amagansett National Wildlife Refuge. This approximate 280 acre area consists of open sandy beach (the Maidstone Club Beach and Amagansett Beach) and a relatively undisturbed interdune area situated between the primary dune and residential development along the south side of Further Lane and Bluff Road. The primary dune zone is dominated by a simple plant community spreading inland for 200 to 300 feet. Extending north from the rear slope of the primary dune, large portions of the back beach interdune zone have support sporadic clusters of shrubs, as well as rare maritime freshwater interdunal swales. The inland portion of the interdune zone is more open and is dominated by grasses and sporadic clusters of shrubs. A succession of tree and shrub dominated communities occupy the most inland portions of the interdune zone and the upland transition zone of this site, forming dense stands of semi-woodland habitat. Atlantic Double Dunes encompasses The Nature Conservancy's Atlantic Double Dunes Preserve, which is comprised of over a dozen parcels totaling approximately 70 acres. The remainder of the area is privately owned. The open beach receives substantial recreational use by local residents, with pedestrian and vehicle access available from two municipal beach areas, at Atlantic Avenue and Indian Wells Highway, and from private boardwalks crossing through the habitat.

Fish and wildlife values:

Atlantic Double Dunes is one of the largest remaining areas of undeveloped barrier beach and back dune ecosystem on Long Island, representing a rare ecosystem type in New York State. This outstanding natural area provides valuable opportunities for research on coastal wildlife species. The Atlantic Double Dunes area was investigated by the U.S. Fish and Wildlife Service in 1982 as one of four primary sites for baseline studies of natural coastal wildlife habitats on Long Island's south shore. These studies documented the presence of at least 21 species of breeding birds, 6 species of mammals, and 4 species of amphibians and reptiles in the area.

Atlantic Double Dunes has a substantial population of white-footed mouse and jumping mouse, which serve as an important prey base for raptors migrating through the area (falcons and accipiters, primarily). Northern harrier (T) hunt in the area during the fall and winter.

Atlantic Double Dunes provides valuable habitat for eastern hognose snake (SC) and eastern spadefoot toad (SC), two species which are uncommon on Long Island. This area supports large breeding populations of Fowler's toads and black racers. In the spring and fall the dunes are important for song bird migration, and for butterfly and dragonfly migration in the fall.

Least tern (T) nested in the area in the early 1980s in a sparsely vegetated portion of the foredune between Old Beach Lane and Two Mile Hollow Road (the Maidstone Club Beach). An estimated 10-40 pairs of least terns were observed in the area each year. Since the mid-1980s, colonies of up to 25 pairs of least tern have been established on the beach in this habitat area, but most have been unsuccessful for breeding. This lack of success is attributed to extreme tides from tropical storm events as well as documented mortality from recreational vehicle traffic. Sporadically during the 1990s several breeding pairs of piping plover have occurred in conjunction with the Atlantic Double Dune tern colonies. In 1995 a tern chick about to fledge was run over by a beach vehicle. The tern was found in a vehicle rut and the Town Trustees questioned whether its death could have been caused by other means. In 1996 no least tern young survived the passage of tropical storm Bertha. In 1996 for the first time the entire beach in front of Maidstone Club was closed to vehicle traffic to protect the tern and plover nesting area over the 4th of July weekend.

There are no significant recreational uses specifically associated with the wildlife of the Atlantic Double Dunes area. Portions of Amagansett Beach provide important access for mobile sports fishermen who use off-road vehicles to reach the valuable surf fishery at this site.

Many important plant species and communities are found in this habitat area. The primary dune zone is dominated by a simple plant community of American beachgrass (*Ammophila breviligulata*) and seaside goldenrod (*Solidago sempervirens* var. *sempervirens*) that spreads inland for 200 to 300 feet. The back beach interdune zone has a dominant ground cover of beach heather (*Hudsonia tomentosa*) and bearberry (*Arctostaphylos uva-ursi*), with sporadic clusters of shrubs such as beach plum (*Prunus maritima*) and bayberry (*Myrica pensylvanica*). Interdunal freshwater swales support stands of rushes, cranberry, highbush blueberry (*Vaccinium corymbosum*), and wild rose (*Rosa virginiana*). The inland portion of the interdune area supports bearberry, beachgrass, domestic grasses, and sporadic clusters of red cedar (*Juniperus virginiana*), bayberry, beach plum (*Prunus maritima*), and pitch pine (*Pinus rigida*). The upland transition zone supports bayberry, shadbush (*Amelanchier canadensis*), arrowwood (*Viburnum* spp.), bear oak (*Quercus ilicifolia*), and pitch pine. Rare plants documented by the New York Natural Heritage Program in this habitat include: round-leaf boneset (*Eupatorium rotundifolium* var. *rotundifolium*), southern arrowwood (*Viburnum dentatum* var. *venosum*), and the largest population of pine-barren sandwort (*Minuartia caroliniana*) in New York.

Impact assessment:

The Atlantic Double Dunes habitat is potentially vulnerable to any land disturbance or increased human activity in the area. Habitat alterations, such as dredged material disposal, vegetation clearing, excavation, or ditching, would have significant adverse impacts on several unusual species inhabiting the area. Uncontrolled recreational vehicle use of the beach area can contribute to erosion and may result in loss of dune areas.

Encroachment by additional residential development, expansion of beach parking areas, and installation of trails or boardwalks would be likely to reduce the value of the habitat to wildlife. Uncontrolled human use of the area, including collection of amphibians and reptiles, would also be highly detrimental to the wildlife resources at Atlantic Double Dunes.

Nesting shorebirds inhabiting the Atlantic Double Dunes are highly vulnerable to disturbance by humans, especially during the nesting and fledgling period (March 15 through August 15). Significant pedestrian traffic or recreational vehicle use of the beach could easily eliminate the use of this site as a breeding area and should be minimized during this period. Recreational activities (*e.g.*, boat and personal watercraft landing, off-road vehicle use, picnicking) in the vicinity of bird nesting areas should be minimized during this period. Predation of chicks and destruction of eggs or nests by unleashed pets (*e.g.*, dogs, cats) and natural predators may also occur, and predator control should be implemented where feasible. Fencing and/or continued annual posting of shorebird nesting areas should be provided to help protect these species. Control of vegetative succession, though beneficial use of dredged material or other means may improve the availability of nesting habitat in this area.

Although nesting sites may change from year to year, human disturbance of the upper beach and dunes (above the spring high tide line) in general must be avoided in order to preserve the habitat value of these sites. Traditional uses of the lower beach such as pedestrian traffic or mobile sportfishing are generally compatible with the use of the upper beach and dune area by nesting shorebirds and other wildlife. The LWRP recommends that specific bird nesting areas be fenced and posted annually at these sites to restrict human disturbance. Fencing and/or annual posting of additional highly sensitive portions of this habitat area should be provided as needed to help protect other important wildlife species. Note: The Town Trustees, unanimously (1999), wish to see reasonable measures taken to protect nesting shorebirds while at the same time protecting the public's right to use and enjoy our beaches.

(v) Reach 11**(a) Georgica Pond Locally Significant Coastal Fish and Wildlife Habitat***Location and Description of Habitat:*

Georgica Pond is a coastal pond on the south shore near the western boundary of East Hampton Town. The fish and wildlife habitat of approximately 290 acres includes the pond, its shoreline and the beach between the pond and the Atlantic Ocean. The boundary between the Town and the Village of East Hampton parallels the eastern shore of Georgica Pond from north to south. Most of

the shoreline is privately owned, but the pond bottomland is owned by the East Hampton Town Trustees.

Fish and Wildlife Values:

Georgica Pond is a large coastal lagoon that drains an extensive upland watershed, including a piped drainage system emanating from East Hampton Village that empties into Georgica Cove. Undisturbed, the pond level would naturally rise and flood the surrounding land, intermittently opening itself across the ocean beach when the water level in the pond rises sufficiently above the ocean level. However, the pond has traditionally been opened regularly by the East Hampton Town Trustees for management purposes. The barrier beach which separates the pond from the ocean is also periodically breached by storms.

The opening and closing of the barrier beach allows Georgica Pond to function as a marine estuary which provides a spawning ground and nursery area for anadromous fish such as alewives, and maintains salinity for blue claw crab, the most important fishery in the pond. It provides an essential step in the food chain and is thus important to local fish populations. White perch as well as many bait fish, such as silversides, spawn in the pond. The coordination of beach opening with spawning times determines the effectiveness of this system. The pond also provides feeding areas for osprey (T), winter waterfowl, common terns (T), roseate terns (E, E-FED), least terns (E) and several species of herons and migrating shorebirds. The barrier beach supports a colony of least terns and several pairs of piping plovers (E, T-FED). Since 1984 at least one pair of piping plovers has bred at the mouth of Georgica Pond annually, with as many as six pairs breeding in 1988. In 1995 and 1996 one pair bred successfully. In most years least terns also gather to breed at the mouth of Georgica. As many as 120 pairs assembled there in 1989. However, in the past five years numbers have declined to 10-20 pairs. In 1996 no least terns successfully fledged young at Georgica Pond, a loss attributed primarily to washovers from storms.

Breeding birds also include blue-winged teal, common gallinule and black duck. Recreational uses associated with the wildlife resources at Georgica Pond include crabbing, hunting and birding. Commercial activities include the taking of perch, bait, crabs and eels. This is facilitated by the periodic opening of the barrier beach.

Impact Assessment:

Synchronizing the opening of the pond to the ocean with spawning times affects local populations of white perch, blue crab and several species of baitfish. It may, however, also open at random in response to coastal storms or high rainfall. In addition, any activity that degrades water quality, increases turbidity, changes water depths, etc. would have a significant impact on fish and wildlife resources. Water pollution from chemical contamination (including food chain effects), pesticides, fertilizers, oil spills, excessive turbidity, waste disposal, septic infiltration, stormwater runoff, etc. would also have an adverse effect. Human alterations or structures such as bulkheads, fences, etc. along the pond shoreline or on the barrier beach would also degrade habitat. The introduction of exotic species should be prohibited.

Disturbance of nesting shorebirds by humans and their pets can affect populations along the shoreline and on the barrier beach. Annual fencing to the debris line and posting of bird colonies should be continued. The beach should be closed to all vehicles except commercial fishermen, people actively engaged in crabbing, and emergency vehicles between April 1 and August 15. Dogs should also be prohibited from the beach during this time. The beach should continue to be closed to all traffic for the July 4th weekend. Educational signs should be erected to provide information about the area's vulnerable wildlife. At other times vehicular access to Georgia Gut should be permitted along one lane below the debris line. Note: Unanimously (1999), the Town Trustees do not agree with the recommendations to close the beach to vehicles and dogs, and wish to see reasonable measures taken to protect nesting shorebirds while at the same time protecting the public's right to use and enjoy our beaches.

Methods of reducing the flow of pollutants into the pond should be studied and implemented. Wetland areas surrounding the pond should be protected and/or restored to improve water quality and wildlife habitat (see *Drainage Mitigation, Georgica Cove; Harbor Protection Overlay District, Homeowner Education; Stormwater Abatement; and Septic Waste Remediation in Projects*). This area should be considered for designation as a SCFWH by New York State during any review of designated SCFWH's.

(b) Wainscott Pond Locally Significant Coastal Fish and Wildlife Habitat

Location and Description of Habitat:

Wainscott Pond is located on the south shore near the Town's western boundary. The fish and wildlife habitat is approximately 50 acres including the pond, the wetland areas surrounding it and the Atlantic Ocean beach. Although Wainscott Pond is completely surrounded by private land, the pond bottom is owned by the East Hampton Town Trustees.

Fish and Wildlife Values:

Wainscott Pond provides valuable wildlife habitat for waterfowl and aquatic species. Overwintering ducks include shovelers, blue-winged teal and green-winged teal. The pond is a stopover for migrating shorebirds and snow geese and a resting area for Canada geese. Its wetland fringes also support a variety of wildlife. Breeding birds include black ducks and occasionally ruddy ducks. The pond also supports populations of painted and snapping turtles. Although use of the pond by the public is limited by the lack of public access, it is a popular duck hunting spot.

Impact Assessment:

Unfortunately the pond's condition is less than pristine. Many of its fringing wetland areas have been mowed and water conditions are poor. The following report was made to the NYS DEC by the Town's Assistant Environmental Protection Director in 1990:

Primary pollutant is agricultural runoff into Wainscott Pond. High organic content associated with this runoff causes high BOD which stresses fish, reptiles, amphibians and waterfowl. Fish kills from low oxygen levels occur periodically. Anaerobic conditions exist in lower portions of the water column during the summer months. Wildlife populations that

exist within the pond itself are high density and low diversity which are indicative of poor water conditions. The primary fish populations within the pond are stunted yellow perch, brown bullhead and American eel. There is a lack of predator species (i.e. warm water competitive species, e.g. largemouth bass, chain pickerel) which require higher oxygen levels. The perch and bullhead populations are commercially and recreationally useless because of their stunted size. Problems could be reduced with hedgerow, wetland buffers, and allowing for proper drainage structures.

Any activities that would further degrade water quality, increase turbidity, alter water depths etc. would have a significant impact on fish and wildlife species inhabiting Wainscott Pond. All species of fish and wildlife may be affected by pollution from chemical contamination (including food chain effects), oil spills, excessive turbidity, waste disposal, agricultural and stormwater runoff, etc. Currently, water quality within the pond is poor. Pollution from agricultural and road runoff is augmented by a culvert system leading from Montauk Highway to the north that drains parts of East Hampton and Southampton Towns. Methods of reducing runoff and improving water quality should be studied and implemented through cooperative arrangements in both Towns (see *East Hampton/Southampton Cooperative Run-off Mitigation in Projects*). Invasive species such as Phragmites and purple loosestrife are evident around the pond fringe. Wetland areas surrounding the pond should be restored to improve both water quality and wildlife habitat. Public access to the pond should be obtained.

(vi) Reach 12

(a) Gardiner's Island SCFWH

Location and description of habitat:

Gardiner's Island is an approximate 3,300 acre island situated in Gardiners Bay off the Town's north shore (7.5' Quadrangles: Gardiner's Island East, NY and Gardiner's Island West, NY). Gardiner's Island is a large, nearly undeveloped, marine island with tidal and freshwater wetlands, beaches, dunes, bluffs, woodlands, pine barrens, brushland, and meadows. Cartwright Island and Cartwright Shoals at the southern end of Gardiners Island are included in this habitat. The eelgrass beds fringing the shores of Gardiners Island on the eastern and southeastern sides are included in this habitat. The island is privately owned, and there is no road access; however, a small private airport exists. The Gardiner's Island SCFWH corresponds with the Gardiner's Island and Point Complex.

Significance/uniqueness of area:

Gardiner's Island is an extremely rare ecosystem because of its nearly pristine condition. The diversity of habitats present makes Gardiner's Island especially valuable as a coastal wildlife refuge. Species found on the island include many that are on New York State's Endangered (E), Threatened (T), or Special Concern (SC) lists. The island is particularly valuable to ground nesting birds because there are no mammalian predators present.

Fish and wildlife values:

Gardiner's Island is especially valuable as an undisturbed breeding ground for thousands of colonial birds, many of them rare and of regional significance. This is the only current breeding area for roseate terns (E, E-FED) and common terns (T) in East Hampton Town. Roseate terns (E, E-Fed) have been observed nesting intermittently at this site during the 1987-1996 period, with a peak number of 119 pairs observed in 1987. After a several year absence, about 50 pairs of roseate tern produced young in 1995. Several hundred nesting pairs of common tern (T) have also been observed annually after an absence during the late 1980's and early 1990's. Around 95 pairs of this species were observed at the island in 1994-1995. The most important site for common terns breeding on Gardiner's Island is Cartwright shoals at the southern tip, while the major site for roseate terns is the ruins of Fort Tyler off the northern tip of the island. Least tern (T) were also observed nesting at this location in the mid-1990's, after being absent since the 1980's. Several hundred least tern adults were observed in 1994-1995. In 1994 and 1995 during the breeding season 360 and 158 adults were counted there respectively. Despite the existence of appropriate habitat, piping plover (E, T-Fed) have not been observed nesting at Gardiners Island since the early 1980's

Tern populations on Cartwright Shoals may be receiving significant nest site competition from gulls, which are primary roseate tern competitors. Gulls (great black-backed gull) were observed at an annual average population of 2,544 pairs during the 1987-1996 period; the peak number reached 4,171 pairs in 1991.

Gardiners Island contains the largest concentration of nesting osprey (SC) in New York State and possibly the largest on the East coast of the United States. Historically, over 300 pairs of osprey nested on Gardiners Island, primarily occupying ground nests (due to the unavailability of suitable trees for nesting and the paucity of mammalian predators). Northern harrier (T) and red-tailed hawk also nest regularly on the island; winter populations of raptors on Gardiners Island are large and diverse, including rough-legged hawk, snowy owl, Cooper's hawk, northern goshawk (SC), peregrine falcon (E), merlin, and American kestrel. Bald eagle (T, T-Fed) also use the island during winter. A spruce plantation on the island supported nesting long-eared owls in the past; barn owls, screech owls, and great-horned owls are year-round residents.

Gardiner's Island also supports a variety of nesting colonial wading birds, including glossy ibis, black-crowned night-heron, snowy egret, great egret, and little blue heron. Gulls, terns, American oystercatchers, double-crested cormorants, and black skimmers occur in impressive concentrations. Gardiners Island has been one of the largest double-crested cormorant colonies in New York State. The annual average population of double-crested cormorant during the 1987-1996 period was 685 pairs, increasing from around 400 pairs in the late 1980's to over 1,000 pairs in the early and mid-1990's. The cormorant colony occurs at Home Pond on the island's western shore. The island also supports one of the largest colonies of great black-backed gulls in the state, numbering 3447 pairs in 1995, including Cartwright Shoals. Northern harrier (T) and seaside sparrow are regular nesters. Canada geese, yellow-breasted chats, bank swallows, gadwalls, red-tailed hawks, turkeys, and sharp-tailed and seaside sparrows also nest here. A pine plantation on the Island contains at least one pair of nesting long-eared owls. The island and its adjacent waters provide excellent waterfowl

wintering areas, with annual average concentrations for the 1987-1996 period exceeding 1,500 individuals. Practically every overwintering waterfowl species found on Long Island can be seen on Gardiner's Island. Wintering species that occur by the hundreds include American black duck, brant, greater and lesser scaup, old squaw, common goldeneye, bufflehead, red-breasted merganser, ruddy duck, and white-winged scoter. The island is regularly used by bald eagles (E, T-FED) during the winter.

Harbor and gray seals have winter haulout sites on the east side of the island and northern diamondback terrapins (SC) reside in the marshes along the shores. The moist woods contain four-toed and spotted salamanders (SC). Diamondback terrapin occur in the coastal ponds of Gardiners Island. The offshore waters support commercially important American oyster beds. The waters of Gardiners Bay provide an abundance of prey fish for the many nesting species of birds on the island and also are important spawning areas for weakfish and winter flounder.

Because Gardiner's Island is privately owned and access is limited, comprehensive inventories of its flora and fauna are lacking. The New York Natural Heritage Program has documented a variety of listed and rare plant species on Gardiners Island, including: northern gamma grass, seabeach knotweed, Small's knotweed, woodland agrimony, and bushy rockrose (*Helianthemum dumosum*, T). This areas also supports the best location of featherfoil (*Hottonia inflata*, T), and one of only two populations of sea purslane (*Sesuvium maritimum*, E), in New York State. Bostwick Forest on the northwest side of Gardiners Island is among the oldest and largest on Long Island, and supports white oak, black oak, scarlet oak, yellow birch, sweet birch, sassafras, tupelo, red maple, and one of only a few populations on Long Island of fruiting persimmons. Other Federally listed plants have been reported historically. The island's relatively pristine condition suggests that it may provide habitat for other globally rare plant and animal species. There are reports that the maritime forests of the island are in excellent condition, and may represent the largest and least disturbed old-growth forests of the eastern Long Island coastal plain.

There are commercial oyster beds in the vicinity of Gardiner's Island. Local residents harvest oysters and fish from waters surrounding the island for commercial and recreational uses. These waters have never been closed to shellfishing as a result of contamination. The eelgrass meadows fringing the island contribute to the nearshore habitat value of the island for juvenile fish and shellfish species. Because the island is privately owned, public recreational uses are not allowed.

Impact assessment:

Increased human use and development of Gardiners Island would have a major impact on the nesting habits of many bird species using the area. Introduction of mammalian predators (such as domestic pets) would be highly detrimental to important populations of nesting birds and other wildlife. The introduction of species exotic to the island should be prohibited. Of particular concern is disturbance to the shoreline and wetland habitats containing many endangered, threatened, and special concern species during the breeding period (April through August). Critical areas of the island to preserve for nesting shorebird species include the Fort Tyler ruins off the northern tip for common terns and roseate terns, and Cartwright Shoals off the southern tip for common terns , roseate terns and least

terns. Terns are vulnerable to disturbance during the May 1 through August 15 breeding season. Control of the expanding great black-backed gull populations at Cartwright Shoals may enhance production of the protected tern species.

The island is unique because of its nearly pristine condition. Any disturbance to the upland, shoreline, wetland, or nearshore habitats that contain many endangered, threatened, and special concern species would be highly detrimental. This is especially critical during the breeding period (generally April 1 through August 30). Degradation of water quality near Gardiners Island, from chemical contamination (including food chain effects resulting from bioaccumulation), oil spills, excessive turbidity, and waste disposal (including vessel wastes), would adversely affect all fish and wildlife, especially important eelgrass meadows and nearshore shellfish populations. The potential for oil spills from the sea lanes 10 miles offshore represents a significant threat to Gardiners Island. The double-crested cormorant colony is a source of excess nutrients. Hickories and tupelos used by cormorants for nesting are experiencing a decline. Limiting the expansion of this colony may be beneficial for maintaining ecosystem health.

The maritime forests of Gardiners Island are exemplary with respect to their age, size and low level of disturbance, especially Bostwick Forest at the island's northwest end; preservation of such areas should be considered a high priority. Disturbance or fragmentation of these habitats or the introduction of exotic or nuisance species would substantially alter the fish and wildlife values of the island.

Docks may be detrimental to nearshore eelgrass beds because of shading, and review of any proposed new docks in the area should be conducted with potential impacts to eelgrass beds fully considered. Restoration opportunities for eelgrass may exist if water quality parameters are appropriate. A 1996 Peconic Estuary Program study recommends the area surrounding Cartwright Point for eelgrass restoration, one of four such sites identified throughout the estuary.

Any change from the island's present status or use should be carefully studied before being approved. Because of the island's unique circumstances and because restricted access has resulted in a dearth of data, a detailed natural resources inventory should be completed in cooperation with the owners and a management plan drafted.

The island is privately owned by a single family, held in a trust for Robert David Lion Gardiner and his niece, Mrs. Alexandra Creel Goelet. If, upon their deaths, the property comes out of trust, and if the island were to be developed, it would have a major impact on the nesting habitats of many bird species using the island and on the regionally significant communities of coastal vegetation.

Conservation considerations:

The diversity of habitats makes Gardiner's Island a regionally significant coastal wildlife refuge. One family has protected this island for over 350 years. Should this ownership pattern ever change, acquisition should be considered by the Federal and/or State governments. In the meantime, efforts should be made to develop cooperative agreements with the owners to intensively survey and assist

in the management of the many significant fish, wildlife and plant resources of this outstanding habitat area, particularly for U.S. Endangered and Threatened species. It is possible that certain rare insects, for example, American burying beetle and northeastern beach tiger beetle, each known from only a single island in the Northeast, may also occur on Gardiner's Island, and surveys for these species should be given high priority by the U.S. Fish and Wildlife Service, the State, and the Town.

D. DESCRIPTION AND DISTRIBUTION OF NATIVE SPECIES

1. Flora

(i) Protected Native Plants

East Hampton supports many plant communities which are relatively undisturbed. As a result, quite a large number of rare species can be found within the Town. Table 1 summarizes the species identified in East Hampton which appear on the New York State Protected Native Plant List and the Federal List of Endangered and Threatened Plants.

(ii) Reach distribution of listed NYS Heritage Program Flora

Many nonregulated and unprotected, yet valuable, ecological communities are located in upland portions of the Town's coastal area. Among the most important are ecological communities that have been identified by the NYS Natural Heritage Program. The program classifies these communities according to their rarity in New York State. The reach distribution of listed NYS Heritage Program Flora is summarized in Table III-2.

Table III-1: Protected Native Plants

Endangered (E): Plants that are in danger of extinction throughout all or a significant portion of their ranges within the state and requiring remedial action to prevent such extinction.

<i>Species</i>	Common Name
<i>Agalinis acuta</i> *	Sandplain gerardia
<i>Amelanchier x nantucketensis</i>	Nantucket juneberry
<i>Carex mitchelliana</i>	Mitchell sedge
<i>Eupatorium leucolepis</i>	White boneset
<i>Hydrocotyle verticillata</i>	Water-pennywort
<i>Ligusticum scoticum</i>	Scotch lovage
<i>Pycnanthemum torrei</i>	Torrey's mountain-mint
<i>Sabatia campanulata</i>	Slender marsh-pink
<i>Schizaea pusilla</i>	Curlygrass
<i>Sesuvium maritimum</i>	Sea purslane

* Federally listed (E-FED)

Threatened (T): Plants that are likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges in the state.

Species	Common Name
<i>Asclepias purpurascens</i>	Purple milkweed
<i>Asclepias variegata</i>	White milkweed
<i>Fimbristylis castanea</i>	Marsh fimbry
<i>Hedyotis uniflora</i>	Clustered bluets
<i>Helianthemum dumosum</i>	Bushy rockrose, Frostweed
<i>Hottonia inflata</i>	Featherfoil
<i>Linum intercursum</i>	Sandplain wild flax
<i>Lysimachia hybrida</i>	Lance-leaved loosestrife
<i>Platanthera ciliaris</i>	Orange fringed orchis
<i>Platanthera cristata</i>	Crested fringed orchis
<i>Pycnanthemum verticillatum</i> var. <i>verticillatum</i>	Whorled mountain-mint
<i>Rumex hastatulus</i>	Heart sorrel

Exploitably Vulnerable: Native plants likely to become threatened in the near future throughout all or a significant portion of their ranges within the state if causal factors continue unchecked.

Species	Common Name
<i>Asclepias tuberosa</i>	Butterfly weed (Chiggerflower, Orange milkweed; Pleurisyroot)
<i>Chimaphila spp.</i>	Pipsissewa (Pine's pine; Waxflower), Spotted evergreen (spotted wintergreen)
<i>Cornus florida</i>	Flowering Dogwood
<i>Drosera spp.</i>	Sundew (Dailydew; Dewthread)
<i>Epigaea repens</i>	Trailing Arbutus (Ground laurel; Mayflower)
Ferns:	All native ferns excluding Bracken, Hay-scented and Sensitive
<i>Adiantaceae</i>	
<i>Aspleniaceae</i>	
<i>Azollaceae</i>	
<i>Hymenophyllaceae</i>	
<i>Osmundaceae</i>	
<i>Polypodiaceae</i>	
<i>Schizaeaceae</i>	
<i>Vittariaceae</i>	
<i>Ilex spp. (Native)</i>	Holly (Hulver) Inkberry (Bitter gallberry) Winterberry (Black alder)

<i>Kalmia</i> spp.	Laurel Spoon wood (Calico-bush) Wicky (Lambkill)
<i>Lilium</i> spp. (Native)	Lily Turk's-cap
<i>Lycopodium</i> spp.	All Clubmosses
<i>Myrica pensylvanica</i>	Bayberry (Candleberry)
<i>Opuntia humifusa</i>	Prickly pear (Wild cactus; Indian fig)
Orchidaceae	All native orchids
<i>Rhododendron</i> spp. (Native)	Azalea Great laurel (White laurel) Honeysuckle Pinkster (Election-pink; Pinkster-bloom) Rhododendron (Rosebay) Rhodora
<i>Sabatia</i> spp.	Bitterbloom (Marsh-pink, Rose pink; Sabatia;
<i>Silene caroliniana</i>	Sea-pink)
<i>Viola pedata</i>	Wild pink Bird's-foot violet

Rare: Plants that have from 20 to 35 extant sites or 3,000 to 5,000 individuals statewide.

Species	Common Name
<i>Agalinis virgata</i>	Pine-barren gerardia
<i>Arethusa bulbosa</i>	Swamp pink
<i>Carex emmonsii</i>	Emmons sedge
<i>Carex hormathodes</i>	Sedge
<i>Cuscuta pentagona</i>	Field-dodder
<i>Cyperus polystachyos</i> var. <i>texensis</i>	Cyperus
<i>Eleocharis fallax</i>	Creeping spikegrass
<i>Eleocharis halophila</i>	Salt-marsh spikerush
<i>Hemicarpha micrantha</i>	Dwarf bullrush
<i>Liatris scabiosa</i> var. <i>novae-angliae</i>	New England blazing star
<i>Listera australis</i>	Southern twayblade
<i>Minuartia caroliniana</i>	Pine-barren sandwort
<i>Potentilla anserina</i> ssp. <i>pacifica</i>	Silverweed
<i>Psilocarya scirpoides</i>	Long-beaked bald-rush
<i>Scleria reticularis</i> var. <i>reticularis</i>	Reticulated nutrush
<i>Solidago elliotii</i>	Coastal goldenrod
<i>Spiranthes vernalis</i>	Spring ladies'-tresses
<i>Utricularia biflora</i>	Two-flowered bladderwort
<i>Utricularia fibrosa</i>	Fibrous bladderwort

Source: NYS, 1998

Table III-2: Reach Distribution of Listed NYS Natural Heritage Program Flora

ABBREVIATIONS

GLOBAL RANK A reflection of global rarity designated by the NYS Natural Heritage Program.

G1 Critically imperiled globally because of extreme rarity (5 or fewer occurrences, or very few remaining individuals, acres, or miles of stream) or especially vulnerable to extinction because of some factor of its biology.

G2 Imperiled globally because of rarity (6-20 occurrences, or few remaining acres, or miles of stream) or very vulnerable to extinction throughout its range because of other factors.

G3 Either very rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted range (e.g., a physiographic region), or vulnerable to extinction throughout its range because of other factors.

G4 Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

G5 Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.

GH Historically known, with the expectation that it might be rediscovered.

GX Species believed extinct.

GU Status unknown.

STATE RANK A reflection of rarity within New York State as designated by the New York Natural Heritage Program.

S1 Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.

S2 Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.

S3 Typically 21 to 100 occurrences, limited acreage, or miles of stream New York State.

S4 Apparently secure in New York State.

S5 Demonstrably secure in New York State.

SH Historically known from N.Y. State, but not seen in the past 15 years.

SX Apparently extirpated from New York State.

SE Exotic, not native to New York State.

SR State Report only, no verified specimens known from New York State.

SU Status in New York State is unknown.

TABLE III-2: REACH DISTRIBUTION OF LISTED NYS NATURAL HERITAGE PROGRAM FLORA				REACH DISTRIBUTION											
Species	Common Name	Global Rank	NYS Rank	1	2	3	4	5	6	7	8	9	10	11	12
<i>Agalinis acuta</i>	Sandplain gerardia	G1	S1					√	√	√		√			
<i>Agalinis virgata</i>	Pine-barren gerardia	G3G4	S2									√			
<i>Amaranthus pumilus</i>	Seabeach amaranth	G2	SH				√								
<i>Amelanchier x nantucketensis</i>	Nantucket juneberry	G2	S1				√	√							
<i>Arethusa bulbosa</i>	Swamp pink	G4	S2							√	√	√			
<i>Asclepias purpurascens</i>	Purple milkweed	G4G5	S2												√
<i>Asclepias variegata</i>	White milkweed	G3G5	S1	√	√										
<i>Aster radula</i>	Swamp aster	G5	SH	√											
<i>Aster vimineus</i>	Small white aster	G5	SH												√
<i>Baptisia tinctoria var. projecta</i>	Yellow wild indigo	G5T3Q	SH										√		
<i>Betula pumila</i>	Swamp birch	G5	S2		√										
<i>Carex debilis var. debilis</i>	Sedge	G5T5	S2								√	√			√
<i>Carex emmonsii</i>	Emmons sedge	G5	S1								√	√			
<i>Carex hormathodes</i>	Sedge	G4G5	S1	√			√	√		√					√
<i>Carex mitchelliana</i>	Mitchell sedge	G3G4	S1							√					
<i>Carex muhlenbergii var. enervis</i>	Sedge	G5T5	SH												√

TABLE III-2: REACH DISTRIBUTION OF LISTED NYS NATURAL HERITAGE PROGRAM FLORA				REACH DISTRIBUTION												
Species	Common Name	Global Rank	NYS Rank	1	2	3	4	5	6	7	8	9	10	11	12	
<i>Carex retroflexa</i>	Reflexed sedge	G3G5	SH												✓	
<i>Carex seorsa</i>	Stellate sedge	G4	SH									✓				
<i>Carex straminea</i>	Straw sedge	G5	SH	✓	✓											
<i>Chasmanthium laxum</i>	Slender spikegrass	G5	SH					✓								
<i>Chenopodium rubrum</i>	Red pigweed	G5	S4							✓						
<i>Cirsium altissimum</i>	Tall thistle	G5	SH												✓	
<i>Cuscuta pentagona</i>	Field-dodder	G5	S1						✓							
<i>Cuscuta polygonorum</i>	Smartweed dodder	G5	S1										✓			
<i>Desmodium ciliare</i>	Tick-trefoil	G5	S2					✓								
<i>Digitaria filiformis</i>	Slender crabgrass	G5	S1S2					✓								
<i>Eleocharis fallax</i>	Creeping spikerush	G4G5	S1			✓										
<i>Eleocharis halophila</i>	Saltmarsh spikerush	G4	S1S2					✓	✓	✓						
<i>Eleocharis obtusa var. ovata</i>	Blunt spikerush	G5T4Q	S1S3		✓										✓	
<i>Eleocharis tricostata</i>	Three-ribbed spikerush	G3G4	S1	✓												

TABLE III-2: REACH DISTRIBUTION OF LISTED NYS NATURAL HERITAGE PROGRAM FLORA				REACH DISTRIBUTION											
Species	Common Name	Global Rank	NYS Rank	1	2	3	4	5	6	7	8	9	10	11	12
<i>Eleocharis tuberculosa</i>	Long-tubercled spikerush	G5	S2	√		√			√						
<i>Eupatorium leucolepis</i>	White boneset	G5	S1	√											
<i>Fimbristylis caroliniana</i>	Carolina fimbry	G4	SH	√											
<i>Fimbristylis castanea</i>	Marsh fimbry	G5	S1	√	√		√								
<i>Gnaphalium purpureum</i>	Purple everlasting	G5	S1	√											
<i>Hedyotis uniflora</i>	Clustered bluets	G5	S2	√					√						
<i>Helianthemum dumosum</i>	Bushy rockrose, frostweed	G3	S2	√		√	√	√	√			√			
<i>Hemicarpha micrantha</i>	Dwarf bullrush	G4	S1						√						
<i>Hottonia inflata</i>	Featherfoil	G3G4	S1						√						√
<i>Hydrocotyle verticillata</i>	Water-pennywort	G5	S1						√			√			
<i>Hypericum adpressum</i>	Creeping St. John's-wort	G4	S1	√											
<i>Liatris scabiosa var. novae-angliae</i>	New England blazing-star	G5?TU	S2S3				√	√				√	√		
<i>Ligusticum scoticum</i>	Scotch lovage	G5	S1					√							
<i>Linum intercursum</i>	Sandplain wild flax	G4G5	S2				√		√			√	√		
<i>Linum medium var. texanum</i>	Southern yellow flax	G5T5	S1									√		√	
<i>Listera australis</i>	Southern twayblade	G4	S2	√											

TABLE III-2: REACH DISTRIBUTION OF LISTED NYS NATURAL HERITAGE PROGRAM FLORA				REACH DISTRIBUTION											
Species	Common Name	Global Rank	NYS Rank	1	2	3	4	5	6	7	8	9	10	11	12
<i>Luzula campestris var. bulbosa</i>	Hairy woodrush	G5	S3				√	√	√			√	√		
<i>Lysimachia hybrida</i>	Lance-leaved loosestrife	?	?						√						
<i>Lythrum lineaere</i>	Saltmarsh loosestrife	G5	S1										√		
<i>Minuartia caroliniana</i>	Pine-barren sandwort	G5	S3	√			√		√				√		
<i>Onosmodium virginianum</i>	Virginia false gromwell	G4	S1	√			√								
<i>Platanthera ciliaris</i>	Orange fringed orchis	G5	S1			√			√				√		
<i>Platanthera cristata</i>	Crested fringed orchis	G5	S1	√			√			√					
<i>Polygonum glaucum</i>	Seabeach knotweed	G3	S3		√	√	√			√					√
<i>Potentilla anserina ssp.pacifica</i>	Silverweed	G5TU	S2	√	√	√									√
<i>Psilocarya nitens</i>	Short-beaked bald-rush	G3	S2	√											
<i>Psilocarya scirpoides</i>	Long-beaked bald-rush	G4	S1	√											

TABLE III-2: REACH DISTRIBUTION OF LISTED NYS NATURAL HERITAGE PROGRAM FLORA				REACH DISTRIBUTION											
Species	Common Name	Global Rank	NYS Rank	1	2	3	4	5	6	7	8	9	10	11	12
<i>Pycnanthemum torrei</i>	Torrey's mountain-mint	G2Q	S1							✓					
<i>Pycnanthemum verticillatum</i> var. <i>verticillatum</i>	Whorled mountain-mint	G5T?	S1									✓			
<i>Rhynchospora inundata</i>	Drowned horned rush	G3G4	S1	✓											
<i>Rudbeckia hirta</i> var. <i>hirta</i>	Black-eyed susan	G5TU	SH												✓
<i>Rumex hastatulus</i>	Heart sorrel	G5	S1				✓								
<i>Rumex maritimus</i> var. <i>fueginus</i>	Golden dock	G5T5	S1	✓					✓	✓				✓	✓
<i>Sabatia campanulata</i>	Slender marsh-pink	G5	S1	✓											
<i>Schizaea pusilla</i>	Curlygrass fern	G3	S1				✓								
<i>Sesuvium maritimum</i>	Sea purslane	G5	S1							✓					✓
<i>Silene caroliniana</i> var. <i>pennsylvanica</i>	Wild pink	G5TU	S3	✓											
<i>Solidago elliotii</i>	Coastal goldenrod	G5	S1S2	✓											
<i>Spiranthes vernalis</i>	Spring lady's-tresses	G5	S1						✓			✓			

TABLE III-2: REACH DISTRIBUTION OF LISTED NYS NATURAL HERITAGE PROGRAM FLORA				REACH DISTRIBUTION											
Species	Common Name	Global Rank	NYS Rank	1	2	3	4	5	6	7	8	9	10	11	12
<i>Utricularia biflora</i>	Two-flowered bladderwort	G5	S3	√											
<i>Utricularia fibrosa</i>	Fibrous bladderwort	G4G5	S3	√											

2. Fauna

(a) Reptiles and Amphibians

East Hampton supports a good diversity of native reptiles and amphibians (Table III-3). Among the many factors which contribute to these populations are the following:

- large areas of contiguous open space
- undisturbed coastal plain habitat supporting numerous kettleholes and vernal ponds
- the absence of curbs along roads and highways.

The Town's marine waters also host several turtles that are registered on the State and Federal lists of endangered, threatened and special concern species. Recent studies have shown that they may be critical feeding areas for young Atlantic Ridley and other sea turtles (Moreales, 1990).

TABLE III-3: REPTILES AND AMPHIBIANS FOUND IN EAST HAMPTON.

<i>Species</i>	Common Name	<i>Species</i>	Common Name
<i>Ambystoma laterale</i> (SC)	Blue spotted salamander	<i>Caretta caretta</i> (T, T-FED)	Loggerhead sea turtle
<i>Ambystoma maculatum</i> (SC)	Spotted salamander	<i>Chelonia mydas</i> (T, T-FED)	Green sea turtle
<i>Ambystoma opacum</i>	Marbled salamander	<i>Chelydra serpentina</i>	Snapping turtle
<i>Bufo fowleri</i>	Fowlers toad	<i>Chrysemys picta picta</i>	Eastern painted turtle
<i>Diemictylus viridescens</i>	Eastern newt	<i>Clemmys guttata</i> (SC)	Spotted turtle
<i>Hemidactylum scutatum</i>	Four-toed salamander	<i>Coluber constrictor constrictor</i>	Northern black racer
<i>Hyla crucifer</i>	Spring peeper	<i>Dermochelys coriacea</i> (E, E-FED)	Leatherback sea turtle
<i>Hyla versicolor</i>	Gray treefrog	<i>Diadophis punctatus edwardsi</i>	Northern ringneck snake
<i>Plethodon cinereus</i>	Red-backed salamander	<i>Eretmochelys imbricata</i> (E, E-FED)	Hawksbill sea turtle
<i>Rana clamitans melanota</i>	Green frog	<i>Heterodon platyrhinos</i> (SC)	Eastern hognose snake
<i>Rana catesbeiana</i>	Bullfrog	<i>Lampropeltis doliata triangulum</i>	Eastern milk snake
<i>Rana palustris</i>	Pickerel frog	<i>Lepidochelys kempfi</i> (E, E-FED)	Atlantic ridley sea turtle
<i>Rana sphenocephala</i> (SC)	Southern leopard frog	<i>Malaclemys terrapin terrapin</i> (SC)	Northern diamondback terrapin
<i>Rana sylvatica</i>	Wood frog	<i>Natrix sipedon</i> ssp.	Northern water snake
<i>Scaphiopus holbrookii</i>	Eastern spadefoot	<i>Sternotherus odoratus</i>	Stinkpot turtle
		<i>Terrapene carolina carolina</i>	Box turtle
		<i>Thamnophis sauritus sauritus</i>	Eastern ribbon snake

Thamnophis sirtalis Eastern garter snake
sirtalis

(b) Birds

Bird populations are diverse. In addition to the numerous ducks and other seabirds that winter on the Town's waters (see Table III-4), East Hampton supports healthy numbers of the species that are typical of Long Island's wooded, rural and suburban areas. A large number of coastal species also breed here during the summer (see Tables III-5 through III-9). Those coastal birds that nest on the open beaches must compete with the increasing human population for use of the beaches. Several of these birds are designated as endangered or threatened by the State and Federal governments.

New York State, East Hampton Town and The Nature Conservancy have attempted to protect colonies of beach nesting species such as least terns (E) and piping plovers (E, T-FED) by erecting snow fencing and soliciting people to work as tern and plover "stewards", most on a volunteer basis. Breeding beaches are managed and protected by various entities. County and State beaches are managed by County and State Parks personnel with the assistance of The Nature Conservancy. Town-owned beaches are managed by the Town Natural Resources Department under the aegis of the Town Trustees.

TABLE III-4: WINTER WATERBIRDS

The following species are typically seen at the Montauk Christmas Bird Counts:

Common Name	Species	Common Name	Species
Red-throated loon	<i>Gavia stellata</i>	White-winger	<i>Melanitta deglandi</i>
Common loon	<i>Gavia immer (SC)</i>	scoter	
Pied-billed grebe	<i>Podilymbus podiceps</i>	Barrow's goldeneye	<i>Bucephala islandica</i>
Horned grebe	<i>Podiceps auritus</i>	Bufflehead	<i>Bucephala albeola</i>
Red-necked grebe	<i>Podiceps grisegena</i>	Hooded merganser	<i>Lophodytes cucullatus</i>
Northern gannet	<i>Morus bassanus</i>	Common merganser	<i>Mergus merganser</i>
Great cormorant	<i>Phalacrocorax carbo</i>	Red-breasted merganser	<i>Mergus serrator</i>
Double-crested cormorant	<i>Phalacrocorax auritus</i>	Ruddy duck	<i>Oxyura jamaicensis</i>
Great blue heron	<i>Ardea herodias</i>	Bald eagle	<i>Haliaeetus leucocephalus (E, T-FED)</i>
Black-crowned night heron	<i>Nycticorax nycticorax</i>	Virginia rail	<i>Rallus limicola</i>
American bittern	<i>Botaurus lentiginosus</i>	Clapper rail	<i>Rallus longirostris</i>
Mute swan	<i>Cygnus olor</i>	American oystercatcher	<i>Haematopus palliatus</i>
Tundra swan	<i>Olor columbianus</i>	Black-bellied plover	<i>Pluvialis squatarola</i>
Canada goose	<i>Branta canadensis</i>	Greater yellowlegs	<i>Tringa melanoleuca</i>
Brant	<i>Branta bernicla</i>	Willet	<i>Catoptrophorus semipalmatus</i>
Snow goose	<i>Chen caerulescens</i>	Ruddy turnstone	<i>Arenaria interpres</i>
Wood duck	<i>Aix sponsa</i>	Red Knot	<i>Calidris canutus</i>
Green-winged teal	<i>Anas rubripes</i>	Sanderling	<i>Calidris alba</i>
Mallard	<i>Anas platyrhynchos</i>	Purple sandpiper	<i>Calidris maritima</i>
Northern pintail	<i>Anas acuta</i>	Dunlin	<i>Calidris alpina</i>
Blue-winged teal	<i>Anas discors</i>	Least sandpiper	<i>Calidris minutilla</i>
Northern shoveler	<i>Anas clypeata</i>	Common snipe	<i>Capella gallinago</i>
Gadwall	<i>Anas strepera</i>	American woodcock	<i>Philohela minor</i>
Eurasian wigeon	<i>Anas penelope</i>	Parasitic jaeger	<i>Stercorarius parasiticus</i>
American wigeon	<i>Anas americana</i>	Laughing gull	<i>Larus atricilla</i>
Canvasback	<i>Aythya valisineria</i>	Little gull	<i>Larus minutus</i>
Redhead	<i>Aythya americana</i>	Bonaparte's gull	<i>Larus philadelphia</i>
Ring-necked duck	<i>Aythya collaris</i>	Ring-billed gull	<i>Larus delawarensis</i>
Greater scaup	<i>Aythya marila</i>	Herring gull	<i>Larus argentatus</i>
Lesser scaup	<i>Aythya affinis</i>	Icelandic gull	<i>Larus glaucoides</i>
Common eider	<i>Somateria mollissima</i>		

King eider	<i>Somateria spectabilis</i>	Lesser black-backed gull	<i>Larus fuscus</i>
Harlequin duck	<i>Histrionicus histrionicus</i>	Glaucous gull	<i>Larus hyperboreus</i>
Old squaw	<i>Clangula hyemalis</i>	Great black-backed gull	<i>Larus marinus</i>
Black scoter	<i>Melanitta nigra</i>	Black-legged kittiwake	<i>Rissa tridactyla</i>
Surf scoter	<i>Melanitta perspicillata</i>	Razorbill	<i>Alca torda</i>
		Dovekie	<i>Alle alle</i>
		Belted kingfisher	<i>Megaceryle alcyon</i>

It should be noted that tern colony locations are not permanent. Although a colony will usually return year after year to the same breeding site, part or all of the colony will move to another location if various environmental factors inspire them to move. This is an important characteristic for a creature that breeds on something as changeable as a shoreline. Piping plovers also nest directly on the beach. Although these birds are not colonial, they are often found in the vicinity of least tern colonies, probably because least terns prefer the same habitat as plovers.

Probably the best known coastal nesting bird in East Hampton is the osprey (T). Historic records indicate that it was common on the East End with over 300 nests reported on Gardiner's Island alone in 1932 (Andrle and Carroll, 1988). The species received much media attention when its population fell drastically during the 1950's and 1960's as a result of eggshell thinning caused by the pesticide DDT. The pesticide was banned in 1972, and in 1977 the NYS DEC began to monitor nest sites. Management efforts were made including nest site protection and the erection of nest platforms.

The species has since made a great comeback, especially on eastern Long Island, and its status was changed from endangered to threatened in 1983. However, its numbers have not returned to their pre-World War II abundance and new threats have replaced DDT. A 1986 Study showed that osprey productivity in Adirondack nests was positively correlated with the pH of their foraging sites (Clum, 1986). Other water quality problems, such as brown tide, may influence them as well.

Another well known coastal bird is the mute swan. Mute swans were released on Long Island and in the lower Hudson Valley during the late 1800's and in early 1900's. The species is well established in East Hampton today (Andrle and Carroll, 1988). Although the birds are popular and highly visible, they can cause extensive disturbance to aquatic vegetation and bottom substrates by uprooting and consuming up to 70 pounds of vegetation/bird per week. They are aggressive toward other waterfowl and sometimes kill individuals that enter their nesting territories. They are also suspected of raising total coliform levels in various bays, inlets and creeks (NYS DEC Division of Fish and Wildlife, Bureau of Wildlife, 1989).

Several of the upland portions of the coastal area contain large tracts of contiguous forests, many of which have been protected through acquisition. These areas not only provide watershed protection but also support species such as the hermit thrush, ruffed grouse and whip-poor-will which do not usually survive in urban or suburban areas. The habitat integrity of these forests is essential for the survival of such species in East Hampton.

Bird populations are monitored by a number of ongoing censuses, including the Montauk and Orient Audubon Christmas Bird Counts, Breeding Bird Censuses conducted by the Town Natural Resources Department for 1993-95, and Natural Resources Department Winter Waterfowl Counts for the embayments and open waters of the Town, conducted since 1975. The long history of bird watching on the East End is exemplified by the Montauk Christmas Bird Count, a volunteer avian census that is now in its 67th year.

In addition to breeding and wintering populations, the East Hampton waterfront supports large numbers of migrating birds. Upland areas provide feeding, resting and staging areas for flocks of passerines. Raptors are often seen hunting along the dune lines and offshore areas support large flocks of migrating waterfowl. Perhaps the most vulnerable avian migrants are the shorebirds. Many of these species travel very long distances between breeding and wintering grounds. They forage on beaches and mudflats to build up fat for their long journeys. Human disturbance of these areas is one factor contributing to their declining numbers. Birdwatching is highly dependent on season and species for location. Some examples of which species can be seen where and in what season follow.

Winter: Overwintering seabirds can usually be seen on the outer bays all along the Town's north shore, including common and red-throated loons, and sea ducks such as bufflehead, old squaw, surf and white-winged scoters, golden eye and red-breasted mergansers. Montauk Point is one of the best winter birding sites for seabirds, with gannets, eider ducks, brant, murre, razorbills, dovekies, harlequin ducks, kittiwakes, red-necked grebes, Iceland gulls and glaucous gulls some of the rarer species to be seen. Other good sites for seabirds are the north shore from Culloden to Montauk Point, around the Montauk Harbor jetties, and in the major coastal ponds, Oyster Pond, Fort Pond, and Georgica Pond. Many northern birds overwinter in East Hampton in open water, and can be seen almost anywhere that is not frozen over. On the ponds one can see canvasbacks, redheads, ruddy ducks, ubiquitous mallards and black ducks. Farm fields and open areas fill with Canada geese, with an occasional rare species such as a lapwing (sighted in 1995), and raptors such as red-tailed hawks, harrier hawks, and short-eared or snowy owls. Common resident woodland species include chickadees, bluejays, cardinals, nuthatches and the downy woodpecker.

Spring: Migratory songbirds stop over in the large forested tracts of Northwest woods and Montauk, including Barcelona Neck, the Grace Estate, Cedar Point Park, Hither Hills and Montauk Point State Parks. A few rare species can sometimes be found breeding, such as the black-throated green warbler recently documented in Northwest Woods. Whippoorwills and hermit thrushes can still be heard in the springtime woods, and spring also celebrates the return of nesting shorebirds such as the endangered piping plover. Woodcock can be observed in courtship flights over wetlands and dune swales. The first day of spring is traditionally marked as "Fishhawk Day" for the returning ospreys. The marshes of the South Fork have been pivotal in supporting a local osprey population that has been steadily rebounding from the dark days of DDT to nest on platforms erected by local environmental groups, and on Gardiner's Island, which boasts fifty nesting pairs of osprey. Because of its large areas of intact open space East Hampton was chosen by NYS DEC as one of two sites on Long Island for reintroduction of native wild turkeys, which are reportedly surviving in Hither Woods in Montauk.

Summer: Along the shore summer signals the arrival of wading birds returning to feast in productive saltmarsh around the inner harbors. Colonial shorebirds such as federally endangered roseate terns, piping plovers, and common and least terns breed locally, sharing the beach with human summer visitors, and members of the heron family feed along harbor shores and wetland fringe. Colonies of shorebirds inhabit beaches at Cedar Point, Sammy's Beach, Gerard Drive, Hicks Island and Goff Point in Napeague Harbor, the ocean beach in Napeague, and the spit at Georgica Pond.

Fall: Fall is again a season of migration and East Hampton is an important staging area and stopover on the Atlantic flyway. Clouds of tree swallows can be seen massing in the beach swales and dune areas, migrating songbirds are again encountered in the forest areas, and raptors such as endangered peregrine falcons, merlins and the American kestrel hunt prey over the expanses of Napeague meadows. Peaking in mid-August migrating shorebirds such as ruddy turnstones, dowitchers, black-bellied plovers, dunlins, and a variety of sandpipers populate the quieter north shore beaches.

Several local environmental groups, The Nature Conservancy, Group for the South Fork, South Fork Natural History Society, and East Hampton Trails Preservation Society, offer walks timed to observing birds and other wildlife throughout the seasons.

TABLE III-5: NESTING COASTAL BIRDS

The following species nest within the Town of East Hampton (Andrle and Carroll, 1988):

Common Name	Species	Breeding Status
Pied-billed grebe	<i>Podilymbus podiceps</i>	possible
Double-crested cormorant	<i>Phalacrocorax auritus</i>	confirmed
Least bittern	<i>Ixobrychus exilis (SC)</i>	probable
Great egret	<i>Casmerodius albus</i>	confirmed
Snow egret	<i>Egretta thula</i>	confirmed
Little blue heron	<i>Florida caerulea</i>	confirmed
Cattle egret	<i>Bubulcus ibis</i>	confirmed
Green-backed heron	<i>Butorides striatus</i>	confirmed
Black-crowned night-heron	<i>Nycticorax nycticorax</i>	confirmed
Glossy ibis	<i>Plegadis falcinellus</i>	confirmed
Mute swan	<i>Cygnus olor</i>	confirmed
Canada goose	<i>Branta canadensis</i>	confirmed
Wood duck	<i>Aix sponsa</i>	confirmed
Green-winged teal	<i>Anas crecca</i>	confirmed
American black duck	<i>Anas rubripes</i>	confirmed
Mallard	<i>Anas platyrhynchos</i>	confirmed
Mallard X American Black duck	<i>Anas platyrhynchos x rubripes</i>	probable
Blue-winged teal	<i>Anas discors</i>	probable
Gadwall	<i>Anas strepera</i>	confirmed
Red-breasted merganser	<i>Mergus serrator</i>	possible
Ruddy duck	<i>Oxyura jamaicensis</i>	possible
Osprey	<i>Pandion haliaetus (T)</i>	confirmed
Northern harrier	<i>Circus cyaneus (T)</i>	confirmed
Clapper rail	<i>Rallus longirostris</i>	possible
Virginia rail	<i>Rallus limicola</i>	probable
Common moorhen	<i>Gallinula chloropus</i>	probable
Piping plover	<i>Charadrius melodus (E, T-FED)</i>	confirmed
American oystercatcher	<i>Haematopus palliatus</i>	confirmed
Willet	<i>Haematopus palliatus</i>	confirmed
Spotted sandpiper	<i>Catoptrophorus semipalmatus</i>	confirmed
Herring gull	<i>Actitis macularia</i>	confirmed
Great black-backed gull	<i>Larus argentatus</i>	confirmed
Roseate tern	<i>Larus marinus</i>	confirmed
Common tern	<i>Sterna dougallii (E, E-FED)</i>	confirmed
Least tern	<i>Sterna hirundo (T)</i>	confirmed
Black skimmer	<i>Sterna antillarum(E)</i>	confirmed
Belted kingfisher	<i>Rynchops niger</i>	confirmed
Horned lark	<i>Megasceryle alcyon</i>	confirmed
Tree swallow	<i>Eremophila alpestris</i>	confirmed
Northern rough-winged swallow	<i>Iridoprocne bicolor</i>	confirmed

Bank swallow	<i>Stelgidopteryx ruficollis</i>	confirmed
Fish crow	<i>Riparia riparia</i>	confirmed
Marsh wren	<i>Corvus ossifragus</i>	probable
Savannah sparrow	<i>Cistothorus palustris</i>	confirmed
Sharp-tailed sparrow	<i>Passerculus sandwichensis</i>	confirmed
Seaside sparrow	<i>Ammodramus caudacuta</i>	probable
Red-winged blackbird	<i>Ammodramus maritima</i>	confirmed
	<i>Agelaius phoeniceus</i>	

TABLE III-6: SUMMARY OF PIPING PLOVER BREEDING SITES, 1983 - 1995*													
Location	Number of Adults												
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994***	1995**
Cedar Point County Park	2	1	0	0	1	4	1**	9	-	0	8	6	14
Northwest Harbor	0	0	0	0	0	1	0	0	0	0	0	0	0
Three Mile Harbor	2	1	0	0	0	0	0	0	0	2	2	10	6
Lion Head Beach	2	2	1	2	0	0	0	0	1	2	2	2	2
Gerard Park	0	0	4	0	2	2	2	6	8	2	4	2	2
Gerard Drive	0	0	4	2	0	1	0	2	2	6	2	6	6
Accabonac Harbor	0	2	0	0	0	0	0	-	0	0	2	2	2
Hicks Island	2	2	1	0	3	2	4	6	4	4	2	2	6
Goff Point	0	0	0	0	0	0	0	2	2	2	2	4	6
Napeague Beach East	0	2	6	5	4	1	2	3	-	1	4	6	6
Napeague Beach	2	0	4	1	2	0	0	2	4	2	2	2	4
Maidstone Beach	-	-	0	2	1	0	2	1	0	0	2	2	0
Georgica Pond	0	2	4	4	4	13	7	5	7	5	4	4	4
Plimptons Beach	2	0	0	0	0	0	0	-	-	0	0	0	0

* Data taken from Long Island Colonial Waterbird and Piping Plover Study 1983-94.

** Site discovered after survey period. *** Town of East Hampton Natural Resources Department Data.

TABLE III-7: SUMMARY OF COMMON TERN COLONIES, 1984 - 1995*												
	Number of Adults											
Location	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995**
Three Mile Harbor	52	88	28	75	39	50	0	26	18	30	0	28
Gardiner's Island	40	285	250	738	Not surveyed	0	-	0	0	0	190	392
Hicks Island	600	0	0	18	360	476	125	85	71	42	10	-
Goff Point	0	0	0	0	3	0	0	0	0	0	0	-
Oyster Pond	80	0	0	0	0	0	-	0	0	0	-	0

* Data taken from Long Island Colonial Waterbird and Piping Plover Study 1984-94.
 ** Town of East Hampton Natural Resources Department Data.

TABLE III-8: SUMMARY OF ROSEATE TERN COLONIES, 1984 - 1995*												
	Number of Adults											
Location	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995***
Three Mile Harbor	0	0	0	2	0	0	0	0	0	0	0	0
Gardiner's Island	0	60	5	133	Not surveyed	0**	0	0	0	9	28	200
Hicks Island	80	0	0	0	40	40	4	5	8	0	0	0
Goff Point	0	0	0	2	0	0	0	0	0	0	0	0
* Data taken from Long Island Colonial Waterbird and Piping Plover Study 1984-94. ** Colony surveyed outside survey period. *** Town of East Hampton Natural Resources Department Data.												

TABLE III-9: SUMMARY OF LEAST TERN COLONIES, 1982 - 1995*

Location	Number of Adults													
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994***	1995**
Cedar Point County Park	0	85	29	0	0	0	0	0	0	0	0	14	40	56
Northwest Harbor	0	0	0	0	0	6	0	20	13	0	0	0	0	0
Three Mile Harbor	200	175	60	3	31	20	18	5	0	0	11	0	0	0
Lion Head Beach	0	28	16	0	0	0	0	0	24	0	61	0	0	0
Gerard Park	0	0	0	4	0	0	0	0	0	0	0	0	150	0
Gerard Drive	0	0	24	171**	63	0	3	21	33	17	38	53	0	36
Accabonac Harbor	40	0	10	0	0	17	0	0	0	0	0	0	0	0
Hicks Island	0	45	46	0	0	27	0	47	0	60	59	0	0	200
Goff Point	0	0	75	45	0	18	19	25	32	11	50	0	0	-
Oyster Pond	0	0	80	0	0	0	0	0	0	0	0	0	0	0
Napeague Beach East	0	0	26	37	29	9	0	9	140	-	0	11	300	84
Napeague Beach	0	18	12	22	23	27	0	0	0	102	22	28	0	250
Maidstone Beach				0	26	52	40	30	2	19	31	32	6	10

Georgica Pond	0	0	4	18* *	0	14	69	245	97	85	0	13	10	18
Plimptons Beach	20	3	0	0	0	0	0	0	0	0	0	0	0	0
Gardiners Isl (Cartwright)													360	316
<p>* Data taken from Long Island Colonial Waterbird and Piping Plover Study 1984-94. ** Adult count derived from doubling the nest count of the colony. *** Town of East Hampton Natural Resources Department data.</p>														

(c) Mammals

The mammals found in East Hampton are typical of those found throughout Suffolk County, including significant numbers of white-tailed deer (*Odocoileus virginianus*). Although a hunting season (bow and shotgun) is held each year in several of the town's large open space areas, the population is large and in several areas has exceeded the "cultural" carrying capacity. However, the population has not reached the "ecological" carrying capacity (Cavanagh 1989, Lowery 1991, Penny 1991).

Also common throughout the town are the raccoon (*Procyon lotor*), opossum (*Didelphis marsupialis*), eastern cottontail (*Sylvilagus floridanus*), red fox (*Vulpes fulva*), long-tailed weasel (*Mustela frenata*) and the grey squirrel (*Sciurus carolinensis*). The wetland areas frequently support muskrat (*Ondatra zibethicus*) populations and mink (*Mustela vison*) have also been seen.

Common small mammals usually include white-footed mouse (*Peromyscus leucopus*), eastern mole (*Scalopus aquaticus*), eastern chipmunk (*Tamias striatus*), meadow vole (*Microtus icus*), pine mouse (*Pitymys pinetorum*), masked shrew (*Sorex cinereus*), short-tailed shrew (*Blarina brevicauda*) meadow jumping mouse (*Zapus hudsonius*), Norway rat (*Rattus norvegicus*) and house mouse (*Mus musculus*). The big brown bat (*Eptesicus fuscus*) is the only year-round resident bat found in the town (Planning and Natural Resources Departments, 1988).

The following marine mammals are commonly seen in the waters off East Hampton: finback whale (*Balaenoptera physalus*) (E, E-FED), saddleback dolphin (*Delphinus delphis*), harbor seal (*Phoca vitulina*), minke whale (*Balaenoptera acutorostrata*) and Atlantic pilot whale (*Globicephala melaena*).

(d) Threatened and endangered fauna

While few of the extant land mammal species are considered threatened or endangered, a number of the bird species mentioned above, some reptiles and amphibians, as well as marine turtles and mammals are listed as such by the State and Federal governments. Threatened and endangered fauna and their distribution throughout the Town's coastal zone are summarized on Table III-10.

TABLE III-10: THREATENED AND ENDANGERED FAUNA			REACH DISTRIBUTION AND USE											
Species	Common Name	Status	1	2	3	4	5	6	7	8	9	10	11	12
<i>Caretta caretta</i>	Loggerhead sea turtle	T, T-FED	M	M	M	M	M	M	M	M	M	M	M	M
<i>Chelonia mydas</i>	Green sea turtle	T, T-FED	M	M	M	M	M	M	M	M	M	M	M	M
<i>Dermochelys coriacea</i>	Leatherback sea turtle	E, E-FED	M	M	M	M	M	M	M	M	M	M	M	M
<i>Eretmochelys imbricata</i>	Hawksbill sea turtle	E, E-FED	M	M	M	M	M	M	M	M	M	M	M	M
<i>Lepidochelys kempii</i>	Atlantic Ridley sea turtle	E, E-FED	FM	FM	FM	FM	FM	FM	FM	FM	FM	FM	FM	FM
<i>Buteo lineatus</i>	Red-shouldered hawk	T	M				B							
<i>Charadrius melodus</i>	Piping plover	E, T-FED	BF M	BF	BF M	BF M					BF M	BF M	BF M	BF M
<i>Circus cyaneus</i>	Northern harrier	T	FB	F			BF M	FM		FM	FM	BF M		
<i>Falco peregrinus</i>	Peregrine falcon	E, E-FED					FM					FM		
<i>Haliaeetus leucocephalus</i>	Bald eagle	E, T-FED					FM							FM
<i>Pandion haliaetus</i>	Osprey	T	BF M	F	BF M	BF M	FM	FM	FM			FM	BF M	BF M
<i>Sterna antillarum</i>	Least tern	E	BF M	BF M	BF M	BF M	FM	FM	FM			BF M	FM	BF M

<i>Sterna dougallii</i>	Roseate tern	E, E-FED	FM	BF M	F	BF M	FM	FM	FM				FM	BF M
<i>Sterna hirundo</i>	Common tern	T	BF M	BF M		BF M	FM	FM	BF M			FM	FM	BF M
<i>Balaenoptera borealis</i>	Sei whale	E, E-FED							BF M	?	?	?	?	
<i>Balaenoptera musculus</i>	Blue whale	E, E-FED							BF M	?	?	?	?	
<i>Balaenoptera physalus</i>	Finback whale	E, E-FED							BF M	BF M	?	?	?	
<i>Eubalaena glacialis</i>	Right whale	E, E-FED							BF M	?	?	?	?	
<i>Megaptera novaeangliae</i>	Humpback whale	E, E-FED							BF M	?	?	?	?	
<i>Physeter catodon</i>	Sperm Whale	E, E-FED							BF M	?	?	?	?	

Abbreviations: STATUS: T = Listed as Threatened by NYS; E = Listed as Endangered by NYS; T-FED = Listed by Federal Government as Threatened; E-FED = Listed by the Federal Government as Endangered.

USE: B = Breeding; F = Feeding; M = Migratory

E. FISH AND WILDLIFE POLICIES

POLICY 7 SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS, AS IDENTIFIED ON THE COASTAL AREA MAP, SHALL BE PROTECTED, PRESERVED, AND, WHERE PRACTICABLE, RESTORED SO AS TO MAINTAIN THEIR VIABILITY AS HABITATS.

POLICY 7A LOCALLY SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS, AS IDENTIFIED ON THE COASTAL AREA MAP, SHALL BE PROTECTED, PRESERVED, AND WHERE PRACTICABLE, RESTORED SO AS TO MAINTAIN THEIR VIABILITY AS HABITATS.

Explanation of Policies:

Habitat protection is recognized as fundamental to assuring the survival of fish and wildlife populations. Certain habitats are particularly critical to the maintenance of a given population and therefore merit special protection. Such habitats exhibit one or more of the following characteristics:

1. Are essential to the survival of a large portion of a particular fish or wildlife population e.g., feeding ground, nursery areas,
2. Support populations of rare and endangered species,
3. Are found at a very low frequency within a coastal region,
4. Support fish and wildlife populations that have significant commercial and/or recreational value, and
5. Would be difficult or impossible to replace.

Significant Coastal Fish and Wildlife habitats are evaluated, designated and mapped pursuant to the Waterfront Revitalization and Coastal Resources Act (Executive Law of New York, Article 42). The New York State Department of Environmental Conservation (NYS DEC) evaluates the significance of coastal fish and wildlife habitats and following a recommendation from the NYS DEC, the Department of State (NYS DOS) designates and maps specific areas.

In the Town of East Hampton, sixteen habitats have been designated by the NYS DOS as Significant Coastal Fish and Wildlife Habitats and five habitats have been designated by the Town of East Hampton as Locally Significant Coastal Fish and Wildlife Habitats. These designations are the basis for the habitats described in the Inventory and Analysis section of this report.

The specific areas designated as significant coastal fish and wildlife habitats in the Town of East Hampton are as follows.

- Reach 1:* Alewife and Scoy Pond Wetlands
Cedar Point Peninsula
Northwest Creek
Sag Harbor and Northwest Harbor
- Reach 2:* Three Mile Harbor
Three Mile Harbor (locally designated)
- Reach 3:* Accabonac Harbor
Bell Estate-Fresh Pond Wetlands (locally designated)

- Reach 4:* Napeague Harbor
Culloden Point
Fort Pond
Hither Hills Upland
- Reach 6:* Big and Little Reed Ponds
Lake Montauk
- Reach 7:* Oyster Pond
Montauk Point (in part locally designated)
- Reach 8:* Montauk Point (in part locally designated)
- Reach 10:* Atlantic Double Dunes
Napeague Beach
- Reach 11:* Georgica Pond (locally designated)
Wainscott Pond (locally designated)
- Reach 12:* Gardiner's Island

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 that 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, the cumulative effect of such actions or the cumulative effects of several potential similar 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.

In determining whether an action is likely to impair a habitat, the effect of the action on the parameters which define the tolerance range of the species must be evaluated. In addition, specific examples of the types of changes that are associated with generic activities are provided to illustrate likely sources of habitat impairment. Finally, specific impact assessments for each designated habitat are provided in the Inventory and Analysis section of this document. Each of these sources of information is provided to assist in the evaluation of the habitat impairment test.

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).

The range of generic activities and the resultant impacts that would most likely affect the habitats includes but is not limited to the following.

1. Draining wetlands, ponds: cause changes in vegetation, or changes in groundwater and surface water hydrology.
2. Filling wetlands, shallow areas of streams, lakes, bays, estuaries: may change physical character of substrate (e.g., sandy to muddy, or smother vegetation, alter surface water hydrology).
3. Grading land: removes vegetation, increased surface runoff, or increased soil erosion and downstream sedimentation.
4. Vegetation removal: increases amount and rate of surface runoff, increases stream bed scouring, soil erosion, sediment deposition, habitat loss.

5. Dredging or excavation: changes substrate composition, possible release of contaminants sequestered in sediments, removal of aquatic vegetation, changes circulation patterns and sediment transport, disruption of shellfish beds.
6. Dredge material disposal: may induce shoaling of littoral areas, change circulation patterns, smother vegetation and alter bird nesting habitat.
7. Physical alteration of shore areas through channelization or construction of shore structure[s]: changes volume and rate of sediment flow, may increase scouring, sedimentation, or accelerate erosion of adjacent land.
8. Introduction, storage, disposal or leaching of pollutants such as chemicals, petrochemicals, solid wastes, nuclear wastes, toxic materials, pesticides, herbicides, fertilizers, chlorine and swimming pool biocides, wood preservatives, sewage effluent, urban and rural runoff: increased mortality or sublethal effects on organisms, alter reproductive capabilities, reduced value as food organisms.
9. Introduction of exotic flora or fauna: out compete and replace native species.
10. Disturbance of species and/or habitats: causes functional loss of habitat by trampling vegetation, removal or collection of flora or fauna, disrupts nesting, attracts predators through littering, increases predation and disturbance by pets, causes abandonment of young due to excess noise, pedestrian and vehicular traffic.
11. Fragmentation of intact habitat: functional loss of wildlife species for those species requiring larger undisturbed tracts.
12. Increased density and scale of development within and adjacent to a significant habitat: likely to result in habitat loss due to one or more of the above described activities and resulting impacts.

In addition to the preceding generic treatments of parameters and activities, impact assessments are included in the Inventory and Analysis which describe activities and impacts which could destroy or significantly impair a designated habitat. The specific impact assessments, generic list of activities and list of parameters are intended to assist in applying the habitat impairment test. Actions which would result in destruction or significant impairment of the designated habitat shall either be prohibited or modified so that the resulting impacts will not result in significant impairment of the habitat. Prohibition or modification of activities shall include those arising from land use or development adjacent to designated habitats. Furthermore, the following should also be considered on a case by case basis:

1. In evaluating proposed actions, including those for public utilities and/or semi-public authorities, agencies should actively explore and consider suitable alternative locations

sufficiently removed from the designated habitat area to minimize the potential for adverse effects on the designated habitat.

2. Natural habitats should be restored wherever they have been lost or degraded.
3. Disturbance of existing natural communities should be minimized by techniques including but not limited to clearing limitations, building envelopes, creation of reserved areas, management plans, scenic and conservation easements and the use of natural and biological pest controls.
4. Total preservation through acquisition, donation of land, easement, purchase of development rights, etc. should be considered for all areas including significant habitats and contributing adjacent areas.

Applicants and agencies are encouraged to use the narratives within the Inventory and Analysis in evaluating the effect of a proposal on the habitat. This information is, however, based on data available at the time of the habitat designation (NYS SCFWHs were designated in 1987, Local Habitats in 1991). Evaluation of any proposed action should include current data. Major habitat alterations intended for habitat management purposes should also be evaluated against potential impacts and should be thoroughly reviewed in an environmental impact statement or resource management planning process.

POLICY 7B PROTECT TO THE MAXIMUM EXTENT PRACTICABLE THE VULNERABLE PLANT AND ANIMAL SPECIES AND NATURAL COMMUNITIES THAT HAVE BEEN IDENTIFIED BY THE NEW YORK HERITAGE PROGRAM, THE NEW YORK STATE DEC PROTECTED NATIVE PLANT LIST (NYCRR 193.3), THE NEW YORK STATE DEC LIST OF ENDANGERED, THREATENED AND SPECIAL CONCERN SPECIES AND THE FEDERAL LIST OF ENDANGERED AND THREATENED WILDLIFE AND PLANTS (50 CFR 17)

Explanation of Policy:

The Town of East Hampton contains a rich variety of native flora and fauna. Of this variety, only those species or communities which are critical to the maintenance of a given fish or wildlife population are protected by Policies #7 & #7A. The goal of Policy #7B is to preserve the existing diversity. This is accomplished by protecting those species or communities which are the most vulnerable. These have been identified on the State and Federal levels by the New York Heritage Program, the New York State DEC Protected Native Plant List, the NYS DEC List of Endangered, Threatened and Special Concern Species and the Federal List of Endangered and Threatened Wildlife and Plants.

Due to the sensitive nature of the data, the precise locations of the significant vegetation have not been published. However, the plant species found to date within each reach, that appear on these

lists have been included in the Inventory and Analysis. A study of the Town's wildlife populations should be undertaken to identify locally vulnerable species.

In order to determine consistency with this policy, on all actions which require government approval, the project site shall first be inspected for the presence of any individual species or natural communities that appear on current versions of the above lists or are identified by the recommended local study. The proposed action must maximize protection of the listed species and natural communities. Methods of protection can include but are not limited to the following:

1. Relocation of proposed structures to avoid disturbance of listed species or communities;
2. Drainage plan design that avoids disturbance of listed species or communities;
3. Creation of reserved areas, management plans, scenic easements or conservation easements;
4. Subdivision layout which protects listed species or communities;
5. Transfer of land ownership to a bona fide conservation organization, and
6. Building envelopes and clearing restrictions.

POLICY 8 PROTECT FISH AND WILDLIFE RESOURCES IN THE COASTAL AREA FROM THE INTRODUCTION OF HAZARDOUS WASTES AND OTHER POLLUTANTS WHICH BIO-ACCUMULATE IN THE FOOD CHAIN OR WHICH CAUSE SIGNIFICANT SUBLETHAL OR LETHAL EFFECT ON THOSE RESOURCES.

Explanation of policy:

Hazardous wastes are unwanted by-products of manufacturing processes and are generally characterized as being flammable, corrosive, reactive, or toxic. More specifically, hazardous waste is defined in Environmental Conservation Law [§ 27-0901(3)] as "waste or combination of wastes which because of its quantity, concentration, or physical, chemical or infectious characteristics may: (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed or otherwise managed." A list of hazardous wastes has been adopted by NYS DEC (6 NYCRR Part 371).

The handling (storage, transport, treatment and disposal) of the materials included on this list is being strictly regulated in New York State to prevent their entry or introduction into the environment, particularly into the State's air, land and waters. Such controls should effectively minimize possible contamination of and bio-accumulation in the State's coastal fish and wildlife resources at levels that cause mortality or create physiological and behavioral disorders.

Other pollutants are those conventional wastes, generated from point and non-point sources, and not identified as hazardous wastes but controlled through other State laws. Remediation of sources of point and non-point conventional wastes are addressed primarily in **Section XII, Water and Air Resources Policies #30-44**.

Pollution sources and ongoing abatement efforts for coliform bacteria, stormwater runoff, pollution emanating from upland development, and hazardous materials are addressed in the inventory section. Specific point and non-point sources are further pinpointed in the individual reach inventories and analysis. Each of the twelve **Water Resources Policies** addresses different aspects of pollution problems, as summarized below:

Policy 30: Municipal, industrial and commercial discharge of pollutants

Lists sources of pollutants, both point and non-point.

Policy 31: Water quality classifications

Lists state classification of surface waters, saline and fresh.

Policy 32: Use of alternative sanitary waste systems

Provides guidelines and incentives for alternative septic systems and upgrades.

Policy 33, 33A: Best management practices to control stormwater runoff

Gives guidelines for prevention and remediation of runoff.

Policy 34, 34A: Discharge of vessel wastes

Increases number of pumpout stations and their use; limits overnight mooring; encourages boater education; 34A directs the Town to seek EPA No Discharge Zone designation for enclosed bays and harbors.

Policy 35: Dredging and dredge spoil disposal

Limits dredging and its impacts on habitat and fauna.

Policy 36: Shipment and storage of petroleum and other hazardous wastes

Guidelines to limit petroleum discharges including boat fueling procedures.

Policy 37: Best management practices to minimize non-point discharges

Proposes Surface Water Protection Overlay District where BMP for non-point will be implemented, including for septic systems, agriculture, drainage, landscaping, construction materials, and fuel tanks.

Policy 38, 38A: Groundwater protection

Guidelines for development to minimize groundwater pollution, including siting of septic systems.

Policy 39: Solid waste transport, treatment and disposal

Promotes recycling under the Town's Solid Waste Management Plan, and gives guidelines for small generators of hazardous waste.

Policy 40: Industrial discharges

Does not apply in the non-industrial East Hampton waterfront.

Policy 44: Tidal and freshwater wetlands

Provides standards for development near tidal and freshwater wetlands, including setbacks, to protect them.

The Town also has devised and implemented a *Harbor Protection Overlay District (HPOD)* to protect coastal fish and wildlife resources and to prevent pollution of surface waters. For the text of the *HPOD* local law see Appendix C.

F. IMPLEMENTATION/CONCLUSION

Implementation of the policies and recommendations described in this section are largely accomplished by existing programs and local laws. Examples of local programs include tern and plover monitoring and shorebird habitat enhancement by the Natural Resources Department, habitat protection and land acquisition by private organizations such as The Nature Conservancy and Peconic Land Trust, and land acquisition by various levels of government. The Town actively pursues habitat protection using a variety of planning and regulatory measures, including acquisition under a recently approved Open Space Plan, bond issues to purchase open space, permitting procedures such as Natural Resource Special Permits, and overlay districts such as the Water Recharge and Harbor Protection Overlay Districts. The Town Natural Resources Department continues to undertake further ecosystem studies, flora and fauna inventories, habitat management plans, wetland restoration plans, etc. Expansion of some existing programs and a number of new habitat-related initiatives are included in **Section XIV, Proposed Projects**.

The goals and objectives of **Significant Habitat Policies #7, 7A and 7B** substantially coincide with other LWRP policies, for example those pertaining to public access, recreation and commercial fishing, and will be realized by many of the same research efforts, local laws, and projects. Specific plans for implementation are addressed in the those other LWRP policy sections, as are related LWRP **Projects**.