

## Appendices

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## ***Appendix A—New York State Bird Conservation Area Program Management Guidance Summary***

**Site Name:** Caumsett State Historic Park Preserve BCA

**State Ownership and Managing Agency:** Office of Parks, Recreation, and Historic Preservation

**Location:** Suffolk County, Town of Huntington

**Size of Area:** ~1,255 acres

**DEC Region:** 1

**OPRHP Region:** Long Island

**General Site Information:** The Caumsett BCA is within Caumsett State Historic Park Preserve. Caumsett is part of NY Audubon's Huntington and Northport Bays' Important Bird Area (Burger and Liner, 2005; Wells, 1998). It is on Lloyd Neck, a peninsula on the north shore of Long Island jutting out into Long Island Sound. It is a natural area, historic site and educational facility. The Historic Park was formerly the estate of Marshall Field III. It served as a country club, hunting preserve, farm, and home.

About two-thirds of the Caumsett BCA is forest, predominately oak-tulip tree forest. Other habitats include successional old field, low salt marsh, marine eelgrass meadow, maritime beach, successional shrubland and salt shrub (Evans et. al., 2002).

Caumsett offers a variety of education and recreation programs including fishing, hiking, birding, nature photography, nature study and guided tours.

Caumsett also houses the Nassau BOCES Outdoor and Environmental Education Program, the Volunteers for Wildlife Hospital and Education Center, Willow Tree Farm Equestrian Center and the Lloyd Harbor Historical Society.

**Vision Statement:** Recreational and educational opportunities and access will continue in a manner consistent with conservation of the diverse assemblage of bird species using the area for breeding or during migration. This area will also serve as an important resource for research into the conservation of endangered and threatened species and for environmental interpretation and education.

**Key BCA Criteria:** Migratory concentration site; diverse species concentration site; individual species concentration site; and species at risk site (ECL §11-2001, 3.e-h). The site supports a high diversity of migratory birds, especially forest dwelling Neotropical migrants. Breeding birds include several species listed in New York as endangered, threatened or of special concern: Osprey (special concern), Piping Plover (state endangered and federal threatened), Common Tern (state threatened) and Least Tern (state threatened). Other state-listed species observed at Caumsett include Common Loon (special concern), Bald Eagle (state and federal threatened), Northern Harrier (threatened), Sharp-shinned Hawk (special concern), Cooper's Hawk (special concern), Northern Goshawk (special concern), Red-shouldered Hawk (special concern), Golden Eagle (endangered), Peregrine Falcon (endangered), Short-eared Owl (endangered), Whip-poor-will (special concern), Red-headed Woodpecker (special concern), Vesper Sparrow (special concern) and Grasshopper Sparrow (special concern). Piping Plovers have nested at Lloyd Point since at least 1988 with up to 13 nesting pairs. Least Terns have nested nearly every year since at least 1977 with up to 100 pairs breeding at the Point. Common Terns first nested in 1998. Protection and management of nestlings and fledglings of

these species at risk is done by State Parks. All three of these species are surveyed annually as part of the Long Island Colonial Waterbird and Piping Plover Survey.

**Critical Habitat Types:** Significant ecological community types have been identified by the scientists within the New York Natural Heritage Program, including coastal oak-hickory forest, oak-tulip tree forest, maritime beach and low salt marsh. The maritime beach is the fourth largest of six documented in the state and is a high quality example of this habitat. It is also the nesting area for Piping Plovers and Least Terns. The oak-tulip tree forest within the park is outstanding; the occurrence at Caumsett is likely the state exemplary of this type (Evans et. al., 2002). These communities contribute to the diversity of breeding and migratory birds at Caumsett and to the presence of several species of state and federally listed endangered, threatened and special concern birds.

**Operation and Management Considerations:**

*Identify habitat management activities needed to maintain site as a BCA.*

Management of the BCA will safeguard and enhance populations of wild birds and the habitats that the birds depend upon for breeding, migration, shelter, and sustenance.

Some areas of beach at Lloyd Point are becoming heavily vegetated with seaside goldenrod, resulting in less suitable habitat for nesting by Piping Plovers, Least and Common Terns. Research to determine and map the extent to which vegetation has encroached upon the habitat over time will be encouraged. Steps will be taken to restore habitat to its historic condition. Where appropriate, enhancements will be made to improve the area of suitable habitat.

The establishment and spread of invasive species is considered the greatest threat to natural communities within Caumsett State Park. State Parks will monitor and control the spread of exotic species within the natural communities of the area (Evans et. al., 2002) with the assistance of The Nature Conservancy's volunteer Weed Watcher's program. Control to protect habitats critical for breeding and migratory birds will consist of mechanical means. Other means necessary may be considered in consultation with the Environmental Management Bureau. In particular, steps will be taken to control the encroachment of vegetation into feeding and nesting areas of Piping Plovers and Common and Least Terns along the state owned portion of the cobble/sand spit extending south and west from the mainland. The region's plover stewards should continue to monitor the adjacent private land with the permission of the landowner.

Predation by gulls and crows has become a problem for nesting Piping Plovers and Least Terns. State Park plover stewards educate boaters who access this site about the importance of removing garbage and food items that attract avian predators, from the beach when they leave. Continue to use exclosures to deter aerial and terrestrial predators. Plover and tern protection will continue by State Park stewards, DEC and the USFWS. Protection measures will be done in a manner consistent with the "Piping Plover Atlantic Coast Population Revised Recovery Plan" (U.S. Fish and Wildlife Service, 1996).

There is a small population (2-3) of feral cats at the equestrian center about two miles from the Piping Plover nesting area. Parks staff has monitored the range of the feral cats (initial monitoring indicates a range of approximately ¼ mile) and their potential impact on wildlife including birds. If it is documented that they are causing adverse impacts in areas remote from the equestrian center, steps will be taken for their removal/management, in consultation with appropriate agencies.

Continue to protect shorebird habitat.

*Identify seasonal sensitivities; adjust routine operations, accordingly.*

90% of all fields are left unmowed for birds and other wildlife habitat. In the fall, 50% of the fields are mowed on a two year rotation. To the extent possible, mowing will not occur until after birds have fledged their broods, preferably after August 15<sup>th</sup>.

*Identify state activities or operations that may pose a threat to the critical habitat types identified above; recommend alternatives to existing and future operations which may pose threats to those habitats.*

Whenever possible, State Parks will allow beaches and dunes to undergo changes due to natural processes that occur with storms and high tides. Implementation of appropriate restoration projects could raise the overall quality of this area (Evans, 2002). Plank Road is in a significantly deteriorated condition. Restoration of this historic feature will ensure the historic integrity of this area, as well as allow access by park and emergency personnel. It also offers park users an alternative to walking along the shoreline, thereby reducing pedestrian traffic near nesting areas of plovers and terns.

State Parks will minimize activities that alter the natural hydrological processes of the salt marsh communities. We will avoid filling, draining and ditching activities in and around the salt marsh communities. Restoration activities will be considered where practical. (Evans, 2002)

*Identify any existing or potential use impacts; recommend new management strategies to address those impacts.*

Colonial waterbird surveyors have noted a high incidence of boaters coming ashore in the "Sand Hole" area, sometimes bringing their dogs and/or walking within fenced off areas. (Evans, 2002) State Parks' current efforts have kept encroachment to a minimum and plover productivity has remained high. We will encourage the establishment of a volunteer program to assist plover stewards in the monitoring of endangered and threatened species and the education of the general public using those areas.

The impact of environmental education activities in the saltmarsh is kept to a minimum through a permit system for access to the marsh. There has been some erosion and compaction of soils in the salt marsh due to use by numerous school groups each year. If necessary, additional steps should be taken to minimize impacts to this fragile area.

Current and traditional uses will continue, including those uses and services provided by any concessionaires pursuant to existing contracts.

### **Education, Outreach, and Research Considerations:**

*Assess current access; recommend enhanced access, if feasible.*

Current park regulations do not allow vehicles on trails or roads except by special permit. The park is open from sunrise to sunset daily.

Symbolic string fencing is put up along the beach area before the plovers return for the nesting season. Continue to put up string fencing in a manner that allows public access. The string fencing may be moved during the season to best accommodate both plovers and park users. The Regional Environmental office is looking into designing a boardwalk trail into the saltmarsh and dune areas to protect and interpret this ecosystem.

Contact the town of Huntington to request that pump boats visit the Sand Hole on a routine basis.

*Determine education and outreach needs; recommend strategies and materials.*

Educate park users about the sensitive nature of endangered and threatened nesting birds in order to provide better protection for the Piping Plovers and Least and Common Terns that use the site. Encourage stewardship to protect the dunes and beach areas.

Education by plover stewards is key to reducing incidents between plovers and boating activities. Continue distribution of informational brochure on piping plovers and colonial waterbirds at Long Island State Parks that support protection of these species.

Interpretative materials about the diverse bird species will be developed. Develop informational/interpretive signs that can be placed next to sensitive areas. Update existing bird checklist. State Parks will partner with Audubon New York and local bird clubs on interpretive programs and inventories.

*Identify research needs; prioritize and recommend specific projects or studies*

Consider the addition of a staff person for endangered species research and monitoring on a regional basis.

Monitor and control the spread of exotic species within the natural communities of the area. Control will consist of mechanical means or other means necessary to protect habitats critical for breeding and migratory birds.

Inventory of bird species is important to establishing a baseline. Periodic inventory will serve as a comparison with this baseline. Monitoring will have a focus on federally and/or state-listed species.

**Contacts:** Tom Lyons, OPRHP, Albany, phone: 518-474-0409

Ray Perry, OPRHP, Albany, phone: 518-474-0409

Gary Lawton, OPRHP, Long Island, phone: 631-581-1072

Leonard Krauss, OPRHP, Caumsett State Historic Park Preserve, phone: 631- 423-

1770

Sources:

Burger, M.F. and J.L. Liner, 2005. *Important Bird Areas of New York, 2<sup>nd</sup> Edition, Habitats Worth Protecting*. Audubon New, Albany, NY

Evans, D.J., P. G. Novak and T.W. Weldy, 2002, *Rare Species and Ecological Communities of Caumsett State Park*. New York Natural Heritage Program, Latham, NY.

U.S. Fish and Wildlife Service, 1996, *Piping Plover (Charadrius melodus) Atlantic Coast Population Revised Recovery Plan*.

Wells, J. V. 1998. *Important Bird Areas in New York State*. National Audubon Society, Albany, New York.

**Date Designated:** 06/20/06

***Appendix B—Checklist of the Birds of Caumsett State Historic Park Preserve (2010)***





**CHECKLIST OF THE BIRDS OF  
CAUMSETT STATE HISTORIC PARK**

Overlooking Lloyd Harbor with beachfront along the Long Island Sound, Caumsett State Historic Park includes 1,600 acres of woodlands, rocky shores and salt marshes. It is the former estate of Marshall Field III, founder and publisher of the New York P.M. and Chicago Sun-Times newspapers. The Matinecock Indian name he gave to his estate, Caumsett, translates into, "Place by the sharp rock".

The park is host to over 200 species of birds. The natural woodlands attract migrating song birds in the spring and fall. Endangered species nest along the shoreline in the summer months. Ducks are often seen in the waters bordering the park. Bluebirds and sparrows can be found in the park's fields. Due to its significance to birds, portions of the park have been designated Bird Conservation Areas.

For further information and to  
report rare birds, please call  
(631) 423 - 1770

**PERIODS OF OCCURRENCE**

SP	Spring:	Mar. 1-May 31
S	Summer:	June 1-Aug. 31
F	Fall:	Sept. 1-Nov. 30
W	Winter:	Dec. 1-Feb. 28

**STATUS**

- A Abundant: Hard to miss in proper habitat
- C Common: Very likely to be seen in proper habitat
- U Uncommon: Present but not likely seen
- O Occasional: Seen 1-3 times per season
- R Rare: Seen at intervals of 2-5 years
- \* Breeding: Breeding confirmed within park boundaries
- # Species designated by the NYS Dept. of Environmental Conservation as endangered, threatened, or of special concern

**OBSERVER FIELD DATA**

Name \_\_\_\_\_

Date \_\_\_\_\_ Time \_\_\_\_\_

Weather \_\_\_\_\_

Notes \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Caumsett State Historic Park Preserve: Appendix B

	SP	S	F	W		SP	S	F	W
<b>SWANS, GEESE &amp; DUCKS</b>									
___ Greater White-fronted Goose.....			R	R	___ Northern Goshawk #.....				R
___ Snow Goose.....			O	O	___ Red-shouldered Hawk#.....	O		O	
___ Brant.....	C			C	___ Broad-winged Hawk.....	O	O	O	
___ Cackling Goose.....				R	___ Red-tailed Hawk*.....	C	C	C	C
___ Canada Goose*.....	A	A	A	A	___ Rough-legged Hawk.....				R
___ Mute Swan.....	O	C	C	O	<b>FALCONS</b>				
___ Wood Duck.....	O	O	O		___ American Kestrel.....	O	O	U	O
___ Gadwall.....		O		O	___ Merlin.....	O	O	O	
___ American Wigeon.....			U	C	___ Peregrine Falcon #.....	U	O	U	R
___ American Black Duck*.....	C	C	C	C	<b>RAILS, GALLINULES &amp; COOTS</b>				
___ Mallard*.....	C	C	C	C	___ Clapper Rail.....	R	O	R	
___ Northern Shoveler.....				O	___ Virginia Rail.....	R	R	R	
___ Canvasback.....			C	O	___ American Coot.....	O	O	O	R
___ Ring-necked Duck.....				O	<b>PLOVERS</b>				
___ Greater Scaup.....				C	___ Black-bellied Plover.....	U		U	O
___ Surf Scoter.....	O		O	O	___ Semipalmated Plover.....	U		U	R
___ White-winged Scoter.....	U		U	O	___ Piping Plover #*.....	C	C	O	
___ Black Scoter.....	U		U	O	___ Killdeer*.....	C	C	C	U
___ Long-tailed Duck.....	U		U	C	<b>OYSTERCATCHERS</b>				
___ Bufflehead.....	C		C	A	___ American Oystercatcher*.....	C	C		
___ Common Goldeneye.....	C		C	A	<b>SANDPIPERS, PHALAROPES &amp; ALLIES</b>				
___ Hooded Merganser.....				O	___ Spotted Sandpiper.....	U	U		
___ Common Merganser.....				O	___ Solitary Sandpiper.....	O		O	
___ Red-breasted Merganser.....	C	U	C	C	___ Greater Yellowlegs.....	C	U	C	
___ Ruddy Duck.....	O			U	___ Ruddy Turnstone.....		U	U	
<b>PARTRIDGES, GROUSE, TURKEY &amp; QUAIL</b>					___ Sanderling.....	C		C	U
___ Ring-necked Pheasant.....	R	R	R	R	___ Semipalmated Sandpiper.....		U	O	
___ Northern Bobwhite*.....	U	U	U		___ Least Sandpiper.....		U	O	
<b>LOONS</b>					___ Dunlin.....	U		U	U
___ Red-throated Loon.....				U	___ American Woodcock*.....	U	U	U	
___ Common Loon #.....	C		O	C	<b>GULLS, TERNS &amp; SKIMMERS</b>				
<b>GREBES</b>					___ Bonaparte's Gull.....				U
___ Horned Grebe.....	C		U	C	___ Laughing Gull.....	C	C	U	R
___ Red-necked Grebe.....				R	___ Ring-billed Gull.....	A	C	A	C
<b>GANNETS</b>					___ Herring Gull.....	A	C	A	C
___ Northern Gannet.....	O		U	U	___ Great Black-backed Gull.....	C	C	C	C
<b>CORMORANTS</b>					___ Least Tern #*.....	C	C		
___ Double-crested Cormorant.....	C	C	C	U	___ Common Tern #*.....		C	C	
___ Great Cormorant.....				U	___ Black Skimmer #.....	U	O		
<b>BITTERNS &amp; HERONS &amp; ALLIES</b>					<b>PIGEONS &amp; DOVES</b>				
___ American Bittern #.....	R	R			___ Rock Pigeon*.....	C	C	C	C
___ Great Blue Heron.....	O	U	O	C	___ Mourning Dove*.....	C	C	C	C
___ Great Egret.....	C	C	C	R	<b>CUCKOOS</b>				
___ Snowy Egret.....	C	C	C	R	___ Yellow-billed Cuckoo*.....	U	U		
___ Green Heron.....	U	U	U		___ Black-billed Cuckoo*.....	U	U	U	
___ Black-crowned Night-Heron.....	U	C	O	U	<b>TYPICAL OWLS</b>				
___ Yellow-crowned Night-Heron.....	U	U			___ Eastern Screech-Owl*.....	U	U	U	U
<b>AMERICAN VULTURES</b>					___ Great Horned Owl*.....	U	U	U	U
___ Turkey Vulture.....	O	O	O		___ Barred Owl.....	R	R		
<b>KITES, EAGLES, HAWKS &amp; ALLIES</b>					___ Long-eared Owl.....	R	R		R
___ Osprey *#.....	C	C	U	R	<b>GOATSUCKERS</b>				
___ Bald Eagle #.....	R		R		___ Common Nighthawk #.....	O		O	
___ Northern Harrier #.....	U	U	U	U	<b>SWIFTS</b>				
___ Sharp-shinned Hawk #.....	U	O	C	U	___ Chimney Swift*.....	C	C	U	
___ Cooper's Hawk #.....	U	U	U	U	<b>HUMMINGBIRDS</b>				
					___ Ruby-throated Hummingbird.....	U	U	U	

Caumsett State Historic Park Preserve: Appendix B

	SP	S	F	W
<b>KINGFISHERS</b>				
___ Belted Kingfisher.....	U	U	U	U
<b>WOODPECKERS</b>				
___ Red-headed Woodpecker #.....	R			R
___ Red-bellied Woodpecker*.....	C	C	C	C
___ Yellow-bellied Sapsucker.....	U		U	U
___ Downy Woodpecker*.....	C	C	C	C
___ Hairy Woodpecker*.....	C	C	C	C
___ Northern Flicker*.....	C	C	C	C
<b>TYRANT FLYCATCHERS</b>				
___ Olive-sided Flycatcher.....	R			
___ Eastern Wood-Pewee*.....	C	C	C	
___ Yellow-bellied Flycatcher.....	O			
___ Acadian Flycatcher.....	O	O		
___ Willow Flycatcher*.....	U	U		
___ Eastern Phoebe.....	C	C	C	
___ Great Crested Flycatcher*.....	C	C	C	
___ Eastern Kingbird*.....	C	C	C	
<b>VIROES</b>				
___ White-eyed Vireo.....	U	U		
___ Yellow-throated Vireo.....		U		
___ Blue-headed Vireo.....	U		U	
___ Warbling Vireo*.....	C	C	U	
___ Red-eyed Vireo*.....	C	C	C	
<b>JAYS &amp; CROWS</b>				
___ Blue Jay*.....	A	A	A	A
___ American Crow*.....	A	A	A	A
___ Fish Crow*.....	O	C	O	O
<b>LARKS</b>				
___ Horned Lark #.....	O			O
<b>SWALLOWS</b>				
___ Purple Martin.....		U		
___ Tree Swallow*.....	A	A	C	
___ N. Rough-winged Swallow.....	U	U		
___ Bank Swallow*.....	C	C	C	
___ Cliff Swallow.....		U		
___ Barn Swallow*.....	C	A	C	
<b>CHICKADEES &amp; TITMICE</b>				
___ Black-capped Chickadee*.....	C	C	C	C
___ Tufted Titmouse*.....	C	C	C	C
<b>NUTHATCHES</b>				
___ Red-breasted Nuthatch.....			U	
___ White-breasted Nuthatch*.....	C	C	C	C
<b>CREEPERS</b>				
___ Brown Creeper.....	U	U	U	U
<b>WRENS</b>				
___ Carolina Wren*.....	C	C	C	C
___ House Wren*.....	C	C	U	
___ Winter Wren.....				U
___ Marsh Wren.....	U	U	U	O
<b>KINGLETS &amp; GNATCATCHERS</b>				
___ Golden-crowned Kinglet.....	U		C	C
___ Ruby-crowned Kinglet.....	U		C	U
___ Blue-gray Gnatcatcher.....	C	U	U	
<b>THRUSHES &amp; ALLIES</b>				
___ Eastern Bluebird *#.....	C	C	U	O

	SP	S	F	W
___ Veery*.....	U	U	U	
___ Gray-cheeked Thrush.....	R			
___ Swainson's Thrush.....	R		O	
___ Hermit Thrush.....	U	U	C	O
___ Wood Thrush*.....	C	C	O	
___ American Robin*.....	A	A	A	C
<b>MOCKINGBIRDS, THRASHER &amp; ALLIES</b>				
___ Gray Catbird*.....	A	A	C	U
___ Northern Mockingbird*.....	C	A	A	C
___ Brown Thrasher*.....	C	C	O	O
<b>STARLINGS</b>				
___ European Starling*.....	A	A	A	A
<b>WAXWINGS</b>				
___ Cedar Waxwing*.....	U	U	U	O
<b>WOOD WARBLERS</b>				
___ Blue-winged Warbler*.....	C	U	U	
___ Tennessee Warbler.....	R			
___ Nashville Warbler.....	U		U	
___ Northern Parula.....	C		U	
___ Yellow Warbler*.....	C	C	U	
___ Chestnut-sided Warbler.....	U		U	
___ Magnolia Warbler.....	C		U	
___ Cape May Warbler.....	U			
___ Black-throated Blue Warbler.....	C		U	
___ Yellow-rumped Warbler.....	C		C	U
___ Black-throated Green Warbler....	C		U	
___ Blackburnian Warbler.....	U			
___ Pine Warbler*.....	C	U	C	
___ Prairie Warbler.....	C	U	C	
___ Palm Warbler.....	C		C	
___ Bay-breasted Warbler.....	U		U	
___ Blackpoll Warbler.....	C		C	
___ Black-and-white Warbler*.....	C	U	C	
___ American Redstart*.....	C	C	C	
___ Worm-eating Warbler.....		U	C	
___ Ovenbird*.....	C	C	U	
___ Northern Waterthrush.....	U	U		
___ Louisiana Waterthrush.....	O	O		
___ Common Yellowthroat*.....	C	C	C	
___ Hooded Warbler.....	O			
___ Wilson's Warbler.....	U			
___ Canada Warbler.....	U		U	
<b>TANAGERS</b>				
___ Scarlet Tanager*.....	U	U	U	
<b>SPARROWS &amp; ALLIES</b>				
___ Eastern Towhee*.....	C	C	C	U
___ American Tree Sparrow.....	C	C	C	C
___ Chipping Sparrow*.....	C	C	U	
___ Field Sparrow.....	U	U	U	
___ Vesper Sparrow #.....	R		U	
___ Savannah Sparrow.....	U			
___ Fox Sparrow.....			U	U
___ Song Sparrow*.....	C	C	C	C
___ Swamp Sparrow.....	U	U	U	O

	SP	S	F	W
___ White-throated Sparrow .....	C		C	A
___ White-crowned Sparrow.....	O		O	O
___ Dark-eyed Junco.....	U		A	A
___ Snow Bunting.....				U
<b>CARDINALS, GROSBEAKS &amp; ALLIES</b>				
___ Northern Cardinal*.....	C	C	C	C
___ Rose-breasted Grosbeak*.....	C	U	U	
___ Indigo Bunting*.....	O	U	O	
___ Dickcissel.....				R
<b>BLACKBIRDS &amp; ALLIES</b>				
___ Bobolink .....	O	R	O	
___ Red-winged Blackbird*.....	A	A	U	O
___ Eastern Meadowlark.....			O	
___ Common Grackle*.....	C	C	C	O
___ Brown-headed Cowbird*.....	C	C	C	
___ Orchard Oriole*.....	C	C	R	
___ Baltimore Oriole*.....	C	C	U	R
<b>FINCHES &amp; ALLIES</b>				
___ Purple Finch .....	U		U	O
___ House Finch*.....	C	C	C	C
___ Red Crossbill.....				R
___ White-winged Crossbill.....				R
___ Common Redpoll.....				R
___ Pine Siskin*.....	U	U	U	O
___ American Goldfinch*.....	A	A	C	C
___ Evening Grosbeak.....			O	R
<b>OLD WORLD SPARROWS</b>				
___ House Sparrow*.....	A	A	A	A

*Special observations  
(breeding behavior, rare or out of season reports, etc.)  
should be reported to:*

New York Rare Bird Alert  
(631 - 734 - 4126)  
and then to  
Caumsett State Historic Park  
(631 - 423 - 1770)  
Thank you for your assistance.

Revised June 2009



**NEW YORK STATE**  
David Paterson, Governor

**NEW YORK STATE OFFICE OF PARKS,  
RECREATION & HISTORIC PRESERVATION**  
Carol Ash, Commissioner

**Long Island State Park Region**  
Belmont Lake State Park, P.O. Box 247, Babylon, New York 11702 (631) 669-1000



# BIRDS

OF

## CAUMSETT

STATE HISTORIC PARK



## Appendix C—Flora and Fauna of Caumsett State Historic Park Preserve

### Flora

Mature trees in these forests include a mixture of white oak (*Quercus alba*), black oak (*Q. velutina*), chestnut oak (*Q. montana*), scarlet oak (*Q. coccinea*), pignut hickory (*Carya glabra*), mockernut hickory (*C. tomentosa*), sweet pignut hickory (*C. ovalis*), tulip tree (*Liriodendron tulipifera*), American beech (*Fagus grandifolia*), black birch (*Betula lenta*), and red maple (*Acer rubrum*).

Forested upland shrubs and small trees include flowering dogwood (*Cornus florida*), and common understory associates include witchhazel (*Hamamelis virginiana*), sassafras (*Sassafras albidum*), red maple (*A. rubrum*), black cherry (*Prunus serotina*), lowbush blueberries (*Vaccinium angustifolium*, *V. pallidum*), and huckleberry (*Gaylussacia baccata*) (OPRHP, 2002) (Greller, 2005).

Herbaceous plants are represented by swan’s sedge (*Carex swanii*), panic grass (*Panicum dichotomum*), poverty grass (*Danthonia spicata*), cow-wheat (*Elapgyrum lineare*), spotted wintergreen (*Chimaphila maculate*), rattlesnake weed (*Hieracium venosum*), white wood aster (*Aster divbaricatus*), Solomon’s seal (*Polygonstum biflorum*), false Solomon’s seal (*Smilacina racemosa*), Pennsylvania sedge (*Carex pensylvanica*), white goldenrod (*Solidago bicolor*), New York fern (*Thelypteris noveboracensis*), Virginia creeper (*Parthenocissus quinquefolia*), Jack-in-the-pulpit (*Arisaema triphyllum*), and wild geranium (*Geranium maculatum*) (Greller, 2005).

Fresh Pond was surveyed for aquatic plants in 2006 (Kishbaugh 2006) by OPRHP water quality staff. The pond was found to contain narrow leaf pondweed (*Potamogeton strictifolius*), small pondweed (*Potamogeton pusillus*), and another unidentified native aquatic plant (NYS DEC 2006). As indicated in Chapter 3, the pond has more recently been found to contain common reed grass (*Phragmites australis*), an invasive plant.

### Fauna

For the most part, the park’s wildlife is typical of the region and the sub to urban setting. Mammals include woodland vole (*Microtus pinetorum*), short-tailed shrew (*Blarina brevicauda*), white-footed mouse (*Peromyscus leucopus*), eastern chipmunk (*Tamias striatus*), eastern gray squirrel (*Sciurus carolinensis*), eastern cottontail (*Sylvilagus floridanus*), woodchuck (*Marmota monox*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), red fox (*Vulpes fulva*), big brown bat (*Eptesicus fuscus*), mole (*Talpa*), and white-tailed deer (*Odocoileus virginianus*).

According to data from the New York State Amphibian and Reptile Atlas Project (NYSDEC 2008), the Fowler’s Toad (*Anaxyrus fowleri*), Spring Peeper (*Pseudacris crucifer*), Green Frog (*Lithobates clamitans melanotus*), Bullfrog (*Lithobates catesbeianus*), Northern Redback Salamander (*Plethodon cinereus*), Northern Black Racer (*Coluber c. constrictor*), Eastern Milk Snake (*Lampropeltis t. triangulum*), Eastern Garter Snake (*Thamnophis s. sirtalis*), Common Snapping Turtle (*Chelydra serpentina*), Painted Turtle (*Chrysemys picta*), Spotted Turtle (*Clemmys guttata*), Northern Diamondback Terrapin (*Malaclemys t. terrapin*), and Eastern Box Turtle (*Terrapene c. carolina*) are all found in the park. A graduate student study of box turtles was conducted in the park (Lee 2004) and results are available in the report that is available to the public at the park manager’s office.

Butterflies in the park include the following species:

Common Name	Scientific Name
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Pipevine Swallowtail	<i>Battus philenor</i>
Black Swallowtail	<i>Papilio polyxenes</i>
Eastern Tiger Swallowtail	<i>Papilio glaucus</i>
Spicebush Swallowtail	<i>Papilio troilus</i>
Cabbage White Butterfly	<i>Pieris rapae</i>
Clouded/Common Sulphur	<i>Colias philodice</i>
Orange Sulfur	<i>Colias eurtheme</i>
Coral Hairstreak	<i>Satyrium titus</i>
Eastern Tailed Blue	<i>Everes comyntas</i>
Spring/Summer Azure	<i>Celastrina ladon</i>
Great Spangled Fritillary	<i>Speyeria cybele</i>
Pearl Crescent	<i>Phyciodes tharos</i>
Baltimore Checkerspot	<i>Euphydryas phaeton</i>
Question Mark	<i>Polygonia interrogationis</i>
Mourning Cloak Butterfly	<i>Nymphalis antiopa</i>
American Lady	<i>Vanessa virginiensis</i>
Painted Lady	<i>Vanessa cardui</i>
Common Buckeye	<i>Junonia coenia</i>
Red Spotted Purple	<i>Limenitis arthemis astyanax</i>
Viceroy	<i>Limenitis archippus</i>
Little Wood Satyr	<i>Megisto cymela</i>
Common Ringlet	<i>Coenonympha tullia</i>
Wood Nymph Butterfly	<i>Cercyonis pegala</i>
Common Wood Nymph	<i>Cercyonis pegala</i>
Monarch Butterfly	<i>Danaus plexippus</i>
Silver Spotted Skipper	<i>Epargyreus clarus</i>
Northern Cloudywing	<i>Thorybes pylades</i>
Horace's Dusky Wing	<i>Erynnis horatius</i>
Wild Indigo Dusky-wing	<i>Erynnis baptisiae</i>
Peck's Skipper	<i>Polites peckius</i>
Broad-winged Skipper	<i>Poanes viator</i>

Breeding Birds of Caumsett

Caumsett State Historical Park was designated as a Bird Conservation Area (BCA) in 2006 after meeting four of the nine criteria in the BCA legislation: migratory concentration site; diverse species concentration site; individual species concentration site and species at risk site. Approximately 200 species of birds have been recorded in the park. Of this total, over 90 species may breed at Caumsett. This list of breeding birds was determined through the two New York State Breeding Bird Atlas (BBA) studies completed between 1980-1985 (NYSDEC 2007 June 6) and 2000-05 (NYSDEC 2007 June 11). Six species observed during the latter BBA are listed as Endangered, Threatened, or Special Concern within New York state. These include the Piping Plover, Northern Harrier, Least Tern, Osprey, Cooper's Hawk and Horned Lark. Furthermore, 19 species have been included in New York State's Species of Greatest Conservation Need (NYSDEC 2010a). Table 1 lists each of these species and the conservation status of each.

While both BBAs recorded over ninety species of breeding birds, the composition of the breeding bird community at Caumsett did change between the two Atlas periods. Excluding herons, ten species of birds were observed in the first BBA but absent during the second BBA.\* Those species were American Kestrel, Ring-necked Pheasant, Common Tern, Barn Owl, Common Nighthawk, Eastern Phoebe, Marsh Wren, Louisiana Waterthrush, Savannah Sparrow and Eastern Meadowlark. Sixteen new species were recorded during the second BBA: Northern Harrier, Cooper's Hawk, American Oystercatcher, Barred Owl, Long-eared Owl, Acadian Flycatcher, Willow Flycatcher, Warbling Vireo, Fish Crow, Northern Rough-winged Swallow, Blue-gray Gnatcatcher, Pine Warbler, Prairie Warbler, Worm-eating warbler, Field Sparrow and Swamp Sparrow. Note that while some of the first BBA survey may have taken place outside the park, there are few species occurring outside the park that are not also found within park boundaries. Furthermore, those species that there would be of most concern (forest interior and grassland species for this site) would be much more likely to be found within the park than in the surrounding private land.

According to McGowan and Corwin (2008) comparison of Atlas results can be an excellent source of data for detecting changes in entire groups of birds. Woodland and grassland birds experienced notable changes in breeding status both on a statewide level and in the Caumsett breeding block. Statewide woodland birds demonstrated a significant increase in their average distributions between the two Atlas periods. This may be attributed to the reforestation throughout the Northeast as well as species range expansion. Reflective of this trend the Caumsett block experienced an increase of six species that inhabit deciduous and mixed forest: Acadian Flycatcher, Warbling Vireo, Fish Crow, Blue-gray Gnatcatcher, Pine Warbler and Worm-eating Warbler. In contrast, grassland birds generally declined statewide between the two atlas periods. During the first Atlas a total of four grassland species were present in the Caumsett block. Of these species two were confirmed breeders; the Horned Lark (Species of Special Concern) and the Eastern Meadowlark. In comparison, only one grassland species was recorded during the 2000-05 BBA, the Bobolink, which was listed as a possible breeder. Statewide decreases in grassland birds have been attributed to the decline of suitable habitat as a result of farmland abandonment, succession to shrub and forest habitats, and conversion of agricultural grasslands to row crops. This is likely responsible for the decline of grassland birds at Caumsett, as other nearby open space has been converted for development. Changes in the composition of open fields within Caumsett, including increased shrub and forb growth, may also limit the site's suitability for grassland-nesting species.

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\* Caution in interpreting data on colonial waterbirds is needed since colonial waterbird surveys were used as part of the second BBA and have pinpointed the location of many of the heron and egret colonies. These surveys were not conducted during the first BBA. In addition the acceptance of breeding evidence for colonial nesters was set at a higher standard during the second BBA by the regional editor.

Sources

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***Appendix D – Existing Building Inventory: Caumsett State  
Historic Park Preserve***



## Main House



**Architect:**

John Russell Pope.

**Year Constructed:**

1923-25.

**Original Use:**

Residence.

**Existing Use:**

Vacant.

Occasionally used for meetings and special events.

**National Register Eligibility:**

Contributing.

**Map Location Key:**

#1

**Description:**

The house is a large, two-story Georgian Revival style building that contains over 22,000 square feet of living space (excluding the basement and attic). The exterior walls are clad in brick with limestone trim, including a limestone modillion cornice. The roof features extra heavy slates laid over an undulating surface. The main entrance has an elaborate limestone surround featuring Ionic pilasters, a segmental arch containing a carved eagle, surmounted by a window framed with scroll casing and a projecting entablature. The principle interior spaces have high ceilings, classically-inspired wood and plaster trim, and marble fireplace mantels. The main stair hall contains a large winding staircase with an original mural that wraps around three sides.

**History:**

The main house was built as the principle residence of Marshall Field and his family when they were staying at the estate. The house originally included a two-story wing along the west end that contained the living room and master bedroom suite, and a ell-shaped wing at the eastern end that contained servants rooms and the children’s bedrooms. Ruth Pruyn Field had these two wings removed in 1950. These changes, designed by O’Connor & Delaney architects, included alterations to several interior spaces although the new work was designed to complement and blend with the building’s original design.

During World War II, Marshall Field leased the main house (along with several other buildings on the estate) to the U.S. Office of War Information as a training facility. After the property was acquired by New York State, the building was largely vacant until around 1980 when Queen’s College established an environmental studies program in the house. This program continued until about 2002.

The house includes a green terrace that overlooks Fresh Pond. The remains of a formal garden and terrace lie at the west end of the house. This garden, designed by the Olmsted Brothers, included a circular box garden that stepped down to a rectangular flower garden. The flower garden terminated in a small staircase with a terrace that provided a scenic view of the Sound over open parkland.

## Garage and Chauffeur's Cottage



Architect:

John Russell Pope.

Year Constructed:

1923-25.

Original Use:

Multi-car garage with apartment and storage.

Existing Use:

Public restrooms (with small meeting space adjoining), apartment (for interns) and equipment storage.

National Register Eligibility:

Contributing.

Map Location Key:

#2

Description:

This is a surprisingly large building that provided storage for up to 11 automobiles on two different levels.. The central portion is a tall 1-1/2 story, hipped roof building with 3 large openings, each containing a pair of wooden doors surmounted with a half-round fanlight. The basement level includes a 1-story, flat roofed extension that is built into the hillside. The chauffeur's apartment is contained within a 1-1/2 story brick wing along the building's north side. It has a small, shed roof porch along its front (which is turned 90 degrees from the garage's main courtyard). and eight-over-eight double-hung window sash with exterior shutters.

The architectural treatment of the garage and chauffeur's cottage is similar to that of the main house. The exterior walls are clad in brick with limestone trim, and the roof is covered with heavy slates. The building has two tall brick chimneys, each with a clay chimney pot.

History:

The garage and chauffeur's cottage was built concurrent with the main house. The exterior of building has changed very little from its original design and use. This building, along with the main house and the butler's (Dinham's) cottage, was leased to Queen's College Center for Environmental Teaching and Research from about 1980 until about 2002. In 2008, the garage bays on the main floor level were sub-divided internally to create public restrooms. The small apartment within the northern wing is used to house interns and still retains its original floor plan along with most of its original finishes and features. The ground floor continues to be used for storage of materials and equipment.

## Butler's Cottage (Dinham Cottage)



Architect:

Unknown.

Year Constructed:

1939.

Original Use:

Residence.

Existing Use:

Residence.

National Register Eligibility:

Contributing.

Map Location Key:

#3

Description:

This is a relatively small 1-1/2 story frame house with a single-bay garage housed in an adjoining wing. The house has a three-bay facade with a central doorway flanked by a single window with six-over-six double-hung sash. The roof is a simple gable with a central brick chimney and two small gable-roofed dormers. The exterior walls are clad in wood shingles and the roof is covered with asphalt shingles.

History:

This modest house is among a group of small, frame buildings that were constructed for the Field estate in the late 1930s. This house was among the group of buildings leased to Queen's College from about 1980 until about 2002, where it functioned as the program director's residence. It was vacant for a few years and is once again used as a single family residence.

## Indoor Riding Rink



### Description:

The indoor riding rink is a long, low metal-clad pole barn. The barn has a low-pitch metal roof; the exterior walls are clad in vertical metal panels. The interior has a clear open space and earthen floor.

### Architect:

None.

### Year Constructed:

1985.

### Original Use:

Riding Rink.

### Existing Use:

Riding Rink.

### National Register Eligibility:

Not contributing.

### Map Location Key:

#4

### History:

The riding rink is part of the equestrian operation's licensed premises. It was built by a former operator of the equestrian concession. The building was specifically designed to provide an enclosed space for exercising and training horses as well as classes for riders. It continues to be used for these same purposes.

## Boarding Stable



### Description:

The boarding stable is a large, metal-clad pole barn. It has a low-pitch gable roof with two entrances on the gable end. The building contains stalls for horses along with space for storing feed and equipment.

### Architect:

None.

### Year Constructed:

1985.

### Original Use:

Horse stables.

### Existing Use:

Horse stables.

### National Register Eligibility:

Not contributing.

### Map Location Key:

#5

### History:

The boarding stable is part of the equestrian operation's licensed premises. It was constructed by a former operator of the equestrian concession. The building was specifically designed to provide rental stall space to compliment the concessionaire's operations. It continues to be used for these same purposes.

## Polo Stable



**Architect:**

John Russell Pope.

**Year Constructed:**

1923-25.

**Original Use:**

Horse stables with apartments.

**Existing Use:**

Horse stables with offices and apartments.

**National Register Eligibility:**

Contributing.

**Map Location Key:**

#6

**Description:**

The Polo Stable is another of the large, Georgian-style buildings associated with the Marshall Field estate. Situated prominently near the intersection of the main entrance drive and farm road, the building is U shaped in plan with secondary side wings. The main facade faces south and opens onto a courtyard enclosed by the side wings and a low brick wall with wrought-iron fence. The south elevation of the two side wings are embellished with curved gables with ball finials . Within the center of each gable end is a large limestone niche containing a fountain surmounted by an elaborate entablature with broken scroll pediment .The entire building is covered with heavy slates laid over an undulating deck and pierced by several tall brick chimneys and shed-roof dormers.

The central section is a long 2-1/2 story building with a hip roof and a copper-clad octagonal cupola that contains both a clock and a bell. The main entrance to the stables is marked by a slightly projecting gable with pediment. Centered within this bay is a large, double-leaf door with semi-circular fanlight.

The exterior walls are clad in brick. The building features a wood modillion cornice with built-in gutters. The windows are a mix of multi-light casements, usually grouped in pairs, and round windows in the upper story. The stable doorways are crowned with a molded wooden archivolt that includes a decorative keystone. The stables are well appointed with a herringbone pattern brick floor, cement plaster walls, and stalls framed with iron posts, wood slats and bronze fittings. The harness room features wood paneling and a massive limestone fireplace.

**History:**

The building was designed as a showcase for Field's riding horses. The building also contained offices for the estate's groom manager and bedrooms for grooms or stable hands.

The exterior of the building remains largely intact. The gates at the entrance to the main courtyard are missing and several bedrooms on the second floor have been damaged by water infiltration. The Polo Stable has been leased to a concessionaire that operates an equestrian boarding and training program since about 1980.



## Groom's Cottage



### Description:

The Groom's Cottage is a typical example of the Colonial Revival style framed residences that were built to house the staff who managed the Field estate. Typical Colonial Revival features include molded wooden cornices, a central doorway with Federal style surround, and six-over-six double-hung sash with exterior shutters. The house has a steeply pitched gable roof pierced with several narrow gable dormers and a central brick chimney. The roof is covered with asphalt shingles and the exterior walls are clad in wood shingles.

### History:

The building was originally designed as a duplex residence and included living quarters for the manager of the polo stable. At some point the interior was converted to a single-family residence.

Situated nearby is a small, single-car garage. The garage is a frame building with hip roof and wood shingle siding. It was moved from an area next to the Winter Cottage to its present location in 1972.

### Architect:

John Russell Pope.

### Year Constructed:

1923-25.

### Original Use:

Duplex residence.

### Existing Use:

Single-family residence.

### National Register Eligibility:

Contributing.

### Map Location Key:

#7

## Stallion Stable



### Description:

The stallion stable is a small wood-frame building with a hip roof that contains three stalls. The roof features a wide overhang supported on decorative, exposed rafter tails and two tall sheet metal vents. The exterior walls are clad in horizontal, novelty wood siding with flat trim boards. The stall doors are planks with cross bucks divided horizontally and supported on wrought-iron strap hinges. Above each door is a three-light transom window.

### History:

This is among several ancillary structures that were built for specific purposes. Originally associated with the polo stable, this building is now used largely for storage and is not part of the equestrian concessionaire's licensed premises.

### Architect:

John Russell Pope.

### Year Constructed:

1923-25.

### Original Use:

Horse stables.

### Existing Use:

Storage.

### National Register Eligibility:

Contributing.

### Map Location Key:

#8

## Pony Stable (Lower Stable)



Architect:

John Russell Pope with Alfred Hopkins.

Year Constructed:

1923-25.

Original Use:

Horse stables.

Existing Use:

Horse stables.

National Register Eligibility:

Contributing.

Map Location Key:

#9

Description:

This is a long, low hipped roof framed outbuilding containing seven horse stalls. The roof includes projecting eaves with exposed rafter tails and is covered with asphalt shingles. Several low-profile roof vents have been installed along one side of the ridge. The exterior walls are clad in wood shingles. The exterior stall doors are wood plank with cross bucks and divided horizontally. A small hopper window is centered in the bay between each doorway.

The front of the stable opens onto a fenced paddock that was installed after the property's acquisition by New York State.

History:

The pony stable is functionally related to the polo stable and the estate's horse breeding program. A purpose-built structure, it has remained in use as a horse stable. The pony stable is currently part of the equestrian operation's licensed premises.

## Summer Cottage



Architect:  
Holden, McLaughlin & Assoc.

Year Constructed:  
1939.

Original Use:  
Residence.

Existing Use:  
Classrooms and overnight  
lodging.

National Register Eligibility:  
Contributing.

Map Location Key:  
#10

### Description:

The Summer Cottage is a two-story brick residence designed in the Colonial Revival style containing both Georgian and Federal era detailing. It features a low-pitch hip roof with modillion cornice, a central doorway with pilasters and a half-round fanlight, and regularly spaced windows containing multi-light double-hung sash. The roof is covered with standard thickness slates ; a wooden balustrade originally extended along the perimeter but has since been removed. The exterior walls are clad in red brick laid in common bond.

The building includes a two-story brick and wood framed wing at the east end with a gambrel roof. Adjoining this wing on the north is a low, hipped roof two-car garage. The garage has broad eaves and a row of side-hinged wooden doors with a cross-buck design and fixed upper lights.

Directly in front of the main section is a brick terrace enclosed by a low brick wall which is accessed from a circular driveway. Within the center of the circular drive is a boxwood garden.

Opposite the main garage is free-standing, two-car garage. This other garage is wood frame with a gable roof covered with asphalt shingles. The exterior walls are clad in novelty wood siding.

### History:

The Summer Cottage was reportedly built as a residence for the McKay family, who leased the house from Marshall Field. During World War II, the Field's retained use of the Summer Cottage for themselves while they leased the main house to the government. Ruth Field lived in the Summer Cottage from about 1961 until 1966. The house is currently leased to Nassau County BOCES, which operates an environmental education program out of the facility.

## Girl's Cottage



Architect:

Unknown.

Year Constructed:

1940 (circa).

Original Use:

Residence.

Existing Use:

Residence (single family).

National Register Eligibility:

Contributing.

Map Location Key:

#11

Description:

This is a simple wood-frame cottage with an asphalt shingle roof and horizontal, novelty board siding. It is 1-1/2 stories, has an L-shaped plan with simple Colonial Revival detailing that includes square and turned wood columns at the two different porches.

History:

The house is physically adjacent to the Summer Cottage and reportedly was used to house female guests of the Field family. It likely post-dates the construction of the Summer Cottage.

The house is presently leased to Nassau County BOCES, which uses it as a residence for the director of their environmental education program.

## Winter Cottage



**Architect:**

John Russell Pope.

**Year Constructed:**

1922-23.

**Original Use:**

Residence.

**Existing Use:**

Office and storage.

**National Register Eligibility:**

Contributing.

**Map Location Key:**

#12

**Description:**

The Winter Cottage is a two-story building with an attached two-story wing. Both sections have hip roofs covered with heavy gage roofing slates. The house is Colonial Revival in its architectural detailing, with a modillion cornice, central doorway with fanlight, and symmetrically placed windows with eight-over-eight double-hung sash. Unlike any of the other buildings from the Field estate, the exterior walls are clad in course rubble, more typical of the colonial houses of the Hudson Valley and suburbs of Philadelphia.

The front of the house opens onto a stone courtyard enclosed by a low, wrought-iron railing. Immediately in front of the house is a circular drive with a small garden in the center. A second, terrace garden extends along the side of the house and includes stone stairs that descend part way down the hill.

The interior rooms were decorated with wood paneling and classically-inspired moldings. According to one account, the original builders took some of the wood paneling out of the Henry Lloyd house and installed it in the Winter Cottage. Much of the wood paneling in the principle first floor rooms was subsequently removed and installed in the Henry Lloyd house as part of restoring the Lloyd house in the early 1980s.

**History:**

The Winter Cottage was the first residence completed and occupied by the Field family. The family continued to use the house for brief stays during the winter months and as a guest cottage.

The Winter Cottage was leased to Nassau County BOCES during the 1980s and 90s and was used to house participants of their multi-day environmental education program. Currently, the house is occasionally used for meetings and contains an office for the Caumsett Foundation.

## Weir Barn



### Description:

The Weir barn is a rectangular, gable roof barn of post and beam construction. The roof is covered with wood shingles and the exterior is sheathed in vertical boards.

### History:

The barn is believed to be an 18th or early 19th century structure that was originally located elsewhere on Long Island, It was disassembled, brought to Caumsett and re-assembled there around 1988-89. The building is named after George Weir, a former president of the historical society who was actively involved in the project. It is part of the licensed premises that is leased to the Lloyd Harbor Historical Society.

Architect:

Year Constructed:

Original Use:  
Barn.

Existing Use:  
Educational.

National Register Eligibility:  
Not contributing.

Map Location Key:  
#13

## Henry Lloyd Manor House



Architect:

Henry Lloyd (assumed).

Year Constructed:

1711.

Original Use:

Residence.

Existing Use:

House museum.

National Register Eligibility:

Contributing.

Map Location Key:

#14

Description:

The Henry Lloyd manor house is a colonial saltbox style house with a side addition. The central part of the house is two stories with a gable roof and a massive central chimney. The house was added to at least twice during the 18th century. The exterior walls are clad in wood shingles (portions of which cover earlier hand-split weatherboard siding). The front doorway is trimmed with a molded wood surround and transom window.

History:

The house was built for Henry Lloyd, who moved onto the manor that was established by his father to manage its affairs in 1711. The house remained in the Lloyd family for almost two centuries although it was likely rented to a tenant farmer for most of the 19th century. Field retained the house when he acquired the lands to his estate, and remodeled it into a gate keeper's lodge. The alterations made by Pope included constructing a new entrance road that included a curved brick entranceway with large wrought-iron gates and a side passageway.

The house has been leased to the Lloyd Harbor Historical Society since 1978 and was partially restored during the early to mid 1980s. The house continues to be operated by the Lloyd Harbor Historical Society as a furnished house museum associated with the Lloyd Manor.



## Power House and Pump House No. 2



Architect:

John Russell Pope.

Year Constructed:

1923-25.

Original Use:

Electrical generation and water distribution.

Existing Use:

Storage.

National Register Eligibility:

Contributing.

Map Location Key:

#15

Description:

This is an irregular shape building that is partially set into the hillside. The central core is L shape in plan and contained two large electric generators that provided electricity to the property. Attached to the west end of this, is a nearly square wing that housed one of two sets of water pumps. At the rear of the complex and set at an angle, is another nearly square wing that was built as a garage.

The architectural design is modest but includes Colonial Revival detailing and features. The walls are a mix of coursed rubble and ashlar masonry and wood shingles. The roofline consists of a series of intersecting gables with half- and quarter-round windows and louvered vents in the gable ends. The doors are vertical plank with divided lights. The building has two large stone chimneys

The interior finishes are utilitarian: concrete floors, brick and cement plaster walls and plaster ceiling. The electrical switchgear and generators remain in place.

History:

The power and pump house were built to provide electrical and water service throughout the Field estate. The building and the mechanical equipment is remarkably intact. None of the equipment is currently in use, and the building is used primarily for storage.

## Engineer's Cottage and Pump House No. 1



Architect:

John Russell Pope.

Year Constructed:

1923-25.

Original Use:

Residence and pumping station.

Existing Use:

Residence.

National Register Eligibility:

Contributing.

Map Location Key:

#16

Description:

The engineer's cottage is a 1-1/2 story wood frame building with an attached one story wing that functioned as a water pumping station. The residence exhibits the New England Colonial Revival style with a center hall plan, large central chimney and saltbox roof configuration. The front door is embellished with fluted pilasters and a pediment with transom window. A denticulated cornice extends along the front eaves. The exterior walls are covered with wood shingles and the roof is covered with asphalt shingles.

The pump house wing is a small building with a gable roof. The walls are a mix of wood shingles and coursed rubble masonry. As in the other pump house, there is a half-round louvered vent in the upper gable end.

History:

The building was constructed as the principle residence of the estate's operating engineer. The engineer's responsibilities required staying in close proximity to the power and pump houses. Construction of Field's estate included a network of underground conduit and pipes that supplied electricity, water to all of the buildings.

The engineer's cottage is currently used as a single family residence.

## Greenhouse Complex



Architect:

Lord & Burnham, Inc.

Year Constructed:

1924-26.

Original Use:

Greenhouse.

Existing Use:

Vacant.

National Register Eligibility:

Contributing.

Map Location Key:

#17

Description:

The complex is a cluster of seven glass houses arranged in a T configuration with a brick head house at the top. The grouping included three main glass houses and four smaller houses connected to the side of the center house.

The glass houses are largely pre-fabricated and modular structures designed by the Lord and Burnham Company, a leading manufacturer of glass houses from the late 19th century and continuing into the mid 20th century. The foundations and lower walls are concrete, cast-in place. Above this level is a steel framework that is sheathed with rectangular glass panes set on a grid of cypress mullion. Stylistic detailing is minimal and is limited to the doorways, which featured small glazed porches supported on wooden brackets with fanlight transoms and sidelights.

History:

The complex was built in two phases. The first phase was completed in 1924 and include the three principle glass houses and the head house. The second phase, which was completed in 1926, added the four smaller houses to the central greenhouse. Five more large glass houses were planned for but never constructed.

The greenhouses were built to supply the Field estate with a variety of fresh fruits, vegetables and cut flowers. The estate gardener was responsible for the greenhouse operation, and lived in a cottage nearby (now demolished). The greenhouses remained in use until 1965, when they were closed down and abandoned. The glass houses are largely intact but have suffered extensive damage due to lack of maintenance.

## Farm Group



**Architect:**

Alfred Hopkins.

**Year Constructed:**

1923-25.

**Original Use:**

Agricultural, office and residential..

**Existing Use:**

Offices, maintenance and equipment storage.

**National Register Eligibility:**

Contributing.

**Map Location Key:**

#18

**Description:**

The farm group is a compact cluster of 19 buildings, many of which are connected to one another, that forms the core of the estate's dairy operation. All but one of the original 19 buildings survives.

The buildings share a common architectural treatment that includes Colonial Revival details. The principle structures include the dry stock barn, hay barn and cow (or milking) barn that form a U shape around a fenced courtyard. The horse and machinery barn is another prominent building that features a cupola. Each of the buildings is covered in wood shingles with half-round windows and vents in the upper gable ends. The dairy building includes a small porch with Tuscan columns and classical entablature.

The interior spaces are utilitarian and reflect the latest technological developments in efficiency and sanitation. The central core of the complex contains an automatic fire suppression system. The dairy includes a steam autoclave for sterilizing bottles.

**History:**

The farm group is an essential component of a self-sufficient country estate. In addition to providing fresh milk and dairy products for the Field family and estate workers, it also produced a salable commodity. Although never self-supporting economically, the presence of a dairy operation contributed to the image of a self-sufficient and fiscally sound estate.

Several of the farm buildings have been adapted for modern purposes while others remain largely vacant. The Volunteers for Wildlife occupy the former calf barn. The estate office functions as offices for park management while vehicle and equipment maintenance is performed in the old garage. The farmer's cottage has been adapted for public restrooms and a workroom for park employees. The Caumsett Foundation has nearly completed a multi-year campaign to repair and restore the building exteriors.

## Water Tanks



**Architect:**

Unknown.

**Year Constructed:**

1920s or 30s.

**Original Use:**

Water supply.

**Existing Use:**

Abandoned.

**National Register Eligibility:**

Contributing.

**Map Location Key:**

#19

**Description:**

The estate's water system included two elevated steel water tanks that served a gravity fed water system. The tanks had a combined capacity of 175,000 gallons. They are large cylinders constructed of steel plates riveted and bolted together. The tanks rest on a set of 4 steel legs with cross bracing and rise about 100 feet above the ground. The tanks are capped with conical steel roofs.

Communications equipment was attached to the side of the water tanks in 1998. These were subsequently replaced with a monopole tower. A pre-cast radio transmission structure was also located at the base of the towers.

**History:**

The water tanks are believed to have been part of the estate's original water supply and distribution system, which was laid out under the direction of John Russell Pope (along with other utilities and the road system). It is possible that the existing steel tanks represent a second generation of water storage tank, although they were likely in place by 1940.

The water tanks remained in service until the park joined the municipal water system (operated by the Suffolk County Water Authority) in 1998.



## ***Appendix E: OPRHP Guidelines for Closing Trails***

A primary goal for a trail system is for sustainable trails that have minimal impacts on the environment. However, poor design, overuse, illegal use, and other natural factors can result in degradation and the need to reroute or close the trail. Trail erosion, the most common reason for the need to relocate a trail or trail section, can be caused by a combination of trail use, gravity and water. Relocating a trail may be hard work and time-consuming, but in the long run, closing a poorly sited trail may be the best strategy for management and maintenance, for the user and for the environment.

Reclamation strategies include closure, stabilization, recontouring, revegetation, and monitoring. Each site should be evaluated individually for its potential to be rehabilitated. Trail restoration needs to be carefully planned, and the consequences of each strategy should be evaluated. Restoration can be as simple as blocking a closed section of trail and passively allowing the vegetation to recover, or include more complex projects, such as removing any trace of the tread, actively planting native vegetation, and constructing check dams to help stop erosion. Careful monitoring of a restored section of trail is then needed to ensure that little evidence remains of the old trail.

### **Steps:**

1. **Design:** If you are rerouting a section of trail, the new section needs to be well-designed (including sustainable) and better than the section that is being closed. If the new trail doesn't provide a better experience than the old trail, trail users will likely continue to use the old trail. Design the relocated trail so as to create a seamless transition from the existing trail. Trail users shouldn't be able to recognize where the re-route begins.
2. **Closure:** Each closed trail section should be restored, whether an entire trail is abandoned or a section with multiple paths is being narrowed to one tread. If the abandoned trail is not blocked to prevent further use, it may persist indefinitely.
3. **Education:** Most conflict surrounding trail closures can be avoided if people understand why a route must be closed. Be positive and focus on the benefits of the re-route. Remove abandoned trails from trail maps. Recruit volunteers to work on the new section of trail.
4. **Removal:** Remove culverts, bridges, stepping stones, and other structures and materials that were installed to harden the old trail surface.
5. **Stabilization and/or Scarification:** Stabilization should be performed on eroded sections of trail tread. This will help prevent future erosion and promote natural revegetation. This includes adding drainage control and/or erosion control measures to prevent erosion from increasing; and adding slash to eroded ruts to keep visitors out and create protection for seeds. Restoring the natural contour of the slope reestablishes the local drainage patterns. Recontouring helps eliminate the temptation to use the old trail. Check dams are used on sections of trenched tread to stop erosion and hold material in place during site restoration. Scarification may be necessary when the trail tread is compacted. Completely break up, or scarify, the compacted soil to a depth of 4 inches to allow the seeds and roots of new plants to penetrate. This is an important step to aerate the soil and promote natural revegetation.
6. **Naturalization and Revegetation:** Naturalization may include filling or reshaping trail ruts and site scars to blend with or match the original landform and covering bare soil with forest duff and fallen trees as appropriate using a natural pattern to seamlessly blend the site into the surrounding area. Revegetation of the trail can be a passive or an active process. Ideally, the whole length of all closed trails would be renaturalized as thoroughly as possible to replicate surrounding natural systems, but realistically, this can be difficult or even

undesirable because of associated costs, risk of introducing exotic species, or risk of causing excessive damage during repair operations. Therefore, different parts of the same corridor can be repaired to varying standards depending on the extent of impact, location, and type of ecosystem. For instance, the ends of a decommissioned trail may be extensively repaired to restore the original landform and vegetation as much as practical, while in the center of the trail repair may simply involve stabilizing the site and encouraging natural vegetation succession with or without soil amendment, seeding, planting, or transplanting.

• **Passive Revegetation:**

Passive restoration, or natural recovery, allows local vegetation to re-establish itself on an abandoned section of trail once the conditions preventing vegetative recovery have been abated (stabilization/scarification). Sometimes active restoration may not be necessary once the human impact has been removed, especially in areas that are wet, where the soil is in good condition to serve as a seedbed, and that have a suitable native seed source nearby.

• **Active Revegetation:**

Active restoration usually involves transplanting native plants onto the old trail surface or importing seed that is appropriate for the area. Disturbed soil often provides an opportunity for invasive plant species to take hold. Transplanting native species of shrubs and trees (including those from your re-route construction) can combat these invasives. Use proper transplanting techniques. Rake or sprinkle duff and leaves on bare ground; these may contain seeds that will help promote active revegetation. (More details on active revegetation are provided below.)

7. **Disguise:** The best way to keep people off the closed trail is to make it look like it was never there. Brush, rocks, branches and other natural material should be placed on the abandoned trail for a distance so the linear characteristic of the trail can not be readily identifiable. Use material excavated from a new trail to fill in the closed trail, as needed. Fill in the visual opening of the old trail corridor by planting trees and shrubs. Rake or sprinkle duff and leaves on bare ground. Some type of physical barrier (trees, shrubs, branches, rocks) *and* reduction in the visibility of the old trail tread and trail corridor are both necessary to effectively close a trail. Relying solely on fences and gates to block entrances of closed trails has not been found to be very effective. Lacking other visual cues that the trail is closed, users tend to bypass a barrier to continue accessing a trail.
8. **Monitor:** A monitoring program for closed trails will include occasional inspections of closed trails. This will allow early detection of any problems (ex. users bypassing the closed entrance, effectiveness of check dams, continued erosion).

**Methods:**

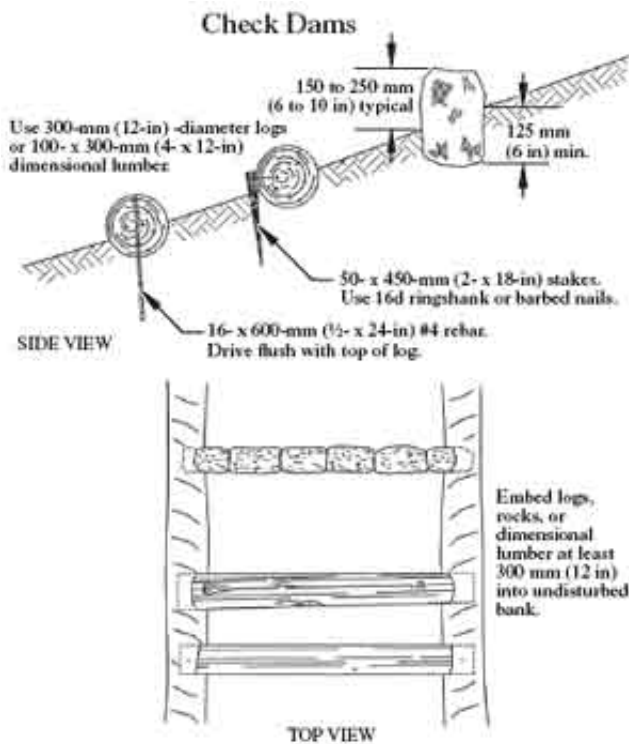
- **Check Dams** (From the US Forest Service Trail Construction and Maintenance Notebook):

Check dams are intended to slow and hold surface water long enough for the water to deposit sediment it is carrying. Check dams are best used as holding structures for fill to help recontour the old tread. The material used in the dam should be seated in an excavated footing that extends into the sides of the gully. As material behind the dam builds up, additional levels can be added to the dam with enough batter to keep the dam stable against the pressure of the fill. The top of the dam should be level or slightly higher than the excavated footing. For watertightness, the uphill face of the dam should be chinked and



covered with tamped fill. These trenches take a long time to fill up. Most never do. If they do, add fill below the dam to finish the process.

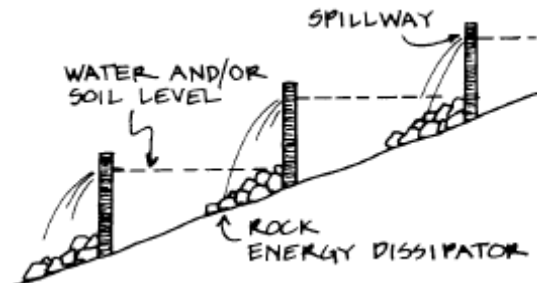
Spacing between dams depends on the steepness of the old grade and the degree of restoration desired. If the check dams are intended only to slow down erosion on a 25-percent grade, relatively wide spacing is sufficient, every 20 meters (65 feet). If the intent is to fill in half of the old trench, the bottom of each dam should be level with the top of the next lower dam. On steeper grades, the dams need to be closer together. If the intent is to approach complete recontouring of the trench, the dams should be closer still, especially on grades steeper than 25 percent. A point of diminishing returns is reached on grades steeper than 40 percent. Check dams would have to be built right on top of each other to retain soil at the full depth of the trench.



Drawing of the side view and top view of a check dam. The drawing includes the text:

- Use 300-mm (12 in)-diameter logs or 100- x 300-mm (4- x 12-in) dimensional lumber.
- 150 to 250 mm (6 to 10 in) typical.
- 125 mm (6 in) min.
- 50- X 450-mm (2- x 18-in) stakes. Use 16d ringshank or barbed nails.
- 16- X 600-mm (1/2-x 24-in) #4 rebar. Drive flush with top of log.

Embed logs, rocks, or dimensional lumber at least 300 mm (12 in) into undisturbed bank.



• **Active Revegetation**

Successful revegetation may require tending over an extended period of time. The following sequence of events is used when implementing an active restoration project:

1. Select an appropriate plant community as a model for the restoration prescription.
2. Assess soil conditions and formulate treatments.
3. Select appropriate plant species and propagation methods.
4. Identify methods for protecting the project from damaging environmental forces and human use.
5. Determine how the project will be documented and monitored.
6. Identify ongoing maintenance needs.

The following is from the US Forest Service Wilderness and Backcountry Site Restoration Guide (2006):

<b>Onsite propagation method</b>	<b>Advantages</b>	<b>Disadvantages</b>
Common to all methods of onsite propagation.	All methods, if successful, are less expensive than offsite propagation and generally eliminate the time required to propagate plants.	Plant materials for propagation often are limited. Success can be limited in many environments.
Onsite seeding – Native seeds are collected and sown directly onto the area to be restored.	If successful, this method is relatively inexpensive. For small areas, onsite seeding can be accomplished without special equipment. Most seeds would not require special treatment to break dormancy. Treatment can be done without delay while plants are growing in a nursery. The genetic diversity of the plant community is maintained.	Germination rates are low in many environments, such as in arid lands and in the subalpine zone. Seeds sown on arid lands could be dormant for years before rainfall is adequate to induce germination. Seed production and viability can vary tremendously from year to year. Seed may have to be collected several years in advance. It can take many years for seedling plants to mature and establish stand structures similar to the target plant community. Rodents, birds, or insects can eat the seeds.
Onsite rooting of cuttings – A limited number of species will root when the cuttings are planted directly in moist soil on the area to be restored.	If successful, this method is relatively inexpensive. Treatment can be done without the delay of growing plants in a nursery. Onsite rooting of cuttings works well with bioengineering methods of slope stabilization. Larger plants are more visible at the restoration site and could deter use.	This technique requires that the soil be moist long enough for the seedling to develop an adequate root system; generally limited to riparian areas. Success is limited to genera and species that root readily, such as willow ( <i>Salix</i> spp.), some dogwoods ( <i>Cornus</i> spp.), cottonwood and poplar ( <i>Populus</i> spp.), some alder ( <i>Alnus</i> spp.), some elderberry ( <i>Sambucus</i> spp.), and honeysuckle ( <i>Lonicera</i> spp.). Plant material for cuttings may be limited. New plants are a clone of the parent plant, limiting genetic diversity. This technique is more labor intensive than seeding.

<b>Onsite propagation method</b>	<b>Advantages</b>	<b>Disadvantages</b>
<p>Onsite divisions – Species with fibrous root systems, rhizomes, or stolons can be dug up, broken apart at the roots into multiple plants, and transplanted. Sprigging is a variation where small plant parts are scattered across the site and raked or tilled into the soil without planting each part individually.</p>	<p>If successful, this method is relatively inexpensive. Treatment can be done without the delay of growing plants in a nursery.</p>	<p>Plant material to be broken apart may be limited. New plants are a clone of the parent plant, limited diversity. Onsite divisions require more labor than seeding. Onsite divisions can damage undisturbed areas where material is collected. Holes need to be filled after transplants are dug up.</p>
<p>Onsite layering – The attached branch or shoot of a parent plant is rooted.</p>	<p>Works well on trails that have shrubs growing alongside the trail.</p>	<p>Success is limited to species that layer or root readily. Onsite layering generally is useful only where appropriate shrubs, trees, or vines are growing alongside the site being treated. The new plants are a clone of the parent plant, limiting diversity.</p>
<p>Transplanting wildlings – Native local plants are dug up and transplanted.</p>	<p>Ground-disturbing projects that are occurring nearby, such as trail or road construction, can be a source of transplants. Local plants are adapted to the area. This technique produces results immediately with more mature plants. Larger plants are more visible at restoration site and could help deter use while the site is recovering.</p>	<p>Not all wildlings will transplant well, especially large plants, plants with taproots, or plants with very specific requirements for establishment. Unless transplants are salvaged, transplanting damages the undisturbed area where the transplants are collected. Salvage operations often require holding plant materials until they can be replanted. This increases the labor required and can complicate the logistics.</p>
<p>Common to all methods of offsite propagation. Nursery stock types range from bareroot plants, to small containers or plugs, and to larger containers. The preferred stock type is based on predicted survival requirements and project goals.</p>	<p>For many environments, offsite propagation allows for much more rapid stabilization of the site and establishment of the plants at the site. Offsite propagation is the best way to propagate plants that are difficult to establish with onsite techniques. Offsite propagation prevents damage to the collection site caused by overcollection of materials that are needed for most onsite propagation</p>	<p>All offsite propagation techniques require varying amounts of facilities, equipment, staff expertise, and daily care, raising costs considerably above those for onsite treatments. The time needed to propagate species may range from 6 months to several years. Pathogens or other nonnative insect or plant species may be introduced. Transportation of plants to roadless project locations increases the cost and adds logistical difficulties. Plants may need to be held at the</p>

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<b>Onsite propagation method</b>	<b>Advantages</b>	<b>Disadvantages</b>
	techniques.	nursery until they can be outplanted. This increases logistical difficulties and the possibility that plants may not survive. Animals are most likely to eat fertilized nursery-grown stock once it's outplanted.
Offsite seedlings – Native seeds are collected and sown into nursery beds, flats, or containers.	Offsite propagation can produce better germination and survival rates than onsite seeding. The diversity of the plant community is generally maintained.	Seed production and viability can vary tremendously from year to year. It may be necessary to collect seed several years in advance. Offsite germination and growing conditions may select for or against certain traits, changing the genetics of propagated plants.
Offsite rooting of cuttings – A portion of the plant, usually the stem, is cut off and rooted. Different species respond to different types of cuttings.	Offsite rooting of cuttings is a good method when seed is unavailable or difficult to work with. A wide variety of species will root from cuttings. Many species grow faster from cuttings.	New plants are a clone of the parent plant, limiting diversity.
Offsite divisions – Species with fibrous root systems, rhizomes, or stolons can be dug up, broken apart at the roots into multiple plants, and then transplanted.	Offsite divisions is a good method when seed is unavailable or difficult to work with. Divisions can be made over and over in a nursery until it is time to outplant the seedlings.	The new plant is a clone of the parent plant, limiting diversity.
Seed-increase programs – Native seed is collected onsite and grown offsite to produce a seed crop.	Seed-increase programs are the only way to multiply a small amount of seed into a large amount. This technique is best used when a large quantity of seed is needed. Seed can be used as soon as it is produced, or stored until it is needed for fire rehabilitation or mine reclamation.	The plant's genetic makeup can shift based on growing conditions, harvest timing and methods, and seed-cleaning techniques. It is difficult not to introduce weed seed.

<b>Onsite propagation method</b>	<b>Advantages</b>	<b>Disadvantages</b>
Tissue propagation – Plants are propagated from very small pieces of plant material, such as the growing tips of shoots.	Tissue propagation is generally used with species that are difficult to propagate or with rare plants with limited vegetative material available for propagation.	This technique is very expensive. New plants are a clone of the parent plant, limiting diversity.

## Resources

International Mountain Bicycling Association. “Closing and Reclaiming Damaged Trails.”  
[http://www.imba.com/resources/trail\\_building/reclaiming\\_trail.html](http://www.imba.com/resources/trail_building/reclaiming_trail.html)

Minnesota Department of Natural Resources (2007). “Principles of Ecological Sustainability.” *Trail Planning, Design, and Development Guidelines*. Trails & Waterways Division, St. Paul, MN.

USDA Forest Service (2007). “Reclaiming Trails.” *Trail Construction and Maintenance Notebook*.  
<http://www.fhwa.dot.gov/environment/fspubs/07232806/page14.htm>

USDA Forest Service (2006). *Wilderness and Backcountry Site Restoration Guide*.  
<http://www.treearch.fs.fed.us/pubs/26795>



## **Appendix F: Trail Standards and Guidelines for New York State Parks**

A primary goal for all State Park Trails Systems is to develop sustainable trails that have minimal impacts on the environment, require little maintenance, and meet the needs of the users. Standards and guidelines are provided here for design, development, and maintenance techniques that help ensure a sustainable trail system, including guidelines for signage, accessibility, trail monitoring, and trail closure.

### **Trailheads, Kiosks, Signage**

It is important that trail users have access to information regarding trails to enhance their experience. Trail information can be disseminated in a wide variety of formats, including kiosks, brochures, websites, guidebooks, and on-trail signs and blazes. But even with good trail guides and websites available, trail signage is indispensable. If trail users are uncertain about trail location or direction, they may become disoriented, or they may create new trails that damage the environment and become a challenge to rehabilitate.

A standardized sign system is a means of creating a cohesive and consistent image for the Park, enhancing its overall appearance, and providing simple guidelines that managers can follow to sign trails. The design and usage of all trailhead and kiosk signage and trail markers will be guided by the *Trail Signage Guidelines for the New York State Park System*. This document includes information on naming and assessing trails, etiquette and safety, materials and techniques, trail symbols, types of signage, kiosks, sign maintenance, and other resources.

### **Design**

Trails should be developed using appropriate design standards based on desired uses. Considerations should be made for either a single or multiple treadway, tread width and surface, corridor and vertical clearance, sight distance, grades, and turning radius to provide an appropriate trail experience for expected users and levels of use.

Trail development and maintenance will be guided by design standards as provided in the table below for various types of uses. These standards should be used as a starting point and modified as necessary to address the natural characteristics of the resource and specific needs.

Trail development standards

Trail Type	Vertical Clearance	Corridor Clearance	Treadway Width	Surfacing Materials	Trail Length	Sight Distance	Slope	Turning Radius	Users/Mile
Biking Class I (Path)	8-10 feet	5-6 ft. (1 lane) 8-10 ft. (2 lane)	2-3 ft. (1 lane) 6-8 ft. (2 lane)	Smooth pavement, asphalt, concrete, crushed stone, clay or stabilized earth.	Min. – 5 mi. loop (1.5-2 hour) 15-25 mi. of linear or loop trails (day trip)	Min. of 50 ft. up to 100 ft. on downhill curves or road crossings	0-5% Max: 5-10% sustained 15% shorter than 50 yd. Outslope of 2-4%	8-14 feet depending upon speed.	40
Mountain Biking	8-10 feet	1.5 – 6 ft. (1 lane)	Novice-36 in. Intermediate-24-30 in. Advanced-12-18 in.	Firm natural surface including soil, rocks, wood; hardened surface for wet areas.	Min. – 5 mi. loop (1.5-2 hour) 15-25 mi. of linear or loop trails (day trip)	Min. of 100 ft. up to 150 ft. on downhill curves or road crossings	Over all grade not to exceed 10%. Climbing turns not to exceed 7-12%. Out slope of 3-5%	Novice/Intermediate - 8 ft. min. Advanced – 6 ft min.	10
Cross-country Skiing	8-10 ft. above snow depth. (10-12 ft in summer)	8 ft (1 lane) 10-12 ft. (2 lane)	4-6 ft. (1lane) 7-8 ft. (2lane) 8-10 ft. (up and down hill)	Snow with underlying bare soil, rocks or wood chips. Outsloped underlying material. Can be groomed or ungroomed.	0.5-3 mi. loops up to 4-8 mi. (2-4 hour trip)	Down hill runs, stream or road crossings 50 ft. Otherwise not critical	0-5% Max – 10% sustained 15-25% shorter than 50 yd. 25-40% shorter than 50 yd., experts only Outslope – 0-2%	Avoid sharp turns. Never locate a turn at the base of a downhill run. Min. - 50 ft. Preferred – 100 ft.	5-30
Hiking (Developed Interpretive, group or connector)	8-10 ft	4 –8 ft	4-6 ft	Bare soil, rocks, stone dust, or wood chips. May have hardened surface (concrete, asphalt or boardwalks) in high use areas.	0.25 – 5 mi. (1/2 day) 5-15 mi. (full day)	Not critical barrier on reverse curves may be used	0-5% Max – 15% sustained 40%+ shorter than 50 yd. Outslope – 4% max	N/A	0-30
Hiking (Primitive Back-packing)	8-10 ft.	4-6 ft.	18 –30 in.	Bare soil, rocks, gravel, wood; hardened surface for wet areas.	Min – 5 mi. 5-15 mi. (full day) 15 – 25+ mi. (multi-day)	Not critical	1-5% Max - 15% sustained 40-50% shorter than 50 yd.	N/A	1-5



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Trail Type	Vertical Clearance	Corridor Clearance	Treadway Width	Surfacing Materials	Trail Length	Sight Distance	Slope	Turning Radius	Users/Mile
Snowshoe	8-10 feet above snow depth (10-12 ft. in summer)	8 ft. (1 Lane) 10-12 ft. (2 Lane)	4-6 ft. (1 Lane) 7-8 ft. (2 Lane) 8-10 ft. up and down hill	Snow with underlying bare soil, rocks or wood chips. Outsloped underlying material. No grooming is needed.	0.3 mi. loops; 4-8 mi. (2-4 hr. trips)	N/A	0-5% Max. - 10% sustained 15-25% shorter than 50 yds. for experienced snowshoers	N/A	5-30
Horse	10-12 ft.	5-6 ft. (1 lane)	18-30 in. (1 lane)	Soils having a large percentage of rocks, clay and/or organic matter. Void of rocks football sized or larger. Little treadway development required if soils are appropriate. In problem areas, water control measures may be installed. Brush and saplings should be cut flush or below ground level. Remove dead or leaning trees.	Min – 5 mi. (1-1.5 hours) 15-25 mi. of looped trails (full day)	Not critical unless 2 way traffic. 50-100 ft. 100-200 ft. at motorized road crossings.	0-10% Max – 10% sustained 20% shorter than 50 yd. Outslope 4% max.	Min. 6 ft. Wider turns preferred.	5-15
Snowmobile	8-12 ft. above snow depth (10-12 ft. in summer)	1A- 14-16 ft. 1B- 14-16 ft. C- 8-12 ft. D- 8 ft. min.	1A –12 ft. 1B –8-12 ft. C –4-8 ft. D –4ft. min.	Groomed snow Groomed snow Groomed snow Ungroomed snow	5-50 mi.	Min – 50 ft. 100+ ft.	10 – 15% Max - 25% sustained 40% shorter than 50 yd.	Min. 50 ft. 100 ft.	15

## Accessibility

New trails and altered trails connected to an accessible trail or designated trailhead should be designed to improve accessibility for persons with disabilities. Trail conditions, including topography, geology, and ecology, and expected experience will limit the number of fully accessible trails. The *Draft Final Accessibility Guidelines for Outdoor Developed Areas* (AGODA), published in 2009 by the federal Architectural and Transportation Barriers Compliance Board (“Access Board”), contains the most recent standards used to design and construct pedestrian trails to be accessible, and to assess accessibility. There are some departures permitted from the technical provisions. Although the AGODA only applies to federal agencies or for trails that are designed or constructed using federal funds, OPRHP will follow the proposed guidelines as closely as practicable and apply standards consistently on all State Park pedestrian trails. For further details, refer to the AGODA at <http://www.access-board.gov/outdoor/index.htm>. The following is an abbreviated listing of the proposed standards without the exceptions:

- Surface – The trail surface shall be firm and stable.
- Clear Tread Width – The clear tread width of the trail shall be 36 inches minimum.
- Openings – Openings in trail surface shall be of a size that does not permit passage of a ½ inch diameter sphere. Elongated openings shall be placed so that the long dimension is perpendicular or diagonal to the dominant direction of travel.
- Protruding Objects – Protruding objects on trails shall have 80 inches minimum clear head room.
- Tread Obstacles – Where tread obstacles exist, for concrete, asphalt or boards, they shall not exceed ½ inch in height; for all other surfaces, they shall not exceed 2 inches in height.
- Passing Space – Where the clear tread width of the trail is less than 60 inches, passing spaces shall be provided at intervals of 1000 feet maximum. Passing spaces shall be either 60 inches minimum by 60 inches minimum space, or an intersection of two walking surfaces which provide a T-shaped space provided that the arms and stem of the T-shaped extend at least 48 inches beyond the intersection.
- Slopes – Slopes shall comply with the following:
  - Cross Slopes – For concrete, asphalt or boards, the cross slope shall not exceed 1:48; for all other surfaces, the cross slope shall not exceed 1:20.
  - Running Slope – Running slope of trail segments shall comply with one or more of the provisions of this section. No more than 30 percent of the total trail length shall exceed a running slope of 1:12.
  - The running slope of any segment of a trail shall not be steeper than 1:8.
  - Where the running slope of a segment of a trail is steeper than 1:20, the maximum length of the segment shall be in accordance with the table below, and a resting interval shall be provided at each end of the segment.

Running Slope of Trail Segment		Maximum Length of Segment
Steeper than	But not Steeper than	
1:20	1:12	200 feet (61 m)
1:12	1:10	30 feet (9 m)
1:10	1:8	10 feet (3050 mm)

- Resting Intervals – Resting intervals shall be 60 inches minimum in length and shall have a width at least as wide as the widest portion of the trail segment leading to the resting interval.

Where the surface is concrete, asphalt, or boards, the slope shall not be steeper than 1:48 in any direction; for all other surfaces, the slope shall not exceed 1:20 in any direction.

- Edge Protection – Where edge protection is provided along a trail, the edge protection shall have a height of 3 inches minimum.
- Signs – Newly constructed and altered trails and trail segments that are accessible shall be designated with a symbol at the trail head and all designated access points. Signs identifying accessible trail segments shall include the total distance of the accessible segment and the location of the first point of departure from the technical provisions.
- Where gates or barriers are constructed to control access to trails, gates and barriers shall provide a clear width of 32 inches minimum.

In all cases, it is recommended that basic information about trail characteristics be displayed at the trailhead. This allows the trail user the opportunity to determine if the trail is appropriate for their abilities. This information should be available for all trails regardless of whether they meet the accessible guidelines.

The following is a recommended list of information that should be displayed at the trailhead:

- Trail Symbol
- Total trail length (in linear feet)
- Length of trail segments meeting accessible standards (in linear feet)
- Location of the first point of exception to accessible standards
- Running slope (average and maximum)
- Maximum cross slope
- Minimum clear tread width
- Surface type, firmness, and stability
- Tread obstacles that limit accessibility
- Elevation (trailhead, maximum, and minimum)
- Total elevation change

## **Maintenance**

Maintenance of the trails will be conducted by Park staff as well as in partnership with various trail user or Friends groups. Trail maintenance standards will utilize acceptable practices and methods in the maintenance of trails to the particular uses of the trails. Maintenance activities include:

- Maintaining drainage structures
- Water management such as development of knicks, rolling grade dips to divert water off of a trail
- Surface treatment
- Clearing and grubbing to maintain height and width clearances
- Maintaining bridges and other structures
- Maintaining signage
- Using established trail construction and maintenance techniques to control water flow and stabilize trail surfaces.

These activities should be coordinated with the park manager. Activities that go beyond normal maintenance will require the approval of the park manager. Park staff will maintain the parking lots and support facilities.

The following manuals may be used as resource guides for trail maintenance:

- *Trail Planning, Design, & Development Guidelines*. State of Minnesota, Department of Natural Resources, 2007. Trails and Waterways Division. <http://www.dnr.state.mn.us/index.html>
- *Trail Maintenance Manual, 7<sup>th</sup> Edition Revised*. 2007. New York-New Jersey Trail Conference, Inc. <http://www.nynjtc.org/volunteers/vresource.html>.
- *Trail Construction and Maintenance Notebook*. 2007 Edition. Forest Service, US Department of Agriculture. <http://www.fhwa.dot.gov/environment/fspubs/07232806/index.htm>.
- *Lightly on the Land: The SCA Trail-Building and Maintenance Manual*. 2006. Robert C. Birkby, The Student Conservation Association. <http://www.thesca.org/>
- *Trail Solutions: IMBA's Guide to Building Sweet Singletrack*. 2004. International Mountain Bicycling Association. <http://www.imba.com/index.html>
- *Equestrian Design Guidebook for Trails, Trailheads and Campgrounds*. December 2007. US Department of Agriculture, Forest Service - Missoula Technology and Development Center. <http://www.fhwa.dot.gov/environment/fspubs/07232816/index.htm>

## Trail Closure

Sometimes it is necessary to close or reroute a trail due to poor initial design, overuse, illegal use, or other natural factors having caused some type of degradation. Reclamation strategies include closure, stabilization, recontouring, revegetation, and monitoring. Each site should be evaluated individually for its potential to be rehabilitated. Trail restoration needs to be carefully planned, and the consequences of each strategy should be evaluated. Restoration can be as simple as blocking a closed section of trail and passively allowing the vegetation to recover, or include more complex projects, such as removing any trace of the tread, actively planting native vegetation, and constructing check dams to help stop erosion. Careful monitoring of a restored section of trail is then needed to ensure that little evidence remains of the old trail.

All plantings will be with native, non-invasive species. Vegetation should be allowed to grow on the abandoned trail where it intersects with a designated trail. Brush, rocks and other natural material should be placed on the abandoned trail for a distance so the linear characteristic of the trail can not be readily identifiable. These abandoned trails should not be identified on trail maps.

The *OPRHP Guidelines for Closing Trails* provides the detailed process to be taken to close trails in state parks.

## Evaluation, Assessment and Monitoring

The following guidelines will be utilized in the review and approval process for new trails or the realignment of existing trails and implementation of a monitoring system.

### ***New Trails and Re-alignment of Existing Trails***

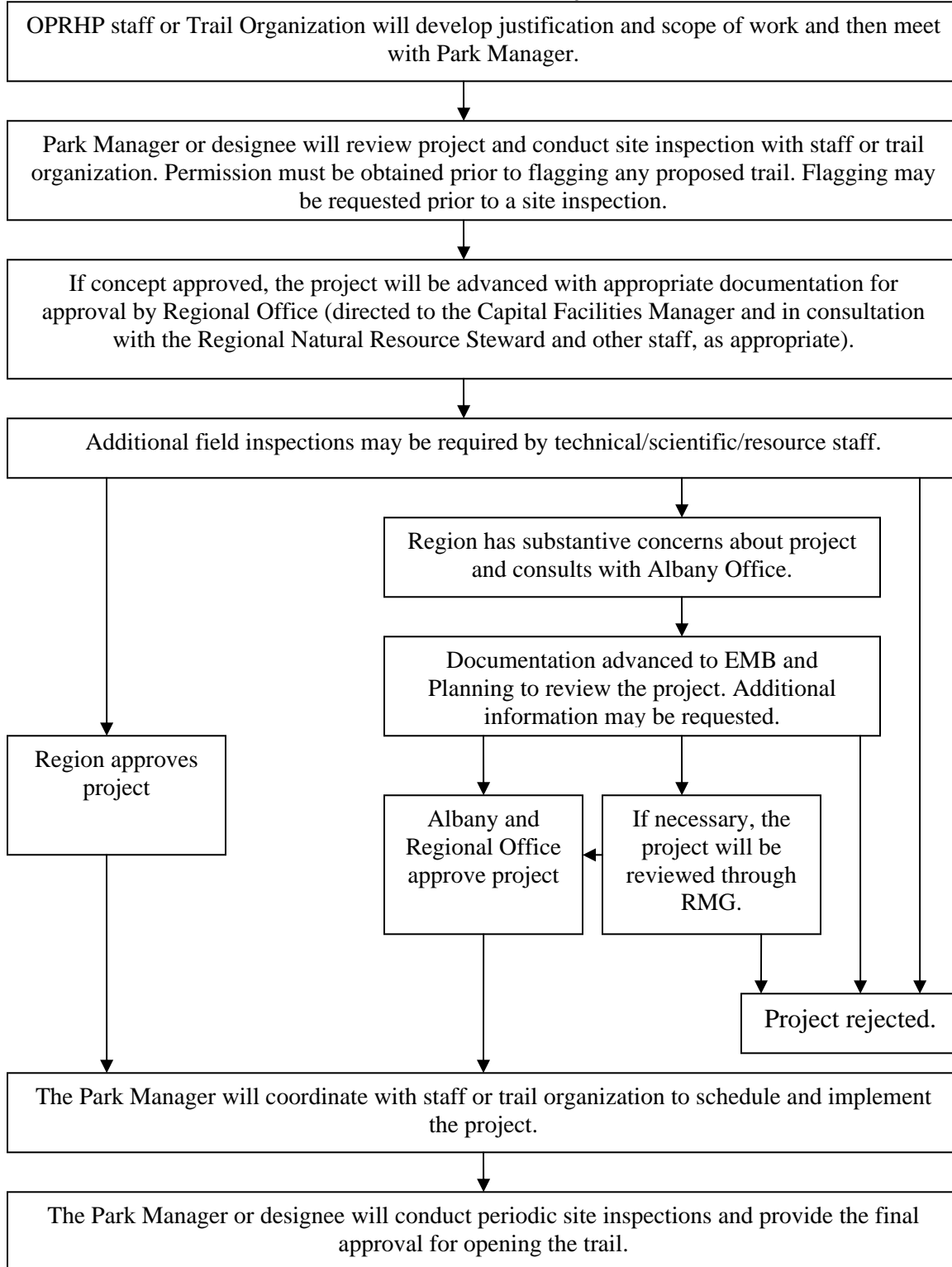
There is a specific procedure for the reroute and development of trails and the annual maintenance of trails. Chart 1 outlines procedures to follow for the reroute of existing trails and the development of new trails. The scope and associated impacts of the proposed project will determine the extent of the review process. Larger proposals that may have an impact on environmental or cultural resources will require the review of the Agency's Resource Management Group (RMG). A SEQR determination will be made to determine if an Environmental Assessment would be required.

Annual maintenance encompasses routine functions, such as minor drainage control, trimming, and treadway maintenance. In most cases, this is reviewed and approved at the Park level (Chart 2).

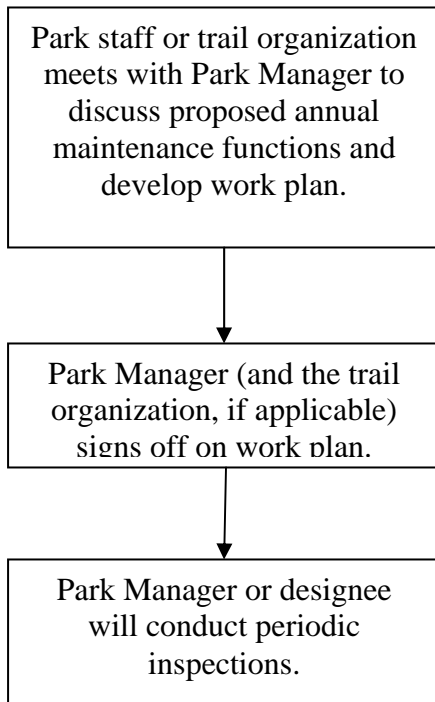
For some trails, State Parks partners with trail organization(s) for development and/or maintenance. It is important that clear lines of communication are maintained among all involved parties. This will

ensure that the work that is performed has gone through the review process and is under the direction of the park manager.

**Chart 26: Procedures for Reroute / Relocation / New Trail Project**



**Chart 27: Approval for Trail Maintenance**



### ***Monitoring Program***

A monitoring program should be utilized to monitor trail conditions. A monitoring program will include an annual inspection of all trails and periodic inspections of trails throughout the year. Volunteers may aid in this process in many cases. The monitoring program should include:

- Monitoring trail use to avoid user conflicts and to ensure sustainability.
- Monitoring trail conditions, educating trail users, and utilizing other methods to identify and report the locations of invasive species.
- Where overuse is occurring, providing remediation through the use of water control and trail hardening techniques, by relocating sections of trail, and/or by limiting trail use.

## Appendix G—Caumsett State Historic Park Preserve Management Zones

Management Zones	Key Characteristics and Features			Historic Significance	Current Uses	Use Evaluation Criteria
	Structures	Landscape	Circulation			
<p>Zone 1</p> <p>Main House and Formal Gardens</p>	<p>Field House, Master's Garage, Dinham Cottage.</p> <p>Indoor tennis court (site), bath houses (site).</p>	<p>Great lawn, long view, rock garden, terrace &amp; Fresh Pond.</p> <p>Remnants of ornamental plantings and historic drive at site of indoor tennis court.</p>	<p>Main estate drive: historic entry to house by car includes winding path with framed vistas; cobblestone gutters, stone bridges and culverts.</p>	<p>Highly significant; historic structures and landscape are essential intact and associated with property's period of significance.</p> <p>Comprises the core of the Field's main residence and associated gardens.</p>	<p>Field House used intermittently for meetings &amp; special events.</p> <p>Master's Garage contains public restrooms and gathering space, housing for Parks interns and storage.</p> <p>Dinham Cottage used as a residence.</p>	<p>Permit activities that are compatible with its historic uses; preserve and interpret main house to Field era.</p> <p>Field House: appropriate uses include guided &amp; self-guided tours, educational programs, limited overnight lodging, limited dining, and venue for small business meetings and receptions.</p> <p>Dinham Cottage: continued residential use or as offices to support main house programs.</p> <p>Gardens, lawns and vistas should be restored.</p>
<p>Zone 2</p> <p>Polo Stable and Fields</p>	<p>Polo Stable, Stable Cottage, Stallion Stable, Lower Stable.</p> <p>Game keeper's cottage and kennels (site).</p> <p>Non-historic structures: Indoor riding rink, Boarding stable</p>	<p>Stable yards/paddocks, polo/riding fields and pasture.</p>	<p>Main estate drive; main drive into polo stable; and 4 corners.</p>	<p>Highly significant; historic structures and landscape are essential intact and associated with property's period of significance.</p> <p>The Polo stable is an important feature relating to leisure activities on a gentleman's estate and a fine example of Beaux-Arts site planning.</p>	<p>Polo Stable used for boarding horses, offices and housing for equestrian concessionaire's operations.</p> <p>Stable Cottage used as park manager's residence.</p> <p>Stallion Stable - storage.</p> <p>Lower Stable used for boarding horses.</p>	<p>Permit activities that are compatible with historic equestrian uses; preserve and interpret stables to Field era. Maintain pasture areas.</p> <p>Indoor riding rink and boarding stable are visually intrusive and should be mitigated to reflect the historic nature of the park.</p> <p>Continue residential use of stable cottage.</p>

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Management Zones	Key Characteristics and Features			Historic Significance	Current Uses	Use Evaluation Criteria
	Structures	Landscape	Circulation			
Zone 3 Farm Group	Dairy barns, hay barn, horse/machinery barn, sheds, offices, and greenhouses.  Non-historic structures: visitor info kiosk, contact station, gas pumps.	Walled garden, fenced pens, pasture.	Service drive (features similar to main estate drive); "cobblestone" roads and drives within barn complex.	Highly significant; historic structures and landscape are essential intact and associated with property's period of significance.  Important example of the prominence and importance of agriculture to estate's operations. Farm complex reflects state of the art developments in design and Beaux Arts site planning.	Barns used largely for storage (equipment and materials); calf barn serves as offices of Volunteers for Wildlife; estate manager's office is park manager's office; farm manager's residence serves as public restrooms and offices for park maintenance.	Permit activities that are compatible with historic uses; preserve and interpret dairy and horse barns to Field era.  Appropriate uses include visitor orientation/exhibits; park office, restrooms, performing arts venue (seasonal); agricultural demonstrations; environmental education programs; community-supported agriculture projects and limited farming activities.
Zone 4 Winter Cottage	Winter Cottage.	Terrace and flower garden; lawn with specimen trees.	Entrance drive; garden paths.	Highly significant; historic structure and landscape are essentially intact and associated with property's period of significance.  During the construction of the estate, the Winter Cottage was the main residence for the Field family. The house was also served as a residence for Fiona Field when she was married.	Storage and meeting space for park and Caumsett Foundation.	Permit activities that are compatible with historic uses; preserve and interpret house and gardens to Field era. Restore formal garden.  Appropriate uses for the Winter Cottage include limited overnight lodging, meeting space for park and Foundation, venue for small business meetings and private receptions.
Zone 5 Summer Cottage	Summer Cottage, Girls Cottage, & garage.	Formal garden (in front of Summer Cottage).	Entrance drive; garden paths.	Significant; historic structures and landscape are essentially intact and associated with property's period of significance.  Buildings were used as guest housing.	Offices for Nassau Co. BOCES environmental education program; summer camp; Girls cottage used as residence.	Permit activities that are compatible with historic uses; preserve and interpret house and gardens to Field era.  Appropriate uses for the Summer Cottage include offices, educational program space, lodging, continued use by Nassau BOCES, and educator in residence. Keep Girls Cottage as a residence.



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Management Zones	Key Characteristics and Features			Historic Significance	Current Uses	Use Evaluation Criteria
	Structures	Landscape	Circulation			
Zone 6 Gate House	Henry Lloyd house, main gates.  School house (site)  Weir Barn (not historic)	Open lawn with specimen trees; rail fence; cemetery.	Main entrance drive.	Highly significant; historic structures and landscape are essentially intact and associated with property's period of significance.	Historic house museum; barn provides space for public programming; operated by Lloyd Harbor Historical Society.	Permit activities that are compatible with historic uses. Preserve and interpret Henry Lloyd house to its colonial period; preserve gates and landscape to Field era.  Continued use by LHHS.
Zone 7 Service Entrance Area	Engineer's Cottage, Pump/Power House, and cistern/water supply.	Stone wall, open lawn with specimen trees.	Service drive.	Significant; historic structures and landscape are essentially intact and associated with property's period of significance.	Cottage used as residence Pump/Power House used for storage.	Permit activities that are compatible with historic uses. Preserve and interpret buildings to Field era.  Limit use of Cottage for single-family residence only (due to parking constraints).
Zone 8 Salt Marsh	Dock (site)	Fly Island and Sand Hole	Plank road.	Significant; historic corridor is essentially intact and associated with property's period of significance.	Fishing (by permit), boating, educational programs (salt marsh ecology); nature and bird watching.	Permit activities that are compatible with preserving and protecting natural features, native species and habitat. Zone is a designated Bird Conservation Area.  Provide information on important environmental features and their protection.  Compatible activities include environmental education programs, hiking, bird watching and fishing.  Restrict vehicle access to official use only.

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Management Zones	Key Characteristics and Features			Historic Significance	Current Uses	Use Evaluation Criteria
	Structures	Landscape	Circulation			
Zone 9  Shoreline	None	Sandy beach; bluffs.			Surf fishing; SCUBA diving, educational programs, and nature/bird watching.	<p>Permit activities that are compatible with preserving and protecting natural features, native species and habitat.</p> <p>Provide information on important environmental features and their protection.</p> <p>Compatible activities include environmental education programs, hiking, and bird watching.</p> <p>Prohibit vehicle access. Consider limited access for canoes, kayaks at designated areas (no boat launching).</p>
Zone 10  Meadow	Some areas include building foundations.	Cleared woodland; some areas include open vistas.	Trails and unpaved roads.	Meadows are remnants of pastures and cultivated fields associated with the Field estate (and possibly earlier 19th c agricultural activities).		<p>Permit activities that are compatible with preserving and protecting open meadows and as habitat for native species. Zone includes designated Bird Conservation Area.</p> <p>Compatible activities include environmental education programs, hiking, bird watching, horseback riding, and biking.</p> <p>Prohibit or limit vehicle access; develop multiple-use trails.</p>
Zone 11  Woodlands	Pheasant pens, kennels and game keeper's cottage (sites).	Native woodland with some secessional re-vegetation of formerly open fields and pasture.	Trails and unpaved roads.	Woodlands are remnants of undeveloped areas used for recreational purposes (riding, hunting), as buffer from adjacent properties, and for timber harvesting.		<p>Permit activities that are compatible with preserving and protecting woodlands and as habitat for native species. Zone includes designated Bird Conservation Area.</p> <p>Compatible activities include environmental education programs, hiking, bird watching, horseback riding, and biking.</p> <p>Prohibit or limit vehicle access; develop multiple-use trails.</p>

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Management Zones	Key Characteristics and Features			Historic Significance	Current Uses	Use Evaluation Criteria
	Structures	Landscape	Circulation			
Corridors 1-4						

